EXHIBIT A

HOST COMMUNITY AGREEMENT

This Host Community Agreement (the "Agreement") is entered into this 10th day of February 2020 (the "Effective Date") by and between the Town of Littleton, acting by and through its Board of Selectmen, with a principal address of 37 Shattuck Street, Littleton, MA 01460 (the "Town") and G7 Lab, LLC, a Massachusetts limited liability company with a principal office address of 160 Ayer Road, Unit 3, Littleton MA 01460 (the "Company"). The Town and the Company are hereinafter collectively referred to hereafter as the "Parties".

WHEREAS, the Company is the lessee of the property at 160 Ayer Road, Unit 3, Littleton, MA ("the Premises");

WHEREAS, the Company proposes to seek a license from the Cannabis Control Commission to operate an Independent Testing Laboratory within the meaning of 935 CMR 500.002 to conduct a research and quality control testing laboratory qualified to test cannabis or marijuana in compliance with M.G.L. c.94G, §15 and 935 CMR 500.160 (the "Facility") at the Premises:

WHEREAS, M.G.L. c. 94G, §3(d) requires that:

> [a] marijuana establishment or a medical marijuana treatment center seeking to operate or continue to operate in a municipality which permits such operation shall execute an agreement with the host community setting forth the conditions to have a marijuana establishment or medical marijuana treatment center located within the host community which shall include, but not be limited to, all stipulations of responsibilities between the host community and the marijuana establishment or a medical marijuana treatment center. An agreement between a marijuana establishment or a medical marijuana treatment center and a host community may include a community impact fee for the host community: provided, however, that the community impact fee shall be reasonably related to the costs imposed upon the city by the operation of the marijuana establishment or medical marijuana treatment center and shall not amount to more than 3 per cent of the gross sales of the marijuana establishment or medical marijuana treatment center or be effective for longer than 5 years. Any cost to a city or town imposed by the operation of a marijuana establishment or medical marijuana treatment center shall be documented and considered a public record as defined by clause Twenty-sixth of section 7 of chapter 4;

WHEREAS, M.G.L. c. 94G, §12(h) requires that "[e]ach licensee shall file an emergency response plan with the fire department and police department of the host community";

WHEREAS, the Company and the Town each enter into this Agreement with the intention of being bound by its terms such that this Agreement shall be fully enforceable by a Court of competent jurisdiction;

WHEREAS, the Company and the Town intend by this Agreement to satisfy the provisions of M.G.L. c.94G, §3(d) applicable to the operation of the Facility in Littleton.

NOW THEREFORE, in accordance with M.G.L. c. 94G and the regulations of the Cannabis Control Commission promulgated thereunder as 935 CMR 500.00 *et seq.*, the Company agrees as follows:

1. **Representation as to Leasehold.** The Company represents that the use of the Premises for its Facility is expressly permitted under the terms of its lease of the Premises.

2. **Compliance.** The Company shall be responsible for obtaining all necessary licenses, permits, and approvals required for the operation of an Independent Testing Laboratory in Littleton and shall comply with all laws, rules, bylaws or ordinances, regulations and orders applicable to the operation of an Independent Testing Laboratory, such provisions being incorporated herein by reference, including, but not limited to: M.G.L. c. 94G and the regulations of the Cannabis Control Commission as the same may be amended from time to time; and the Town of Littleton General Bylaws, Sign Bylaws, and Zoning Bylaws, as may be amended from time to time.

3. **Community Impact Fee.** Based on the representations of the Company, the Facility will not have more than a few employees and it will not be visited regularly by any members of the general public. As a result the Parties do not anticipate as of the date of this Agreement that the Facility will have impacts on the Town that are different in kind from other office or laboratory uses. The Company shall not be required to pay a community impact fee to the Town; provided, however, that if the Company's operation of the Facility result in impacts and/or costs to the Town, then the Parties shall promptly and in good faith enter into negotiations to establish a community impact fee that is reasonably related to such impacts and/or costs.

4. **In-kind Testing Services.** In an effort to show goodwill to the surrounding community and to demonstrate its support for local law enforcement initiatives, the Company will provide the Town with analytical laboratory services at no cost to the Town, which services will include providing analytical testing of cannabis and cannabis-infused products at the request of the Town's law enforcement in which such substances are subject to investigation, providing expert advice on the cannabis industry and educational support in the form of workshops and compliance classroom events. The precise nature of the services provided to the Town may change over the course of the term (defined herein), but in no event shall the value of the complimentary analytical laboratory services exceed $8,000 annually in gross value. The Town understands and acknowledges that the Company's agreement to provide complimentary analytical laboratory services is contingent upon the Company's receipt of licensure from the Cannabis Control Commission to operate an Independent Testing Laboratory, and local approvals for the same. If the Company does not receive licensure from the Cannabis Control Commission to operate an Independent Testing Laboratory, the Town acknowledges and agrees that the value cap on the services to be performed under this Agreement may be reduced.

   If any term or condition deemed unlawful concerns the right of the Town to receive such services, the parties agree that such services shall constitute a grant or

donation for the purposes set forth herein.

5. **Term.** The term of this Agreement shall be five (5) years commencing on the date listed in paragraph 1, above, unless sooner terminated by:

    a. Revocation of the Company's license by the Cannabis Control Commission; or
    b. The Company's voluntary or involuntary cessation of operations; or
    c. The Town's termination or this Agreement for breach of the conditions contained herein that remain uncured 60 days from the date of notice of such breach

    after which time, this Agreement shall become null and void.

    If the Company should voluntarily cease all operations in Littleton, the Company shall immediately notify the Town in writing, including the effective date of cessation of operations, whereupon this Agreement shall become null and void except that the Company shall continue to provide analytical testing of cannabis and cannabis- infused products through the date of termination of the operation. The Town may terminate this Agreement at any time during the Term of this Agreement.

6. **Hours of Operation.** The Company's hours of operation shall be limited to 6:00 a.m. to 12:00 p.m. seven days per week. Deliveries of samples for testing shall only occur between the hours of 9:00 a.m. and 5:00 p.m.

7. **Real and Personal Property Taxes.** At all times during the Term of this Agreement, property, both real and personal, owned or operated by the Company shall be treated as taxable, and all applicable real estate and personal property taxes for that property shall be paid either directly by the Company or by its landlord, and neither the Company nor its landlord shall object or otherwise challenge the taxability of such property and shall not seek a non-profit exemption from paying such taxes. Notwithstanding the foregoing, (i) if real or personal property owned, leased or operated by the Company is determined to be non-taxable or partially non-taxable, or (ii) if the value of such property is abated with the effect of reducing or eliminating the tax which would otherwise be paid if assessed at fair cash value as defined in G.L. c. 59, §38 or (iii) if the Company is determined to be entitled or subject to exemption with the effect of reducing or eliminating the tax which would otherwise be due if not so exempted, then the Company shall pay to the Town an amount which when added to the taxes, if any, paid on such property, shall be equal to the taxes which would have been payable on such property at fair cash value and at the otherwise applicable tax rate, if there had been no abatement or exemption.

8. **Community Support and Additional Obligations.**
    a. Local Vendors — To the extent such practice and its implementation are consistent with federal, state and municipal laws and regulations, the Company shall make a diligent effort and shall use good faith efforts in a legal and non-discriminatory manner to give priority to qualified local

businesses, suppliers, contractors, builders and vendors in the provision of goods and services called for in the construction, maintenance and continued operation of the Facility.

b. Employment/ Salaries — Except for senior management, and to the extent such practice and its implementation are consistent with federal, state and municipal laws and regulations, the Company shall use good faith efforts in a legal and non- discriminatory manner to give priority to hire qualified residents of Littleton as employees and to encourage diverse hiring at the Facility.

c. Approval of Manager - If requested by the Town, the Company shall provide to the Town, for review and approval, the name and relevant information, including but not limited to the information set forth in 105 CMR 725.030. or such other state regulations, as the case may be, of the person proposed to act as on-site of the Facility. The submittal shall include authorization and all fees necessary to perform a criminal history (CORI) check or similar background check. The Town shall consider such request for approval within thirty days following submittal to determine, in consultation with the Police Chief, if the person proposed is of suitable character to act as on-site manager. Such approval shall not be reasonably denied, conditioned or delayed. This approval process shall also apply to any change of on-site manager.

d. Education – The Company shall provide staff to participate in Town-sponsored educational programs on public health and drug abuse prevention, and to work cooperatively with any of the Town's public safety departments to mitigate any potential negative impacts of the Facility.

e. Reporting - The Company shall, at least annually, provide the Town with copies of all reports submitted to the Cannabis Control Commission and Massachusetts Department of Revenue and all other public agencies to whom licensing applications or supporting information must submitted regarding Company's operations at the Facility.

9. <u>Non-Opposition to Application.</u>

a. The Town agrees to submit to the Cannabis Control Commission documentation that it has entered into this Host Community Agreement as of the date identified in paragraph 1 above, and that the Facility is generally permissible at the Premises subject to the Company obtaining all necessary local permits. The Town agrees to not oppose the application to the Cannabis Control Commission but makes no representation or promise that it will act on any other license or permit request in any particular way other than by the Town's normal and regular course of conduct and in accordance with its bylaws, rules and regulations and any statutory guidelines governing them.

b. This agreement shall not affect, limit or control the authority of any Town boards, commissions and departments to carry out their respective powers

and duties to decide upon and to issue or deny applicable permits and other approvals under the statutes and regulations of the Commonwealth, the General and Zoning Bylaws of the Town or applicable regulations of those boards, commissions and departments, or to enforce said statutes, bylaws and regulations. The Town, by entering into this Agreement, is not required or obligated to issue permits and approvals as may be necessary for the Company to operate its Facility in Littleton, or to refrain from enforcement action against the Company and/or the Facility for violation of the terms of said permits and approvals or said statutes, bylaws and regulations.

10. Security.
    a. The Company shall maintain security at the Facility in accordance with a security plan presented to the Town and approved by the Cannabis Control Commission and the Town. In addition, the Company shall at all times comply with state and local requirements regarding security of the Facility which compliance shall include, but not be limited to compliance with the security and traffic management plan and emergency response plan and access to surveillance operations; and requiring independent testing lab agents to produce their agent ID card to law enforcement upon request.

    b. In addition to the requirements of Section 10.a, the Company shall, prior to the commencement of operations, submit to the Town's Police Chief and Fire Chief, and obtain their respective approval of, security, traffic management and emergency response plans which include at a minimum: (i) A description of the location and operation of the security system, including the location of the central control on the premises; (ii) a schematic of security zones; (iii) the name of the security alarm company and monitoring company, if any; (iv) a floor plan or layout of the facility identifying all areas within the facility and grounds, including support systems and the internal and external access routes; (v) the location and inventory of emergency response equipment and the contact information of the emergency response coordinator for the laboratory; (vi) the location of any hazardous substances and description of any public health or safety hazards present at the site; (vii) a description of any special equipment needed to respond to an emergency at the laboratory (viii) an evacuation plan; (ix) any other information relating to emergency response as requested by the Littleton Fire Department or the Littleton Police Department. The Company shall also place no fewer than two security cameras within and outside of the area located to provide an unobstructed view in each direction of the public way(s) on which the facility is located.

11. Cooperation. The Company will work cooperatively with all necessary municipal departments, boards, commissions and agencies to ensure that Company's operations are compliant with all municipal bylaws, ordinances, codes, rules and regulations. The Company shall maintain a cooperative relationship with the Town's Police and Fire Departments and shall meet no less than once every year, or upon request of the Town's Chief of Police, to review operational concerns, security, delivery schedule and procedures, cooperation in investigations, and communication to the Police Department of any suspicious activities at or in the immediate vicinity

of the Facility, and with regard to any anti-diversion procedures. To the extent requested by the Town's Police Department, the Company shall work with the Police Department to implement a comprehensive diversion prevention plan. Such plan shall include, but is not be limited to, training Company employees to be aware of, observe and report any unusual behavior in authorized visitors or other Company employees that may indicate the potential for diversion.

12. Governing Law. This Agreement shall be governed and construed and enforced in accordance with the laws of the Commonwealth of Massachusetts.

13. Amendments/Waiver. Amendments or waivers of any term, condition, covenant, duty or obligation contained in this Agreement may be made only by written amendment executed by all Parties, prior to the effective date of the amendment.

14. Severability. If any term or condition of this Agreement or any application thereof shall to any extent be held invalid, illegal or unenforceable by the court of competent jurisdiction, the validity, legality and enforceability of the remaining terms and conditions of this Agreement shall not be deemed affected thereby unless one or both Parties would be substantially or materially prejudiced. Further, the Company agrees it will not challenge, in any jurisdiction, the enforceability of any provision included in this Agreement; and to the extent the validity of this Agreement is challenged by the Company in a court of competent jurisdiction, the Company shall pay for all reasonable fees and costs incurred by the Town in enforcing this Agreement.

15. Successors/Assigns. Company shall not assign, sublet or otherwise transfer this Agreement, in whole or in part, without the prior written consent of the Town and shall not assign any of the moneys payable under this Agreement, except by and with the written consent of the Town. This Agreement is binding upon the Parties hereto, their successors, assigns and legal representatives (as may be approved by the Town as provided for above).

16. Entire Agreement. This Agreement constitutes the entire integrated agreement between the Parties with respect to the matters described. This Agreement supersedes all prior agreements, negotiations and representations, either written or oral, and it shall not be modified or amended except by a written document executed by the Parties hereto.

17. Notices. Except as otherwise provided herein, any notices, consents, demands, requests, approvals or other communications required or permitted under this Agreement shall be in writing and delivered by hand or mailed postage prepaid, return receipt requested, by registered or certified mail or by other reputable delivery service, and will be effective upon receipt for hand or said delivery and three days after mailing, to the other Party at the following address:

If to the Town:
Town Administrator
Town of Littleton
37 Shattuck Street, PO Box 1305
Littleton, MA 01460

With a copy to:

Town Counsel:
Thomas J. Harrington
Miyares and Harrington LLP
40 Grove Street • Suite 190
Wellesley, MA 02482

If to the Company:
Shankar Gautam, Manager
G7 Lab LLC
160 Ayer Road, Unit 3
Littleton, MA 01460

With a copy to:

Counsel for Company:
Blake M. Mensing
The Mensing Group LLC
100 State Street, 9th Floor
Boston, MA 02109

In witness thereof, the Parties hereto have duly executed this Host Community Agreement on the date set forth above.

Town of Littleton

Joseph Knox, Chair

Cynthia Napoli, Vice Chair

Chuck DeCoste

Chase Gerbig

Paul Glavey

G7 Lab, LLC

Shankar P. Gautam, Manager

EXHIBIT B

Date:07/10/2020

Planning Board of Littleton MA
37 Shattuck St, Room 303
Littleton, MA 01460

Subject: Application Status of G7 lab LLC to The Cannabis Control Commission (CCC) for Cannabis Testing Laboratory at 160 Ayer Rd, Unit 3, Littleton, MA

Dear Chair and Board Members:

G7 lab LLC filed its application to the CCC on 05/14/2020. We received a Notice of Application Deemed Complete from CCC on June 19,2020. The notice also instructed us to pay$800.00 in background check fees and $70.0 for fingerprint verification. A municipal response form was also sent with the municipal notice to the Town Administrator. This response is on Select Board's Agenda for Jul 13,2020.

Please let me know if you have further quires relating to the application to the CCC.

Thank you!
Shankar P. Gautam.
G7 Lab LLC
160 Ayer Rd, Unit 3
Littleton, MA 01460.

EXHIBIT C

Cannabis Control Commission
COMMONWEALTH OF MASSACHUSETTS

Waiver Request Form

Instructions

Under 935 CMR 500.700 and 501.700, an individual or entity (Requestor) may request a waiver from full compliance with a requirement mandated by the Commission's regulations. This form shall be used for all waiver requests relating to adult-use regulations, medical-use regulations, or both, with the exception of requests to waive Agent Registration CORI report requirements.

The Requestor must submit additional waiver requests for additional requirements—only one requirement may be considered per request form. If the Requestor is requesting a waiver from a requirement that applies to them by both the adult-use and medical-use regulations, and the requirement is the same per both regulatory schemes, they may use one form and state the appropriate provisions seeking to be waived. One form may be used if a licensee is requesting to waive the same requirement for multiple licenses.

Written documentation is required to evaluate the waiver request. The Requestor must specifically state the regulation(s) requested to be waived, the reasons why it should be waived, and explain why the waiving of this requirement will not pose a risk to the health, safety, or welfare of the public or patients. If applicable, the Requestor may provide alternative compensating steps or features that will be utilized in lieu of the requirement. Once received by the Commission, your request will be evaluated.

The request must be filled out electronically and signed by the Requestor. If the Requestor is an entity, the form must be signed by an individual who has authority to act on behalf of the entity (Requestor's Representative). Additional documentation may be submitted along with the request form as long as it directly addresses the requirement to be waived.

Before the request is submitted, it must be notarized. Once completed, the waiver form and any additional information should be combined into a single PDF document and emailed to Licensing@CCCMass.com.

Review

Waiver requests will be evaluated in the order they are received. If the Requestor is a Medical Marijuana Treatment Center (MTC) or Marijuana Establishment (ME) and is requesting to waive a security-related requirement, the Commission must notify the host community's Chief Law Enforcement Officer of the request and give a 30-day period for the officer to respond. The Chief Law Enforcement Officer's opinion will be considered in the Commission's decision but will not be determinative.

Once the request has been evaluated by the Commission, the Requestor or the Requestor's Representative will be notified.

I. Requestor Information

1. What is the Requestor's name? If an entity, please state the legal name of the entity:

G7 Lab LLC

2. What is the Requestor's status?:

- ☑ Applicant (MTC, ME, or both)
- ☐ Licensee (MTC, ME, or both)
- ☐ Applicant (Registered Agent)
- ☐ Registered Agent
- ☐ Certifying Health Care Provider
- ☐ Qualifying Patient
- ☐ Personal Caregiver
- ☐ Caregiving Institution
- ☐ Institutional Caregiver

3. Requestor's application/license/registration number(s) that will be affected by this request *(if applicable)*:

ILN281334

4. Requestor's address(es), phone number, and email address:

160 Ayer Rd Unit 3,
Littleton, MA 01460
507 313 8141
g7labllc@gmail.com

5. Name, relationship to Requestor, address, phone number, and email address of Requestor's Representative *(if acting on behalf of the Requestor)*:

II. Required Waiver Request Information and Documentation

6. List the specific regulation(s), and associated regulatory cite(s), that is requested to be waived:

500.050: Marijuana Establishments 7 (a)1. Accredited to the most current International Organization for Standardization (ISO)17025 by a third-party accrediting body that is a signatory to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement or
2. Certified, registered, or accredited by an organization approved by the Commission.

7. List the reason(s) why this regulatory requirement should be waived and not apply to the Requestor *(use additional documents/pages if needed—please appropriately reference addendums):*

Requesting to waive the above mentioned requirement only for application until Provisional License for following reasons:
1. The Laboratory is yet to be completed and the Lease to the property is only executable upon provisional License. Once the provisional license is granted and lease is executed ,The laboratory instruments and methods will be validated and all Quality Control and Testing Procedures will be submitted to the commission as per above regulation.

2. To control the amount of expenditure on instruments and laboratory, I the applicant do not plan on validating methods and SOP`s until provisional license.

The above mentioned waiver is only for the Application not for final License.

8. List the alternative compensating steps or features that will be utilized in lieu of the requirement if the waiver request is granted *(if applicable)*:

The above mentioned regulations will be strictly followed and all documents will be submitted to the Commission after provisional License but before inspection and final license.
Thus, there will be no alternative compensating steps or features that will be utilized in lieu of the requirement.

9. In the opinion of the Marijuana Establishment or its Representative, if the Commission waives this regulatory requirement, will the waiving of this requirement pose a risk to the health or safety of consumers, patients, or the public? Please check one of the boxes below:

   ☐ Yes
   ☑ No

10. Please explain the reasons why the waiving of the requirement will not pose a risk to the health or safety of consumers, patients, or the public:

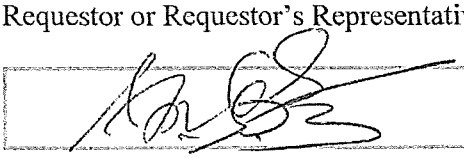
Waiving the above mentioned requirement only for application, until provisional license will not pose a risk to the health or safety of consumers, patients or the public because the regulation will be followed in full after provisional License before final inspection and final License of the Independent testing facility G7 lab LLC . The lab will be certified to (ISO)17025 by a third-party accrediting body that is a signatory to the International Laboratory Accreditation Cooperation (ILAC) and all procedures for quality control and testing of product for potential contaminants will be submitted prior to inspection and final License.

By signing this document, I affirm that all the information provided above is true and accurate. I understand that all requirements listed in 935 CMR 500, 501, and 502 *(where applicable)* must be complied with unless otherwise notified by the Commission. Failure of the Requestor or its Representative to fully complete this form may result in the denial of your waiver request.

Requestor or Requestor's Representative Printed Name:

Shankar Gautam

Requestor or Requestor's Representative Signature:

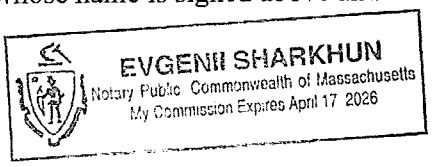


Date of Request:

05-09-2020

Authentication by Notary Public

On this 9 day of May, 2020 before me, the undersigned notary public, personally appeared Shankar Gautam, proved to me through satisfactory evidence of identification to be the person whose name is signed above and that he/she did so voluntarily for its stated purpose.



NOTARY STAMP/SEAL

Notary Public Signature

EXHIBIT D

QUALITY CONTROL AND TESTING

G7 Lab LLC ("G7 Lab") will not sell or market any marijuana product that has not been tested by licensed Independent Testing Laboratories ("ITL"). Testing of marijuana products shall be performed by an Independent Testing Laboratory in compliance with protocol(s) established in accordance with M.G.L. c.94G § 15 and in a form and manner determined by the Commission including, but not limited to, the Protocol for Sampling and Analysis of Finished Medical Marijuana Products and Marijuana-infused Products). Testing of environmental media (e.g., soils, solid growing media, and water) shall be performed in compliance with the Protocol for Sampling and Analysis of Environmental Media for Massachusetts Registered Medical Marijuana Dispensaries published by the Commission. 935 CMR 500.160(1).

Marijuana shall be tested for the Cannabinoid Profile and for contaminants as specified by the Commission including, but not limited to, mold, mildew, heavy metals, plant growth regulators, and the presence of Pesticides. The Commission may require additional testing. 935 CMR 500.160(2)

An Independent Testing Laboratory shall report any results indicating contamination to the Commission within 72 hours of identification. 935 CMR 500.160(3); M.G.L. c.94G § 15(a)(3).

An ITL shall apply for a certificate of registration from the Commission prior to testing, processing or transporting marijuana. M.G.L. c.94G § 15(b)(1).

A Marijuana Establishment shall maintain the results of all testing for no less than one year. Testing results shall be valid for a period of one year. 935 CMR 500.160(4).

All transportation of Marijuana to and from Independent Testing Laboratories providing Marijuana testing services shall comply with 935 CMR 500.105(13).

All storage of Marijuana at a laboratory providing Marijuana testing services shall comply with 935 CMR.105(11).

All excess Marijuana must be disposed of in compliance with 935 CMR 500.105(12), either by the Independent Testing Laboratory returning excess Marijuana to the source Marijuana Establishment for disposal or by the Independent Testing Laboratory disposing of it directly.

Marijuana and Marijuana Products submitted for retesting prior to remediation must be submitted to an Independent Testing Laboratory other than the laboratory which provided the initial failed result. Marijuana submitted for retesting after documented remediation may be submitted to the same Independent Testing Laboratory that produced the initial failed testing result prior to remediation.

G7 Lab's policies for handling of marijuana shall be in compliance with 935 CMR 500.105(3). G7 Lab will comply with the following sanitary requirements, that include, but are not limited to: hand washing stations; sufficient space for storage of materials; removal of waste; clean floors, walls and ceilings; sanitary building fixtures; sufficient water supply and plumbing; and storage facilities that prevent contamination. All G7 Lab staff will be trained and shall ensure that marijuana and marijuana products are handled with appropriate food handling and sanitation standards specified in 105 CMR 300.000. G7 Lab will ensure that if furnishes the facility with the proper equipment and storage materials, including

adequate and convenient hand washing facilities; food-grade stainless steel tables; and temperature- and humidity- control storage units, refrigerators, and freezers.

All G7 Lab staff will immediately notify the Director of Compliance of any actual or potential quality control issues, including facility cleanliness/sterility, tool equipment functionality, and storage conditions. All issues with the facility will be investigated and immediately rectified by the Director of Compliance.

All G7 Lab staff will receive relevant quality assurance training. All staff will wear gloves when handling marijuana and marijuana products, and exercise frequent hand washing and personal cleanliness, as specified in 935 CMR 500.105(3). Marijuana products will be processed in a secure access area of G7 Lab.

Any spoiled, contaminated, dirty, spilled, or returned marijuana products are considered marijuana waste and will follow G7 Lab procedures for marijuana waste disposal, in accordance with 935 CMR 500.105(12). Marijuana waste will be regularly collected and stored in the secure-access, locked inventory vault.

Pursuant to 935 CMR 500.105(11)(a)-(e), G7 Lab shall provide adequate lighting, ventilation, temperature, humidity, space and equipment, in accordance with applicable provisions of 935 CMR 500.105 and 500.110. G7 Lab will have a separate area for storage of marijuana that is outdated, damaged, deteriorated, mislabeled, or contaminated, or whose containers or packaging have been opened or breached, unless such products are destroyed. G7 Lab storage areas will be kept in a clean and orderly condition, free from infestations by insects, rodents, birds, and any other type of pest. The G7 Lab storage areas will be maintained in accordance with the security requirements of 935 CMR 500.110 and its Security Plan.

RESTRICTING ACCESS TO AGE 21 OR OLDER

G7 Lab LLC ("G7 Lab" or "the Company") is a marijuana establishment as defined by 935 CMR 500.002. The Company sets forth the following policies and procedures for restricting access to marijuana and marijuana infused products to individuals over the age of twenty-one (21) pursuant to the Cannabis Control Commission's (the "Commission") regulations at 935 CMR 500.105(1)(o). This regulation states that written operating procedures for the Company shall include "[p]olicies and procedures to prevent the diversion of marijuana to individuals younger than 21 years old."

A. COMPLIANCE WITH 935 CMR 500.105(1)(o)

The Company incorporates and adopts herein by reference, all of the provisions for the prevention of diversion outlined in the Company's Standard Operating Procedure for the Prevention of Diversion. The provisions detailed in the Company's Standard Operating Procedure for the Prevention of Diversion apply to the prevention of diversion of marijuana and marijuana infused products to all minors and all individuals under the age of twenty-one (21).

B. SPECIFIC PROVISIONS FOR RESTRICTING ACCESS TO AGE 21 AND OLDER

As stated above, the Company incorporates herein, all provisions for the prevention of diversion of marijuana and marijuana infused product to individuals under the age of twenty-one (21) as detailed in the Company's Standard Operating Procedure for the Prevention of Diversion. Specific provisions regarding restricting access to individuals age twenty-one (21) and older include the following:

1. The Company will only employ marijuana establishment agents, as defined by the Commission's definitions at 935 CMR 500.002, who are at least twenty-one (21) years old.

2. The Company will only allow visitors, age twenty-one (21) or older, at the Company's facilities. The Company defines visitors in accordance with the Commission's definitions at 935 CMR 500.002. The Company will designate an authorized agent to check the identification of all visitors entering the Company's facilities and entry shall only be granted to those aged twenty-one (21) or older. Acceptable forms of currently valid identification include:
    a. A motor vehicle license;
    b. A liquor purchase identification card;
    c. A government-issued identification card;
    d. A government-issued passport; and
    e. A United States-issued military identification card.

Sections in This Document

1. Introduction

This Laboratory Manual of Quality Policies has been prepared to meet the requirements for laboratory accreditation of the International Organization for Standardization/International Electrotechnical Commission (ISO/IEC 17025:2017) and Cannabis Control Commission of MA (CCC) requirement for Certification and or registration of G7 Lab LLC(G7) as an Independent Testing Laboratory for Testing Cannabis plant flower, Cannabis infused products or any cannabis related testing.

This manual is directly based on FDA manual of Quality Policies for ORA regulatory Laboratories.

2. Controlled Distribution of the Quality Manual

The management of G7 is responsible for maintaining the official master copy of the Laboratory Manual which contains the Laboratory Quality Assurance Manual. This Manual consists of Laboratory Manual of Management Requirements and, ISO 17025:2017 Laboratory Procedures. Biennial review is coordinated by the management. All the laboratory procedures, Standard Operating Procedure (SOP), manuals, policies will be maintained via document control module of Media Lab INC.

3. Quality Policy Statement

G7 is committed to providing testing that meets both the needs of the customers, CCC and the requirements of ISO/IEC 17025:2017 and to continually improve the effectiveness of the management system. Testing results are reported within stated limits of accuracy, precision, and detection limits as described in the methods used for analysis.

3.1. Management System Objectives

A. The primary objective of the management system established by G7 is to assure the accuracy and precision of laboratory results so that they will be reliable, interpretable, repeatable, and defensible. Data quality objectives are described in the terms of:

1. Accuracy
2. Precision
3. detection and quantitation limits,
4. timeliness, and
5. comparability.

B. Second, strive to meet or exceed the CCC, ISO/IEC 17025:2017 requirements, local regulations if applicable and customer's needs and expectations.

C. Third, maintain G7s' reputation for quality by fostering continuous process improvement and problem prevention.

These objectives are considered as part of the reviews performed by management.

3.2. Management System Awareness and Implementation

The management system documents and test methods are included as training elements in the laboratory's training program addressed in the laboratory training procedure. This ensures that staff is familiar with quality documentation and implement the quality policies and procedures in their work. See G7 Gen 3.0 Personnel Training and Competency Management.

4. General Requirements

4.1. Impartiality

4.1.1. To avoid conflicts of interest, pressures, and influences, G7. employees will be familiar with and observe the standards Set by G7, the requirements of CCC, and ISO 17025:2017.

4.1.2. Risks to impartiality are continuously reviewed and eliminated or minimized to ensure there is no compromise to the objectivity of staff engaged in laboratory activities.

Two core concepts are embodied in these principles: (a) Employees shall not use laboratory for private gain, (b) and employees shall act impartially and not give preferential treatment to any private organization or individual.

4.1.3. Risks to impartiality may be identified during required routine disclosures by employees or during audits. When laboratory employees or processes pose a risk to impartiality, an assessment is made of the nature of the risk and appropriate corrective actions are taken by the laboratory management.

4.2. Confidentiality

4.2.1. All G7 staff certify their agreement to abide by G7's confidential information Policy. Contract employees are required to sign this form as well. This form certifies their agreement to abide with G7's confidentiality requirements which are also included in purchasing agreements, as needed, with vendors performing work in areas where laboratory work is performed.

4.2.2. G7 does not release confidential information to external parties. Information is released only to CCC, the customer or designated representative and local or State law enforcement if required or relevant.

4.2.3. Reports of information and data are transmitted and filed in accordance with official policies. Most reports are only transmitted internally within the laboratory, except as required by law or regulation. Information is released only to CCC, the customer or designated representative.

4.2.4. G7 is a controlled-access building to further ensure protection of data. Visitors to G7 are escorted by Lab Agents beyond reception area and allowed only in areas approved by security protocols in place to ensure no customer information is compromised. Additionally, employees are committed to properly keep and use confidential information obtained or witnessed during their duties.

5. Structural Requirements

5.1. Laboratory as a legal Entity

G7 is a Limited liability company registered in The Commonwealth of Massachusetts with the secretary of the Commonwealth. The Laboratory is required to follow the CCC regulations in 935 CMR as applicable to Independent Testing Laboratory, ISO/IEC 17025:2017 and all applicable local regulation.

5.2. Management Responsible for Laboratory

The Technical Manager (TM) is responsible for establishing the organization's commitment to the management system, implementing it, and delegating responsibility for its accomplishment.

The Technical manager is also responsible for issuing policy and procedures and monitoring their implementation.

Laboratory management, Technical manager and laboratory staff are responsible for ensuring that analytical activities meet the requirements of the CCC, ISO17025:2017, regulations in 935 CMR 500 and local regulations. In addition, each person involved in the generation of data is part of the management system.

5.3. Scope of Accredited Laboratory Activities

Laboratory activities encompass all processes from the review of vendG7 for external products and services to sample, equipment, supply, and data handling and reporting within the laboratory. G7 will have documented training, proficiency, and method validation and verification programs in place. To ensure consistency in these processes controlled, approved documents are maintained to provide guidance in all processes and records retained to recreate processes, if needed. These also provide the basis to evaluate risks and improvements where gaps are identified through nonconformances, complaints, and annual management review of the inputs and outputs of operations.

5.4. Laboratory Requirements

The intent of G7 is to operate testing laboratory per the following requirements:

A. 935 CMR 500

B. ISO/IEC 17025:2017,

C. Massachusetts Department of Public Health (MDPH)

D. G7's compliance programs and assignments,

E. State and local laws and regulations, and

F. Accreditation requirements.

5.5. Laboratory Organizational Structure and Procedures

5.5.1. G7 being a small laboratory The TM and Quality Manager's (QM) responsibility is carried out by the TM as allowed by the QAPP manual of MDPH. The organization and the relationship among the laboratory staff are reflected in the laboratory's organizational chart maintained by the laboratory. These charts provide relationships between management, technical operations, and support personnel. The chart is presented as follows:

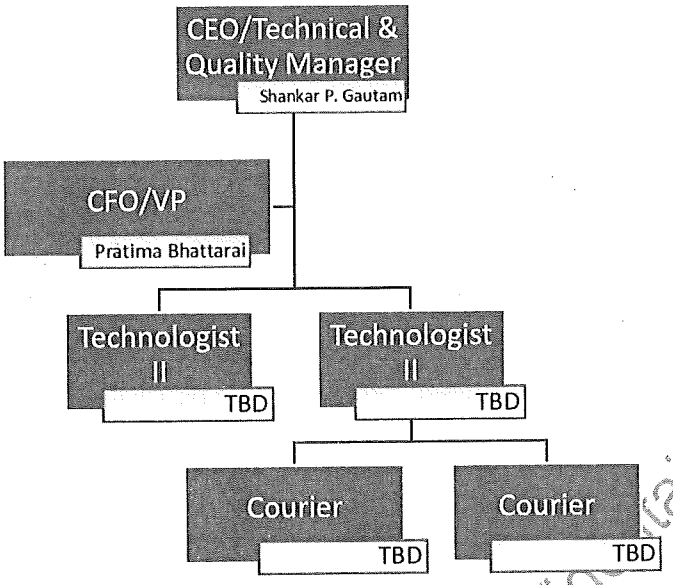


Figure 1. organizational Chart, TBD=To be Dependent

5.5.2. The laboratory has managerial staff with the authority to discharge their duties as reflected in the prepared job descriptions by the laboratory. This authority includes the implementation, maintenance, and improvement of the management system.

Job responsibilities and position description for laboratory employees are documented in the document control management system. All documents are controlled and managed in media lab document control system.

5.5.3. The laboratory management system is outlined in the following documents:

A. Quality Assurance Manual,

B. Written procedures,

C. Work Instructions,

D. References, and

E. Forms and records.

This management system is established to address the requirements in ISO/IEC 17025:2017 and CCC 935 CMR 500. G7 establishes and maintains documents per the procedure for document control. The documents listed above are accessible to all laboratory personnel and are included in the laboratory's training program.

5.6. Personnel Responsibilities and Authority

Laboratory personnel are aware of their roles and contributions in the management system and of its objectives through regularly scheduled training provided by the management. Laboratory personnel irrespective of other responsibilities have the authority and resources to carry out their duties.

5.6.1. General roles and responsibilities for laboratory personnel are summarized as follows:

F. Technical Manager

1. Ensures that the management system is established, implemented, and maintained in conformance with the requirements of ISO/IEC 17025:2017, CCC and local regulations.
2. Advocates and coordinates quality improvements to the management system.
3. Oversee technical functions.
4. Ensure compliance with the requirements of ISO/IEC 17025:2017.
5. Ensure management system procedures, applicable standards, specifications, and regulations are followed.
6. Ensure that qualified, skilled, and trained personnel and other resources are available.
7. Ensure that products and services satisfy customer requirements.

G. Laboratory staff

1. Ensure the quality of their work.
2. Operate in conformance with the requirements of the management system.

5.6.2. All laboratory employees have the authority and are encouraged to identify and report deviations from the management system or procedures for laboratory activities.

5.6.3. All laboratory employees contribute toward initiation of actions to minimize such deviations or provide input toward improvement to the system. These actions are monitored and reviewed by laboratory management.

5.6.4. The laboratory Technical Manager is responsible for monitoring the laboratory's management system and reporting its performance and any need for improvement to laboratory management.

Laboratory Management is responsible for the technical operations of the laboratory. Resources for training, laboratory methods, measurement traceability, and purchasing. Qualified laboratory personnel are assigned to serve in the absence of key managerial personnel, such as Laboratory Technical Manager to maintain unbroken continuation of operations. In addition, the laboratory has an active and executable contingency plan for the Continuity of Operations (COOP) in place with effectiveness drills enacted at least once each year.

5.7. Communication and Integrity of the Management System

5.7.1. Effective communication from management occurs through, but is not limited to, huddles, memos, newsletters, electronic presentations, emails, or verbally to laboratory personnel regarding the effectiveness of the management system and the importance of meeting statutory, and regulatory requirements.

5.7.2. The management system process and procedures as defined in this manual maintain the integrity of the management system when changes such as a change in the structure of the organization or management, or a change is a policy or procedure are made.

6. Resource Requirements

6.1. General

Personnel, facilities, equipment, systems and support services necessary for the management and performance of laboratory activities are evaluated and put in place to ensure defensible data and conformity to the requirements of ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories.

The sections following below address the facts affecting the correctness and reliability of the tests performed by a laboratory. These facts include contributions from:

A. Personnel (G7 Lab Gen 02, Personnel Training and Competency Management),

B. Facilities and environmental conditions (G7GEN06 Facilities and Environmental Conditions),

C. Equipment G7GEN08 Equipment

D. Metrological traceability (G7GEN09 Methods, Method Verification and Validation

E. Externally provided products and services

F. The procedures listed in each section address these facts.

6.2. Personnel

6.2.1. **Personnel**

All laboratory personnel that could influence laboratory activities act impartially, are competent, and perform their work according to the laboratory's management system. These positions include, but are not limited to: supervisors and managers, laboratory support staff, sample custodians, and administrative management staff.

6.2.2. **Competence Requirements**

Competence is based on education, experience, demonstrated skills, and training. Staff records contain the documentation of personnel education, qualification, experience, technical knowledge, skills, and training for the position held.

Skills of personnel are based upon demonstration of competence. Competency requirements for each function influencing the results of laboratory activities are documented in the laboratory's training documents. This demonstration is to be completed successfully before laboratory personnel generate data independently. The effectiveness of personnel training is documented in, but not limited to management reviews, internal audits, external assessments, proficiency testing, and performance evaluations.

6.2.3. **Personnel Competence**

Laboratory management ensures that laboratory personnel have the competence to perform their duties and to evaluate the significance of deviations.

Trainees undergo a training program in accordance with the laboratory's training documents. Trainees perform procedures when training and competency has been demonstrated. The documented demonstration of competence is an exercise that the trainee performs independent of supervision. The trainee is considered competent after the specified criteria have been successfully met. Please refer to *G7 GEN03* Personnel Training and Competency Management Procedure for further details on training and competency management.

6.2.4. **Communication of Duties, Responsibilities and Authorities**

Job duties, responsibilities and authorities for laboratory employees are documented in the management system procedures and operating instructions.

Position descriptions are maintained by G7 in media lab document control module electronically. The laboratory maintains active job descriptions for managerial, technical, and key support personnel involved in laboratory activities. Job descriptions are established based on current duties and technologies utilized.

The laboratory employees involved in laboratory activities have access to consensus standards, instrument manufacturers' manuals, and laboratory procedures for reference.

Effective communication from management occurs through, but not limited to, memos, newsletters, electronic presentations, emails, or verbally to laboratory personnel regarding the effectiveness of the management system.

6.2.5. Personnel Procedures

A. The procedure for determining competence requirements are defined in the laboratory's documents and G7 GEN03Personnel Training and Competency Management.

B. G7 maintains the hiring procedures for the Laboratory. G7GEN11 Hiring Procedure describes the selection procedures.

C. The individual and management are jointly responsible for the setting, the pursuit, and achievement of educational goals for professional advancement. The annual performance evaluation process can be used by the individual to discuss career advancement and training possibilities. By using this process, individuals can identify areas of study and request training oriented towards the attainment of their goals.

D. Training needs are identified in accordance with the analyst's background (e.g. Chemist, Microbiologist). In-house training is conducted per laboratory's training procedure. Present and anticipated tasks of the laboratory are addressed in the planning of special training modules.

The management system documents and test methods are included as training elements in the laboratory's training program addressed in the laboratory training procedure. This ensures that staff is familiar with quality documentation and implement the quality policies and procedures in their work.

E. The laboratory utilizes the skills and talent of both full-time employees and contract personnel. The requirements of the management system are administered equally to both categories. No differentiation is made between the two categories of workers. Supervision, training, and competence are documented for all technical and key support personnel.

Trainees do not perform regulatory work until competent as per the laboratory training program.

F. Personnel are authorized to perform specific laboratory activities according to section 6.2.6 and local documents.

G. Personnel competency is monitored through onsite reviews, reporting and worksheet write-ups, demonstration through documentation of the required instrument maintenance and function checks, results obtained on proficiency test samples, number of samples analyzed satisfactorily and QC samples within established criteria.

6.2.6. **Personnel Authorization**

The Laboratory Management authorizes personnel to perform specific laboratory activities, including but not limited to:

A. Development, modification, verification and validation of methods;

B. Analysis of results, including statements of conformity or opinions and interpretations;

C. Report, review and authorization of results;

Records of authorizations, demonstration of competence, education, training, and experience are maintained by the laboratory electronically in media lab competency module and dated. Training files are maintained and include these records.

Related Procedures/References

- G7 Lab Gen 02 Personnel Training and Competency Management

6.3. Facilities and Environmental Conditions

6.3.1. **Suitability of Facilities and Environmental Conditions**

The laboratory environmental conditions facilitate the correct performance of analytical testing. Examples of environmental influences are energy sources, lighting, biological sterility, dust, humidity, and temperature. The laboratory monitG7 critical environmental conditions to ensure that results and the quality of the measurement are not adversely affected or invalidated.

6.3.2. **Documentation of Requirements for Facilities and Environmental Conditions**

Test methods and environmental monitoring procedures used by the laboratory include instructions addressing applicable environmental conditions.

6.3.3. **Monitoring, Controlling and Recording Environmental Conditions**

Environmental conditions requiring monitoring include, but are not limited to:

A. room temperature and humidity,

B. biosafety hoods and laminar flow hoods,

C. metal contamination on benches and hoods in laboratories performing metal analysis,

D. microbiological contamination on bench surfaces and hoods in microbiology benches

Where environmental controls are needed, the environmental conditions are recorded.

Testing activities are stopped when the environmental conditions invalidate the test results or adversely affect quality control. Monitoring activities are conducted as part of the laboratory test or calibration methods.

6.3.4. **Measures to Control Facilities**

The following measures to control facilities are implemented, monitored and periodically reviewed:

A. Access and use of areas affecting laboratory activities

Laboratories are limited access areas. Access and use are controlled by, but is not limited to:

1. issuance of keycards for entrance,
2. escorting visitG7,
3. issuance of identification badges, and

B. Housekeeping

Laboratory areas are maintained clean and orderly to prevent contamination of samples and to facilitate the efficiency of laboratory operations.
The laboratory's Chemical Hygiene Plan(G7GEN06) and Hazardous Waste Management Plan (G7GEN13) include measures taken to ensure good housekeeping in the laboratory.

C. Cross-contamination

Separate areas are maintained for incompatible activities. Measures taken to prevent cross-contamination include, but are not limited to:

1. chemistry laboratories are separated from microbiology laboratories,
2. sample receiving, and storage are conducted in designated areas,
3. separate storage for standards and reference materials, and
4. media preparation and sterilization are separated from work areas.

Related Procedures/References

- G7GEN 10 Facilities and Environmental Conditions.
- G7GEN06 Chemical Hygiene Plan.
- G7GEN13 Hazardous Waste Management Plan.

6.3.5. **Work Performed Outside the Laboratory's Permanent Control**

The laboratory staff are not authorized to perform laboratory activities at sites outside of the laboratory's control, facility.

6.4. Equipment

6.4.1. Access to Laboratory Equipment

The laboratory has sample preparation, measurement and test equipment for the correct performance of the tests and calibrations. The laboratory also has ancillary equipment for processing samples and for processing data. Also see section 6.5 Metrological Traceability.
The laboratory purchases the equipment. Maintenance contracts are established as needed. In those cases where the laboratory leases equipment it has direct control concerning its use. Leased equipment is managed in the same manner as purchased equipment according to the management system requirements.

G7 maintains an equipment inventory of all laboratory equipment used to perform regulatory testing.

6.4.2. Equipment Outside the Laboratory's Permanent Control

If for any reason equipment leaves the direct control of the laboratory the laboratory ensures the equipment requirements are met before using the equipment.

6.4.3. Procedure for Handling, Transport, Storage, Use and Planned Maintenance of Equipment

The laboratory has procedures G7GEN08 Equipment for the safe handling, transport, storage, use and planned maintenance of equipment to ensure proper functioning and to prevent contamination or deterioration.

6.4.4. Verification of Equipment Prior to Being Placed or Returned into Service

The equipment performance is verified, and verification records are maintained. Equipment is to meet the laboratory's testing parameters and conform to standard specifications before being placed or returned into service.

Procedures for equipment verification are provided in G7GEN08 Equipment.

6.4.5. Equipment Accuracy/Uncertainty

Equipment and its software used for testing are to achieve the accuracy expected, measurement uncertainty required, and comply with specifications of the testing concerned.

The uncertainty contributions are addressed in G7GEN 20 Estimation of Uncertainty of Measurement.

6.4.6. Equipment Calibration

Measuring equipment is calibrated when the measurement accuracy or uncertainty affect the reported results and/or calibration of the equipment is required to establish metrological traceability of the reported result.

Procedures for equipment calibration are provided in procedure G7GEN08 Equipment

6.4.7. **Calibration Program**

The equipment calibration program is defined in G7GEN15 Measurement Traceability. These procedures are reviewed and revised according TO G7GEN 24 Document Control and Management.

6.4.8. **Calibration Status**

Equipment under the control of the laboratory and requiring calibration, or having a defined period of validity, is labeled or coded to indicate the calibration status or period of validity. Alternatively, equipment calibration status may be identified in an associated record to indicate the status of calibration.

6.4.9. **Out of Service**

Equipment that has been subjected to overloading or mishandling, gives suspect results, or has been shown to be defective or outside specified limits, is taken out of service. It is isolated to prevent its use or clearly labeled or marked as being "Out of Service" to prevent its use until it has been repaired and shown by calibration or test to perform correctly.

6.4.10. **Calibration Confirmation**

Intermediate calibration confirmation checks are performed to maintain confidence in the calibration status of the equipment.

Metrological confirmation for reference standards and reference materials included in the calibration program is conducted according to a schedule addressed in the procedure in G7GEN08 Equipment. The confirmation is conducted to maintain confidence in the calibration status of reference standards and reference materials.

6.4.11. **Correction Factor**

Where calibrations give rise to a set of correction factor, these factors are updated and implemented to meet specified requirements.

6.4.12. **Safeguards**

Test and calibration equipment, including both hardware and software, are safeguarded from adjustments that would invalidate the test or calibration results. Safeguards are provided using access control to the laboratory.

6.4.13. **Equipment Records**

Records are maintained of each item of equipment and its software that can influence laboratory activities.

The records include at least the following items, where applicable:

A. identity of equipment, including its software and firmware version.

B. manufacturer's name, type identification, and serial number or other unique identification;

C. evidence of verification that equipment conforms with specified requirements;

D. current location of the equipment;

E. calibration dates, results and copies of reports and certificates of calibrations, adjustments, acceptance criteria, and the due date of next calibration or the calibration interval;

F. documentation of references materials, results, acceptance criteria, relevant dates and the period of validity;

G. maintenance plan and maintenance carried out to date, where relevant to the performance of the equipment; and

H. details of any damage, malfunction, modification or repair to the equipment.

6.5. Metrological Traceability

6.5.1. **Establishing and maintaining metrological traceability**

The program for calibration of equipment demands that calibrations and measurements made by the laboratory are traceable to the International System of Units.

Calibration laboratories providing calibration standards to G7 are to provide evidence of measurement traceability of its own measurement standards and measuring instrument to the SI. This is done by means of an unbroken chain of calibration or comparisons linking them to primary standards of the SI units of measurement. Such primary standards are those used by national measurement standards.

Calibration certificates issued by calibration laboratories are to include the measurement results, including the measurement uncertainty and a statement of conformance with an identified metrological specification.

6.5.2. **Ensuring measurement results are traceable**

A. Calibration laboratories providing services or calibration material to G7 are to provide documentation demonstrating measurement capability and competence to perform the calibration material requested.

B. A reference material is a homogenous and well characterized substance used for standardization of equipment used in the testing process. Reference materials are traceable to national or international standard reference materials (SRMs), such as National Institute of Standards and Technology (NIST), or certified reference materials (CRMs) from competent suppliers of reference materials.

   The measurement integrity of internal reference materials generated by the laboratory is evaluated against either standard reference materials or certified reference materials from an independent source when it is technically and economically possible.

C. The measurement traceability to SI units may be achieved by measurements related to national measurement standards. National measurement standards may be used as primary standards that are primary realizations of the SI units or agreed representations of SI units. National measurement standards based on fundamental physical constants, or standards calibrated by another national metrological institute may be use as primary standards.

6.5.3. Non-traceability of reference standards to SI units

Calibrations that cannot provide strict measurement traceability to SI units are conducted such that the calibration results can provide confidence in the measurements made in the course of the analysis.

6.6. Externally Provided Products and Services

6.6.1. Suitability of Externally Provided Products and Services

The laboratory ensures that only suitable externally provided products and services that affect laboratory activities are used when they are intended for incorporation into the laboratory's activities and/or used to support the operation of the laboratory.

G7 labs do not subcontract routine analyses within their scope of accreditation.

Collaborative activities conducted with external laboratories, such as universities, are research in nature and do not involve the routine analysis of samples.

Subcontracting Laboratories

Based on workload fluctuations and resource needs, G7 may request samples assigned to other CCC licensed laboratories for analysis. Samples are administratively transferred after arrangements are made to ensure that the receiving laboratory has the capacity and capability to complete it in a timely manner.

Notification of Customer

The performing laboratory on the certificate of analysis serves as a notice of the transfer.

Laboratory Responsibility

The laboratory to which the sample has been transferred assumes responsibility to the collector for the work.

Related Procedures/References

- G7GEN16 Chain of Custody – Sample Handling

6.6.2. Purchasing services and supplies

A. G7GEN17 Purchasing and Receipt provides policies and instructions for procurement of supplies, materials, equipment, and services that affect the quality of tests. It documents the procedures for purchase, reception, and storage of supplies, materials, and equipment relevant to tests.

B. Purchasing documents for items affecting the quality of laboratory output describe the services or supplies ordered. These purchasing documents are reviewed and approved for technical content prior to submission.

Records of supplier evaluations are maintained by purchasers of laboratories equipment, services, and supplies.

C. Records of unsatisfactory materials and supplies and their disposition are maintained. These records establish trends in vendor performance and ensure that continuing quality material is accepted. A vendor is considered unacceptable and is not used when the quality of product or service does not meet expectations or specifications.

6.6.3. Communicating requirements to external providers

Critical specifications and requirements are clearly described on the purchasing requests and are communicated to external providers by the Purchasing Agent. These criteria include:

A. The products and services to be provided;

B. The acceptance criteria; and

C. Competence, including any required qualification of personnel

G7 does not subcontract routine analyses within their scope of accreditation.

7.0 Process Requirements

7.1. Review of Requests, Tenders, and Contracts

7.1.1. Procedure

G7 develops and issues the Annual Fiscal Year (FY) Workplan for the lab. The workplan is based on several factors such as the budget, the number of analysts and amount of resources, the compliance program accomplishment goals.

Requests not covered by compliance programs or assignments are reviewed prior to receipt of samples by the laboratory's management when possible.

The results of this process are discussed and documented as part of the laboratory's annual management review.

Subcontracting Laboratories

The customer requesting collaborative testing by laboratories outside of G7 is responsible for the work done by such labs. G7 is responsible for such work under these circumstances.

Based on workload fluctuations and resource needs, G7 may send samples to other CCC Licensed laboratories within MA for analysis. Samples are administratively transferred after arrangements are made to ensure that the receiving laboratory has the capacity and capability to complete it in a timely manner.

The samples will be transferred after notifying the customer and CCC and the results will be reviewed in detail for conformance and data quality. The result will be reproduced in whole.

7.1.3. **Statements of Conformity**

When the customer requests a statement of conformity to a specification or standard for the test, the specification or standard and the decision rule are clearly defined in the compliance programs or standard. Otherwise, the laboratory communicates the decision rule selected to the customer and obtains their agreement.

7.1.4. **Differences and Deviations**

The lab reviews the annual workplan to ensure that laboratory has the capability and resources to provide the requested services. Any differences between the workplan and the laboratory capability are resolved prior to commencing work.

7.1.5. **Communicating with the customer**

Requests for deviations from work assignments or compliance programs are recorded. The lab interacts with the customer to determine whether the requested changes are acceptable by CCC regulations.; local regulations and do not impact the integrity of the laboratory or the validity of the results. Records of contract changes are maintained.

7.1.6. **Amendments to Contracts**

If a contract needs to be amended after work has commenced, the same contract review process is repeated, and any amendments are communicated to all affected personnel named in the contract.

7.1.7. Customer Service

The laboratory maintains communications regarding deviations from contract work.

The opportunity for the customer to witness laboratory activity is given upon request on a case by case basis after management review, providing the laboratory can maintain confidentiality to other customers during such cases.

7.1.8. Records of Review

G7 maintains a record of workplan reviews, changes, and change requests. Records are also maintained of discussions regarding ad hoc assignments.

7.2. Selection, Verification and Validation of Methods

7.2.1. Selection and Verification of Methods

Specific requirements for the Verification and Validation of methods process are outlined in G7GEN09 Method Validation and Verification.

7.2.1.1. The scope of test technologies and associated method source routinely used are identified in the laboratory's accreditation program documentation.

7.2.1.2. Laboratory methods and supporting documents are controlled according to Section 8.3 Control of Management System Documents and are readily available.

7.2.1.3. Laboratory methods are selected to meet the CCC, MDPH requirement, ISO\IEC 17025:2017 compliance and Laboratory's interest. Only the Standard methods Listed Appendix A Table 01 on Quality Assurance Program Plan for Analytical Testing laboratories Performing analysis of Finished Marijuana products and marijuana infused products in Massachusetts (QAPP) will be used.

Standard methods are those published by international, regional or national standards-writing bodies; by reputable technical organizations; in legal references; and FDA published methods. These methods include those in the United States Pharmacopeia, National Formulary, Homeopathic Pharmacopeia of the United States, Official Methods of Analysis of AOAC INTERNATIONAL or any supplement of any of them, American Public Health Association (APHA) Compendium of Methods for the Microbiological

Examination of Foods, FDA compliance programs, the Pesticide Analytical Manual (PAM), the Food Additives Analytical Manual, the Food Chemicals Codex, FDA
Bacteriological Analytical Manual (BAM), FDA Macroanalytical Procedures Manual (MPM), and ORA Laboratory Information Bulletins (LIBs) that are included in compliance programs and special assignments. Standard methods are preferred for use and are verified for use in the laboratory. A standard method may be supplemented with additional details in the form of a laboratory procedure to ensure consistent application. Those methods specified by the manufacturer of the equipment are considered as standard methods. Standard methods are verified according to the procedure, using QAPP 9.0 Validation of methods.

7.2.1.4 Any standard method not listed on Appendix A, Table 01, Method Reference Table of QAPP will be validated using QAPP 9.0 Validation of methods. Records of the verification are retained by the lab. If the method is revised by the issuing body, verifications are repeated to the extent necessary.

7.2.1.6. Non-standard methods are those methods not taken from authoritative, validated sources. A nonstandard method has not undergone validation, such as a collaborative study or process to evaluate the method's performance capabilities.

Non-standard methods are not used and out of the scope for this manual.

7.2.1.7. Deviations from test methods are not authorized and allowed.

7.2.2. **Validation of Methods**

7.2.2.1. The laboratory validates standard methods, laboratory developed methods, and modified standard methods including use outside the intended scope or otherwise modified. Validation is conducted to confirm that the methods are fit for the intended use, relevant to the needs, and consistent with specified requirements. The validation is as extensive as is necessary to meet the needs of the given application or field of application.

7.2.2.2. When changes are made to a validated method, the influence of such changes shall be determined and where they are found to affect the original validation, a new method validation shall be performed as per QAPP method validation guideline.

7.2.2.3. The validation process addresses the needs of the given application or field of application. The laboratory analyst records the results obtained according to

the procedure, G7GEN09 Method Verification and Validation. The validation results include a statement as to whether the method is fit for the intended use. The intended use of the method. The attributes and data quality objectives include but are not limited to:

- accuracy,
- precision,
- specificity,
- detection limit,
- limit of quantitation,
- linearity,
- range, and
- ruggedness or robustness.

If all the data quality objectives are met as indicated by the data collected, the method is considered as validated.

7.2.2.4. The following records are maintained for each validation:

- Validation Plan
- the validation procedure used;
- specification of the requirements
- determination of the performance characteristics of the method;
- results obtained;
- a statement on the validity of the method, detailing its fitness for the intended use.

7.3 Sampling

7.3.1 Sample receipt and sample custody

A. Laboratory custody of samples begins when samples are received by the laboratory.

B. The Laboratory agent shall sign and record the date and time of sample receipt on the Chain of custody (COC). The COC is to be maintained electronically if possible. The validated time of sample receipt (VTSR) is the time the samples are received at the laboratory from the RMD personnel or representative, or private courier; it is not the time the samples are opened or logged in at the laboratory.

C. For receipt of samples outside normal hours of operation the laboratory is to be notified at least 2 days in advance to arrange for the receipt of the sample during non-standard hours.

D. Sample receipt temperature is be recorded in COC electronically while receiving sample. A record of samples will be maintained for samples receipt outside of acceptance criteria.
E. Sample storage refrigerator are maintained at ≤ 6.0°C and sample storage freezers at < -10°C.

7.3.2 Communicating sample receipt issues

A. Loss of sample volume, samples with temperatures > 6.0°C; improper chemical preservation of samples; or documentation discrepancies, shall be communicated to the customer or its designated consultant was soon as practical (via phone log or e-mail based on project personnel requirements) so that proper corrective action can be taken; documentation of this communication is to be preserved with the project records.
B. If the sample receipt criteria are not met, the samples are rejected and the customer will be informed immediately of the need to resample.

C. All samples placed "on hold" because of sample receipt issues is stored in accordance with sample temperature preservation requirements (e.g., in sample refrigeratG7 or freezers) until the issues have been resolved.

D. When an issue requiring notification is discovered after normal business hours (i.e., between 0800 and 1700 Eastern Standard Time, Monday through Friday), the laboratory will provide prompt verbal, text, or e-mail notification to the customer or its designee. The laboratory will maintain documentation detailing any sample receipt issues and the resolution directed by the customer or its designee in the project files.

7.3.3 Sample Homogenization

Samples received by the laboratory are to be homogenized in full before subsampling for analysis or subcontracting takes place. To demonstrate the effectiveness of homogenization and subsampling homogenization duplicate and a homogenization blank are to be assigned separately for flower and extract sample batches at defined intervals. The homogenization blank shall be randomly placed in the batch as to check all the homogenization equipment for possible carryover rather than using a dedicated homogenization apparatus for the blank each time it is requested.

7.3.3 Holding Times

A. Samples with holding times of < 48 hours are to have documentation of the time they were set up for the short hold-time analysis. For all sample shipments, the primary laboratory contact, for the dispensary shipping the samples, is to notify all applicable laboratory personnel of the expected sample delivery so that laboratory personnel can prepare to receive the sample.

B. The laboratory is to adhere to the required holding times for the initial sample preparation/analyses. If samples are received with a significant portion of the holding time expired and the laboratory is concerned about meeting holding time requirements, RMD, or its designee is to be notified immediately upon sample receipt. If subsequent analysis/extraction becomes necessary due to method or technical requirements or failing QC, the laboratory is to make every effort to analyze these dilutions/re-extractions /reanalyses within the method holding time specified in QAPP Appendix A.

7.4. Handling of Test or Calibration Items

The laboratory procedure G7GEN16 Chain of Custody /Sample handling describes the receipt, processing, protection, storage, retention, and disposal of samples. This procedure also provides the details for handling and protecting test items from deterioration, loss or damage during storage and processing. The laboratory has arrangements for storage and security that protect the condition and integrity of samples. Sample security arrangements apply both in the laboratory and in the custodial areas.

7.4.1. The laboratory has a system for uniquely identifying samples. The sample number is used to track its progress from the time the sample is collected until the analysis is completed and the sample is disposed. The sample number is also used to provide traceability between the sample and the data. The numbering system also provides traceability during transfer of samples within the laboratory. This sample number is unique and different from customer assigned Batch ID or sample ID.

7.4.2. When samples received do not meet established acceptance criteria, and chain of custody criteria, these deviations are recorded. The customer is consulted prior to commencement of analysis for further instructions.

Sample abnormalities or departures are also noted on the analytical worksheet.

7.4.3. When samples and calibration items have specific environmental conditions, those conditions are maintained, monitored and recorded. Monitoring records are collected according to established procedures. These activities are conducted according to the policies stated in Section 6.3 Facilities and Environmental Conditions.

7.5. Technical Records

7.5.1. Technical records for all activities that contribute to data reporting, depending on the type of analysis, include the original observations, derived data, calculations,

standard preparation, instrument printouts, and results. These records contain the date each activity is completed and the identity of all persons who perform each activity throughout the process, including those who review the data and results.

Observations, data, and calculations are recorded at the time they are made and are identifiable to the activity performed.

The records of each test contain sufficient information to repeat the test under conditions as close as possible to the original. This information includes environmental conditions that affect the test and factG7 that affect the measurement results and its associated measurement uncertainty.

Staff records, equipment calibration, and verification reports are retained in accordance with the laboratory's control of records procedure. These records contain sufficient information to establish an audit trail. The requirements for an audit trail in laboratory records are outlined in G7GEN19 Record and Data Management.

Data is reported electronically and/or scanned and uploaded into laboratory network drive or media lab which is a web-based programs.

The collection report identifies the personnel responsible for sampling. Also, includes the identity of the personnel responsible for performance of each test and for checking the results.

7.5.2. G7 ensure changes to technical records can be tracked to the previous version or to original observations. Both the original and amended data and files are retained, including the date the record was changed, an indication of what was changed and the person responsible for the alteration.

7.6. Evaluation of Measurement Uncertainty

7.6.1. Uncertainty Components

When estimating the uncertainty of measurement, all important uncertainty components are recorded in the uncertainty records for each determination and test technology.

7.6.2. Procedure for Calibration Activities

G7 does not perform calibration activities. At such time that calibration activities are performed, the laboratory is to address the requirements of ISO/IEC 17025:2017, QAPP AND CCC.

7.6.3. Procedure for Testing Activities

The laboratory has a procedure G7GEN20 Estimation of Uncertainty of Measurement, to estimate the uncertainty of measurement for testing activities.

The application of details in cases where the nature of the test method may preclude rigorous, metrologically and statistically valid, calculation of uncertainty of measurement is addressed in the procedure.

An attempt is made to identify all the components of uncertainty and make a reasonable estimation of the measurement uncertainty. This estimation is based on knowledge, experience, and validation data of the performance of the method and on the measurement scope. If needed as a part of the laboratory data, the uncertainty estimation is reported according to the procedure.

7.7. Ensuring the Validity of Results

7.7.1. Quality Control Procedures

The laboratory has quality control procedures to validate the results of tests undertaken. The monitoring data is recorded in such a way that trends may be detected, for example, statistical process control charts. Monitoring activities are planned and evaluated. Monitoring techniques may include, but are not limited to, the following:

A. Scheduled use of certified reference materials or quality control materials

B. Levey Jennings chart of Quality control (QC) data to recognize a trend or pattern.

C. Use of alternative instrumentation that has been calibrated to provide traceable results;

D. Functional check(s) of measuring and testing equipment;

E. Use of check or working standards with control charts;

F. Intermediate checks on measuring equipment;

G. Replicate tests using the same or different methods;

H. Retesting of reference materials and retained customer samples;

I. Correlation of results from tests conducted for different characteristics of a sample;

J. Review of reported results;

K. Scheduled participation in interlaboratory comparison or proficiency testing and calibration programs

L. Testing of blind samples.

7.7.2. G7 will participate in proficiency testing programs as required by ISO/IEC17025:2017, QAPP, CCC and MDPH.

A. One successful PT for each method and matrix included in Massachusetts regulation, if available, prior to reporting samples for compliance and one additional PT for each method and matrix combination annually.

B. PT samples are to be treated as and analyzed with typical samples in the normal production process where possible, including the same sample log-in procedures analysts, maintenance triggers, preparation, calibration, QC and acceptance criteria, sequence of analytical steps, number of replicates, data analysis, manual integrations, identification, and confirmation procedures.

C. Whenever possible, the PT sample is to be prepared and analyzed with other samples to avoid having a QC set unique to the PT. The PT cannot be chosen for spiking or duplication within a batch consistently, but if there are no other samples in-house for the analysis, the required QC for a batch is to be performed.

D. Prior to the closing date of a study, G7 personnel are not to:
   I. Subcontract analysis of a PT sample to another laboratory that is to be reported for accreditation purposes.
   II. Knowingly receive and analyze a PT for another laboratory that is to be reported.
   III. Communicate with an individual from another laboratory concerning the analysis of the PT sample.
   IV. Attempt to find out the assigned value of a PT from the PT Provider.
   V. Perform maintenance or calibration on an instrument when the data quality samples or instrument performance data would not normally necessitate such actions.
   VI. Provide additional verification, validation, or review.
   VII. Analyze the sample in multiple batches, on multiple instruments, or by multiple analysts.

7.7.3. The laboratory has defined the criteria for quality control data and performs analysis by such means as control charting. When data is found to be outside the established criteria, Corrective action is taken in accordance with laboratory G7GEN04 Quality Control policy

7.8. Reporting Results

7.8.1. General Requirements

Results are reported on analytical worksheets and in appropriate Laboratory information management system (LIMS).

7.8.1.1. Laboratory results are reviewed and authorized for release by TM, or designee. Reports are reviewed for accuracy, clarity and objectivity.

7.8.1.2. Laboratory reports, depending on the type of analysis, include the original observations, derived data, calculations, standard preparation, instrument printouts, and results. These reports are retained until closed in and/or LIS and final review is performed. An electronic test report is in and/or LIS. Staff records, equipment calibration, and verification reports are retained in accordance with the laboratory's control of records procedure.

The records contain sufficient information to establish an audit trail.

The collection report identifies the personnel responsible for sampling. This also includes the identity of the personnel responsible for performance of each test and for checking the results.

7.8.1.3. Test reporting is addressed in the procedure found in G7GEN22 Reporting Laboratory Data. This procedure gives the details for reporting data using consistent reporting formats for laboratory worksheets.

7.8.2. Common Requirements for Reports (test, calibration or sampling)

7.8.2.1. Format

The format for laboratory worksheets is designed to accommodate the type of test conducted to minimize the possibility of misunderstanding or misuse. The worksheet format is described in G7GEN 22 Reporting Laboratory Data.

Subcontracting laboratory is to report the results in compliance with the requirements of CCC, ISO 17025 and relevant state and local regulation.

7.8.2.2. Data Provided by Customer

Analysts describe the sample as received, including any information provided by the customer, on the sample worksheet. When information supplied by the customer can affect the validity of the results, a disclaimer statement is included on the worksheet.

7.8.3. Specific Requirements for Test Reports

7.8.3.1. Test Report Requirements

The following information is included in test reports for the interpretation of the test results:

A. Information on test conditions, such as environmental conditions;

B. Where relevant, a statement of conformance or non-conformance with specifications;

C. The measurement uncertainty presented in the same unit as the measurand, or in a term relative to the measurand when:

D. It is relevant to the validity of the test results;

E. A customer requires it, or;

F. The measurement uncertainty affects conformity to a specification limit;

G. Additional information that may be requested by methods, customers or groups of customers provided the information requested are within scope of the laboratory and allowed by CCC and ISO 17025:2017

7.8.4. Specific Requirements for Calibration Certificates

G7 do not issue calibration certificates. In-house calibrations are documented by a report, or sticker, or other suitable method.

7.8.5. Reporting Sampling – specific requirements

In addition to the instructions listed in Sections 7.8.1 General Requirements and 7.8.3. Specific Requirements, sampling information and conditions are posted to the laboratory for review on sample collection record.

7.8.6. Reporting Statements of Conformity

7.8.6.1. Decision Rules

Statements of conformity to a specification or standard require the use of a decision rule to take into account the uncertainty associated with method. Most decision rules used by G7 are documented in the compliance programs or standard methods. When the decision rule is not provided, the laboratory must document the decision rule and account for the level of risk associated with the decision rule used.

7.8.6.2. **Reporting Statements of Conformity**

Statements of conformity reported on worksheets clearly identify:

A. The results the statement applies to;

B. Which specifications or standards were met, or not met;

C. The decision rule applied (unless it is defined in the specification or standard.)

7.8.7. **Reporting Opinions and Interpretations**

Laboratory management expresses its opinion and interpretation of the compliance or non-compliance of the results through the laboratory classification assigned to each sample. This laboratory classification is recorded in LIMS and may be recorded in Media Lab.

Records are maintained of conversations expressing opinions and interpretations about a sample with the customer.

7.8.8. **Amendments to Reports**

Material amendments to analytical findings after issue are made only in the form of an additional document. They are flagged "Additional Analyses" in accordance with procedure G7GEN22 Reporting Laboratory Data. Amendments are to meet the same reporting criteria. Any changed information is clearly identified and where appropriate, the reason for the change is included in the report.

Related Procedures/References

- G7GEN 22 Reporting Laboratory Results.

7.9. Complaints

7.9.1. G7 has a complaint process describing the handling of complaints received from any party. See G7GEN02 Complaints and Feedback. In addition to the resolution of these complaints, improvement in the area of concern is addressed and implemented in most cases.

7.9.2. The process for handling complaints is documented in G7GEN02 complaint feedback. The laboratory confirms whether the complaint relates to laboratory activities that it is responsible for and, if so, then addresses it.

7.9.3. The process for handling complaints includes the following:

A. Description of the process for receiving, validating, investigating the complaint, and deciding appropriate actions to respond to it;

B. Tracking and recording complaints, including actions taken to resolve them;

C. Ensuring appropriate action is taken.

7.9.4. The laboratory receiving the complaint will gather all information required to investigate, validate, address, and review the complaint and its outcome.

7.9.5. When possible, the laboratory will acknowledge receipt of the complaint, provide progress reports with the outcome of resolution, and formal notice of completion to the complainant.

7.9.6. Communications to the complainant is addressed in procedure G7GEN02 complaint feedback.

7.10. Nonconforming Work

7.10.1. The G7 laboratories have a control of non-conforming work procedure that is implemented when any aspect of their activities, or the results of this work, does not conform to requirements of the management system, testing methods, or the requests of the customer. This procedure addresses the following elements:

A. responsibilities and authorities for the management of identified nonconforming work to include taking actions such as the halting of work and/or the withholding of test reports based upon risk levels established by the laboratory

B. actions are based upon the risk levels established by the laboratory;

C. an evaluation of the significance of non-conforming work including an impact analysis on previous results and, if necessary, recall of work with notification to the customer

D. remedial action taken, together with any decision about the acceptability of the non-conforming work

1. The customer is notified if investigations show that nonconformances have affected work performed for or data reported to the customer. This notification is documented.

E. responsibility for authorizing the resumption of work.

7.10.2. Records of nonconforming work and actions taken are maintained in QMiS.

7.10.3. If the non-conforming work could recur, or there are other significant problems identified, the corrective action procedures in G7GEN07 Corrective Action are promptly followed.

Related Procedures/References

- G7GEN05 Control of Nonconformance

7.11. Control of Data and Information Management

G7 Labs have access to the data and information needed to perform laboratory activities through various electronic records management systems including Media lab, LIMS, QA, and records maintained according to G7GEN19 Record and Data Management.

7.11.1. G7 information management system applications used for the acquisition, processing, recording, reporting, storage or retrieval of data are validated prior to introduction by G7.

If computer software is developed by the user, its development is authorized, documented in detail and algorithms are validated prior to implementation.

Changes to laboratory software configuration or modifications to commercial off-the-shelf software are also authorized, documented and validated prior to use.

7.11.2. G7 laboratories have processes for the protection of data to include, but not limited to data integrity, data confidentiality during entry, collection, storage, transmission and processing. The processes also ensure safeguards are in place to prevent unauthorized access to or amendment of records.

Information management system failures are recorded, and appropriate immediate and corrective actions are taken.

7.11.3. Laboratory information systems managed and maintained off site meet all applicable requirements of ISO 17025:2017.

7.11.4. Instructions, manuals and reference data relevant to the laboratory information systems are readily available to personnel through the document control process (see section 8.3).

7.11.5. Calculations and data transfers are reviewed before the data is reported. All changes are identified and verified where they occur. This process is detailed in the procedure for laboratory quality control identified in Volume I, Section 7.7 Ensuring the Validity of Results.

8.0 Management System Requirements

8.1. Options

8.1.1. General

G7 laboratories have established, documented, implemented, and maintained a management system capable of supporting and demonstrating the consistent achievement of the requirements of ISO/IEC 17025:2017 to assure the quality of laboratory results. In addition to meeting the requirements outlined in sections 4 to 7 of this document the Standard requires laboratories implement a management system in accordance one of the two following options.

8.1.2. Option A

G7 follows the requirements for option A, outlined in the following sections 8.2 to 8.9.

8.1.3. Option B

Option B of ISO/IEC 17025:2017 addresses minimal requirements for laboratories with a separate management system either certified to or at least structured to the requirements of ISO 9001. G7 does not fall within this category.

8.2. Management System Documentation (Option A)

8.2.1. Management System Policy

A. Good Professional Practice and the Quality of Testing

The laboratory management and personnel are committed to performing quality activities to assure integrity, accuracy, precision, reliability and timeliness of the data.

B. Standard of Service

The laboratory's standard of service for the testing program is defined by the ISO/IEC 17025:2017 requirements, CCC regulatory needs included as part of the laboratory methods, and the following:

1. Established and maintained documented procedures for laboratory operation based upon reference methods for testing provided by MDPH on Appendix A of QAPP or validated as per QAPP section 9. In some cases, testing and procedures as established by the instrument manufacturer are used.
2. Sample handling and management procedures to maintain integrity of both the samples and the documentation to support the analytical data.

STORAGE OF MARIJUANA

Pursuant to 935 CMR 500.105(11)(a)-(e), G7 Lab LLC ("G7 Lab") will provide adequate lighting, ventilation, temperature, humidity, space and equipment, in accordance with applicable provisions of 935 CMR 500.105 and 500.110. G7 Lab will have separate storage areas for marijuana that is outdated, damaged, deteriorated, mislabeled, or contaminated, or whose containers or packaging have been opened or breached, unless such products are destroyed. G7 Lab storage areas will be kept in a clean and orderly condition, free from infestations by insects, rodents, birds and any other type of pest. The G7 Lab storage areas will be maintained in accordance with the security requirements of 935 CMR 500.110. Given the fact that G7 will be processing relatively small samples through its testing equipment, the total volume of stored marijuana and marijuana infused products is likely to be significantly less than those at other types of licensed marijuana establishments.

G7 Lab storage policy dictates that products may only be stored in areas under video surveillance. Only authorized marijuana establishment agents have access to product storage areas, product storage keys, and/or access cards. Storage rooms must remain locked and protected from entry, at all times, except for the actual time required to remove or replace marijuana. Marijuana establishment agents in product rooms without authorization, or good reason, will be terminated.

Marijuana waste will be tracked, handled, stored, and disposed of in compliance with 935 CMR 500.105 (3), (8), and (12). G7 Lab will contract with other licensed marijuana establishments, as necessary, to dispose of marijuana waste and comply with all regulatory requirements.

Pursuant to 935 CMR 500.105(13)(d), G7 Lab will transport, or contract with a Third-Party Transporter to transport, marijuana products in a secure, locked storage compartment that is a part of the vehicle transporting the marijuana products and the storage compartment will be sufficiently secure that it cannot be easily removed. All vehicles and transportation equipment used in the transportation of cannabis products or edibles requiring temperature control for safety will be designed, maintained, and equipped as necessary to provide adequate temperature control to prevent the cannabis products or edibles from becoming unsafe during transportation, in accordance with 935 CMR 500.105(13)(a).

TRANSPORTATION OF MARIJUANA

These policies and procedures will be implemented and enforced by G7 Lab LLC ("G7 Lab" or "the Company") for any and all transportation of marijuana and MIPs (collectively, "Marijuana Products") to other licensed marijuana establishments ("LMEs") within the borders of the Commonwealth of Massachusetts, which is the only permissible transportation that the Company may engage in under its license and pursuant to 935 CMR 500.105(13)(a)(2). The following policies and procedures address each regulatory requirement and will be periodically reviewed and updated for internal process efficiency purposes and to ensure continued regulatory compliance. If G7 Lab elects to contract with a licensed Marijuana Transporter, pursuant to 935 CMR 500.105(13)(a) (3), rather than procuring its own transportation vehicle, the Company will ensure that that licensed Marijuana Establishment has a regulatorily-compliant vehicle and shall check to see that its Marijuana Transporter license is valid and in good standing at the time of entering into the contractual relationship. Finally, if any products are delivered by a duly-licensed cultivator or manufacturer that produces the products for sale, G7 Lab shall similarly ensure that that licensed Marijuana Establishment (i.e. any producing entity that isn't a retail establishment and which sells at wholesale to duly-licensed retail marijuana establishments) has a regulatorily-compliant vehicle and shall check to see that its license is valid and in good standing at the time of entering into the contractual relationship.

All marijuana product deliveries will occur via G7 Lab's secure sally port, as detailed in the security plan.

MANDATORY REQUIREMENTS FOR ALL TRANSPORTATION OF ANY MARIJUANA PRODUCTS AND MIPs

- Pursuant to 935 CMR 500.105(13)(a)(4), the Company shall require all Marijuana Products to be linked and logged in a Commission-approved seed-to-sale tracking software, which may also be identified by a unique radio-frequency identification ("RFID") tag. All seeds and clones that the Company transports will be tracked and labeled in a form to be designated by the Commission and shall be considered Marijuana Products for purposes of this document.
- An undeliverable Marijuana Product, or one that is refused by another LME, shall be promptly transported back to the Company's facility in order to comply with 935 CMR 500.105(13)(a) (5).
- Pursuant to 935 CMR 500.105(13)(a)(6), any and all vehicles that the Company utilizes for the transportation of Marijuana Products shall be staffed by two Marijuana Establishment Agents holding a valid card from the Commission under the Company's licenses. One of the two Marijuana Establishment Agents shall remain with the vehicle at any and all times that the vehicle contains any Marijuana Products whatsoever.
- As a prerequisite for undertaking a transportation trip from the Company's facility to any other LME for the delivery of Marijuana Products, a Marijuana Establishment Agent shall, on video camera recording, weigh all Marijuana Products, add each such product to an inventory log, and account for the inclusion of that particular product in the vehicle's transportation manifest, in accordance with 935 CMR 500.105(13)(a)(7). All transported marijuana products will be tracked in the Commission's seed-to-sale tracking software (METRC), in compliance with 935 CMR 500.105(9).
- The Company shall request that any recipient LME indicate that it has procedures in place to ensure compliance with the re-weighing provisions of 935 CMR 500.105(13)(a)(8), to be conducted within 8 hours of the delivery.
- The Company shall make a video recording for the receipt of any and all Marijuana Product from

another LME of a Marijuana Establishment Agent re-weighing, re-inventorying, and accounting for all Marijuana Products transported to its facility within 8 hours of its delivery. 935 CMR 500.105(13)(13)(a)(8).

- Each video recording prior to transporting or within 8 hours of the acceptance of delivery, shall clearly show a Marijuana Establishment Agent weighing the Marijuana Products, show the weight of said product, and its entry into the Company's transportation inventory manifest. 935 CMR 500.105(13)(13)(a)(9).
- Pursuant to 935 CMR 500.105(13)(a)(10) and the applicable provisions of 935 CMR 500.105(6)(a)(1), all Marijuana Products that the Company transports shall be packaged in sealed, labeled, and tamper or child-resistant packaging prior to and during transportation.
- In the event of an emergency stop during the transportation of Marijuana Products, the Marijuana Establishments in the transportation vehicle shall create and maintain a log that describes the reason for the stop, the stop's duration, the vehicle's location while stopped, and the activities of the Marijuana Establishment Agent that leaves the vehicle while the other Marijuana Establishment Agent remains with the vehicle. 935 CMR 500.105(13)(a)(11).
- The Company's Marijuana Establishment Agents that transport Marijuana Products shall ensure that all transportation times and routes are randomized in order to comply with 935 CMR 500.105(13)(a)(12) and to make the vehicle a more difficult target for any would-be thieves.
- Pursuant to 935 CMR 500.105(13)(a)(13) and in recognition of the current federal prohibition of cannabis and status as a Schedule I controlled substance pursuant to the Controlled Substances Act, 21 U.S.C. ch. 13 § 801 et seq., all Marijuana Establishment Agents transporting Marijuana Products shall ensure that the vehicle and its transportation routes remain completely intrastate and shall not, for any reason, cross the border of any neighboring state.
- If the vehicle is transporting Marijuana Products that require temperature control, for example, but not limited to, edibles, the vehicle and its transportation equipment shall be designed, rated, maintained, and equipped as necessary to provide adequate temperature control to prevent and minimize the premature deterioration or degradation of the Marijuana Product to an unsafe state. 935 CMR 500.105(13)(a)(14) and 21 CFR 1.908(c).

MANDATORY INCIDENT REPORTING REQUIREMENTS

- The Company's Marijuana Establishment Agents engaged in the transportation of Marijuana Products shall have an affirmative duty to document and promptly report any unusual discrepancy in weight or inventory to the Commission not more than 24 hours after the discovery of such a discrepancy. The Company shall reassign Marijuana Establishment Agents to non-transportation related duties if they fail to adhere to the reporting requirement of 935 CMR 500.105(13)(b)(1).
- As required by 935 CMR 500.105(13)(b)(2), Marijuana Establishment Agents shall, within 24 hours of their occurrence, report any vehicle accidents, diversion of Marijuana Products, losses, or other reportable incidents that occur during transport, pursuant to 935 CMR 500.105(13)(b) (2).

VEHICLE REQUIREMENTS

Every vehicle that the Company utilizes for the transportation of Marijuana Products shall comply with the following regulatory requirements:

- The Company shall own or lease any vehicle(s) it utilizes for the transportation of Marijuana Products to other LMEs. 935 CMR 500.105(13)(c)(1)(a).
- The transportation vehicle shall be duly registered, inspected, and insured in the Commonwealth of Massachusetts, and the documentation demonstrating such registrations, valid inspection, and current insurance policy shall be a record that the Company shall maintain and furnish to the Commission upon request. 935 CMR 500.105(13)(c)(1)(b).

- The vehicle shall be equipped with a Commission-approved alarm system in accordance with 935 CMR 500.105(13)(c)(1)(c).
- The vehicle shall be equipped with functioning heating and air conditioning systems to maintain the appropriate temperatures within the vehicle for the storage of Marijuana Products. 935 CMR 500.105(13)(c)(1)(d).
- In compliance with 935 CMR 500.105(13)(c)(2), all Marijuana Products that the Company transports shall remain out of sight and shall not be visible from the exterior of the vehicle.
- The transportation vehicle shall not bear any internal or external markings that indicate that it is transporting Marijuana Products nor shall it bear the name, logo, or identifying marks of the Company. 935 CMR 500.105(13)(c)(3).
- No other products may be transported or stored in the vehicle being utilized for transportation of Marijuana Products to another LME. 935 CMR 500.105(13)(c)(4).
- Marijuana Establishment Agents shall not be permitted to carry a firearm on their person nor in the vehicle while it is in use for transportation of Marijuana Products. 935 CMR 500.105(13)(c)(5).
- Pursuant to 935 CMR 500.105(13)(d)(1), (2), and (4), the Company's transportation vehicle(s) shall be equipped with a secure, locked storage compartment that is part of the vehicle itself and which shall not be easily removed to ensure that security of Marijuana Products is maintained.
- The Company will be pursuing the Commission's permission to enact reasonable safeguards for the non-segregation of Marijuana Products destined for multiple LMEs in the same transportation trip.
- Pursuant to 935 CMR 500.105(13)(e)(1)(a)-(d), every vehicle that the Company utilizes for the transportation of Marijuana Products (whether a Company-owned vehicle or a licensed third-party transporter) shall contain a global position system ("GPS") monitoring device that is not a mobile device that is easily removable, securely affixed to the vehicle at all times that the vehicle is transporting or contains Marijuana Products, monitored by the Company during transportation of Marijuana Products, and that shall be inspected by the Commission prior to the vehicle's initial transportation trip and after any alteration to the secure locked storage compartment required by 935 CMR 500.105(13)(d)(1), (2), and (4).
- Each Marijuana Establishment Agent on a transportation trip in the vehicle shall have a separate form of secure communication with Marijuana Establishment Agents at the Company's originating facility in accordance with 935 CMR 500.105(13)(e)(2).
    - The secure types of communication that the Commission' regulations, at 935 CMR 500.105(13) (e)(3)(a)-(c), include but are not limited to two-way digital or analog radio (UHF or VHF frequencies), a cellular telephone, or a satellite telephone.
    - When the Company selects the mode of secure communications, it shall consider the cellular signal coverage of the origin and destination facilities, the transportation area to be travelled, the technology's base capabilities, antenna coverage for digital or analog radio, and the frequency of transportation trips. 935 CMR 500.105(13)(e)(4)(a)-(e).
- Pursuant to 935 CMR 500.105(13)(e)(5), the Marijuana Establishment Agents shall, prior to and immediately after departing from the originating facility, utilize the secure form of communication to contact Marijuana Establishment Agents at the Company's facility to test the communications and GPS monitoring equipment for full operational status.
- In the event that the secure communications equipment or the GPS monitoring device fails en route to the recipient LME, then the Marijuana Establishment Agents in the vehicle shall immediately return to the Company's originating facility until the communications equipment and/or the GPS monitoring equipment is restored to a fully functional status. 935 CMR 500.105(13)(e)(3)(6).

- Marijuana Establishment Agents engaged in the transportation of Marijuana Products shall contact the Company's originating location when stopping at and leaving any scheduled delivery location at an LME, and shall regularly, but not less than every 30 minutes, contact the Company's originating facility throughout the course of the transportation trip. 935 CMR 500.105(13)(e)(7).
- The Company's originating facility shall assign a Marijuana Establishment Agent or Agents to monitor the vehicle's GPS unit and the secure form of communication, log all official communications with the Marijuana Establishment Agent or Agents for every transportation trip of Marijuana Products to another LME. 935 CMR 500.105(13)(e)(8).

TRANSPORTATION MANIFESTS

- Pursuant to 935 CMR 500.105(13)(f)(1), the Company's Marijuana Establishment Agents shall maintain a transportation vehicle manifest in triplicate, with the original manifest remaining at the Company's originating facility, the second copy to be provided to the destination LME upon the vehicle's arrival, and with the third copy to be kept in the possession of one of the two Marijuana Establishment Agents assigned to the transportation trip and to be returned to the Company's originating facility upon the vehicle's return.
- Pursuant to 935 CMR 500.105(13)(f)(3)(a)-(m), the manifest shall include, at minimum, the following:
    - The originating Marijuana Establishment name, address, and registration number;
    - The names and registration numbers of the Marijuana Establishment Agents who transported the marijuana products;
    - The name and registration number of the marijuana establishment agent who prepared the manifest;
    - The destination Marijuana Establishment name, address, and registration number;
    - A description of the marijuana products being transported, including the weight and form or type of product;
    - The mileage of the transporting vehicle at departure from the originating Marijuana Establishment and mileage upon arrival at destination Marijuana Establishment, as well as mileage upon return to originating Marijuana Establishment;
    - The date and time of departure from originating Marijuana Establishment and arrival at destination Marijuana Establishment for each transportation;
    - A signature line for the Marijuana Establishment Agent who receives the marijuana products;
    - The weight and inventory before departure and upon receipt;
    - The date and time that the transported products were re-weighed and re- inventoried;
    - The name of the Marijuana Establishment Agent at the destination LME who re-weighed and re- inventoried products;
    - The vehicle make, model, and license plate number.
- Marijuana Establishment Agents shall securely transmit a copy of the manifest to the destination LME by facsimile or e-mail prior to transporting any Marijuana Products. 935 CMR 500.105(13)(f)(2).
- Pursuant to 935 CMR 500.105(13)(f)(4), the manifest shall be maintained in the vehicle during the duration of the transportation trip and until the delivery is completed to the LME.
- The Company shall retain all transportation manifests for no less than one year from the transportation trip and shall make any and all manifests available to the Commission upon request, in accordance with its record-keeping procedures and pursuant to 935 CMR 500.105(13)(f)(5).

MARIJUANA ESTABLISHMENT AGENT REQUIREMENTS

- Each and every employee or agent of the Company that is transporting or otherwise handling Marijuana Products shall comply with 935 CMR 500.105(13)(g) and maintain a valid Marijuana Establishment Agent registration card, a driver's license in good standing from the Massachusetts Registry of Motor Vehicles for the appropriate class of vehicle being utilized in transportation prior to transporting or otherwise handling Marijuana Products. All Company Marijuana Establishment Agents shall carry their Marijuana Establishment Agent registration card at all times during the transportation of Marijuana Products and shall furnish the card to the Commission or law enforcement officials upon request.

DESIGNATED INDIVIDUALS WITH ACCESS TO THE TRANSPORTATION VEHICLE

- Pursuant to 935 CMR 500.105(14)(a) and (b), representatives of the Commission in the course of exercising their responsibilities authorized by St. 2016, c. 334, as amended by St. 2017, c. 55 or 935 CMR 500.000, representatives of other state agencies of the Commonwealth, and emergency responders in the course of responding to an emergency, shall all have access to the Company's transportation vehicle and to its originating facility that is a LME.
- The Company acknowledges and intends to adhere to the language of 935 CMR 500.105(14) (b), which states that nothing in the Commission's regulations shall not be construed to prohibit access to authorized law enforcement personnel or local public health, inspectional services, or other permit-granting agents acting within the ambit of their lawful jurisdiction.

PREVENTION OF DIVERSION

G7 Lab LLC's ("G7 Lab") anti-diversion procedures include methods for identifying, recording, and reporting diversion, theft, or loss and for correcting all errors and inaccuracies in inventories. All employees shall receive anti-diversion training as part of their initial and subsequent training. G7 Lab has worked diligently to foster a work environment that values employees and that demands a culture of professional responsibility to mitigate risk and create a safe work environment that our employees take pride in. Pursuant to 935 CMR 500.105(1)(l), G7 Lab's written operating procedures will include a policy for the immediate dismissal of any marijuana establishment agent who has diverted marijuana.

Any and all discrepancies identified in G7 Lab's inventory system during a routine or special audit shall immediately be recorded and investigated as to the root cause. Pursuant to 935 CMR 105(13)(b), any incidents of diversion that occur during transport between marijuana establishments shall be duly reported to the Cannabis Control Commission and the applicable law enforcement authorities at the local and state levels not more than 24 hours after the discovery of any incident. In addition, discrepancies shall be recorded and reported according to G7 Lab's incident response plan.

Inventories will be highly restricted, secured, and surveilled areas with posted limited access. Only managers or designated staff shall have security designations to access products located in designated limited access areas. Monthly inventory checks in compliance with 935 CMR 105(8)(c)(2) will be conducted. Inventory shall remain locked and accessible only to limited designated agents and a manager.

In the event that there are any loss inventory discrepancies discovered by any employee, said discrepancy shall be promptly reported to the department manager upon discovery. The manager shall report all unresolved inventory discrepancies to the Cannabis Control Commission and Town of Littleton law enforcement authorities not more than 24 hours from the discovery of any incident, in accordance 935 CMR 500.105(13)(b). G7 Lab shall conduct an internal investigation to determine the appropriate consequences of the inventory discrepancy and to properly investigate the root cause of the discrepancy so as to minimize the likelihood of a repeated discrepancy of that specific origin.

G7 Lab will support employees in anti-diversion efforts as part of its employee orientation program, ongoing training, and creating a culture of transparency and professional integrity.

PERSONNEL POLICIES INCLUDING BACKGROUND CHECKS

G7 Lab LLC ("G7 Lab") has drafted and instituted these personnel policies to provide equal opportunity in all areas of employment, including hiring, recruitment, training and development, promotions, transfers, layoff, termination, compensation, benefits, social and recreational programs, and all other conditions and privileges of employment, in accordance with applicable federal, state, and local laws. G7 Lab shall make reasonable accommodations for qualified individuals with demonstrated physical or cognitive disabilities, in accordance with all applicable laws. In accordance with 935 CMR 500.101(1)(b), G7 Lab is providing these personnel policies, including background check policies, for its Independent Testing Laboratory.

Management is primarily responsible for seeing that equal employment opportunity policies are implemented, but all members of the staff share the responsibility for ensuring that, by their personal actions, the policies are effective and apply uniformly to everyone. Any employee, including managers, that G7 Lab determines to be involved in discriminatory practices are subject to disciplinary action and may be terminated. G7 Lab strives to maintain a work environment that is free from discrimination, intimidation, hostility, or other offenses that might interfere with work performance. In keeping with this desire, we will not tolerate any unlawful harassment of employees by anyone, including any manager, co-worker, vendor or clients.

In accordance with 935 CMR 500.105(1), General Operational Requirements for Marijuana Establishments, Written Operating Procedures, as a Marijuana Establishment, G7 Lab has and follows a set of detailed written operating procedures. G7 Lab has developed and will follow a set of such operating procedures at its facility. G7 Lab's operating procedures shall include, but are not necessarily limited to the following:

(a) Security measures in compliance with 935 CMR 500.110;
(b) Employee security policies, including personal safety and crime prevention techniques;
(c) A description of the Marijuana Establishment's hours of operation and after-hours contact information, which shall be provided to the Commission, made available to law enforcement officials upon request, and updated pursuant to 935 CMR 500.000.
(d) Storage of marijuana in compliance with 935 CMR 500.105(11);
(e) Procedures to ensure accurate record-keeping, including inventory protocols in compliance with 935 CMR 500.105(8) and (9);
(g) A staffing plan and staffing records in compliance with 935 CMR 500.105(9);
(h) Emergency procedures, including a disaster plan with procedures to be followed in case of fire or other emergencies;
(i) Alcohol, smoke, and drug-free workplace policies;
(j) A plan describing how confidential information will be maintained;
(k) A policy for the immediate dismissal of any marijuana establishment agent who has:

1. Diverted marijuana, which shall be reported to law enforcement officials and to the Commission;
2. Engaged in unsafe practices with regard to operation of the Marijuana Establishment, which shall be reported to the Commission; or
3. Been convicted or entered a guilty plea, plea of nolo contendere, or admission to sufficient facts of a felony drug offense involving distribution to a minor in the Commonwealth, or a like violation of the laws of another state, the United States

2. a description and the relevant dates of any civil or administrative action under the laws of the Commonwealth or an Other Jurisdiction, relating to any professional or occupational or fraudulent practices;
3. a description and relevant dates of any past or pending denial, suspension, or revocation of a license or registration, or the denial of a renewal of a license or registration, for any type of business or profession, by Other Jurisdictions;
4. a description and relevant dates of any past discipline by, or a pending disciplinary action or unresolved complaint by, the Commonwealth, or a like action or complaint by an Other Jurisdiction, with regard to any professional license or registration held by the applicant;
5. a nonrefundable application fee paid by the Independent Testing Laboratory with which the Independent Testing Laboratory Agent will be associated; and
6. any other information required by the Commission.

An Independent Testing Laboratory Person Having Direct Control registered with the Massachusetts DCJIS pursuant to 803 CMR 2.04: *iCORI Registration* shall submit to the Commission a CORI report and any other background check information required by the Commission for each individual for whom the Independent Testing Laboratory seeks a Laboratory Agent registration, obtained within 30 calendar days prior to submission. 935 CMR 500.029(4)

An Independent Testing Laboratory shall notify the Commission no more than one business day after a Laboratory Agent ceases to be associated with the Independent Testing Laboratory. The Laboratory Agent's registration shall be immediately void when the agent is no longer associated with the Independent Testing Laboratory. 935 CMR 500.029(5)

After obtaining a Registration Card for a Laboratory Agent, an Independent Testing Laboratory is responsible for notifying the Commission, in a form and manner determined by the Commission, as soon as possible, but in any event, within 5 business days of any changes to the information that the Independent Testing Laboratory was previously required to submit to the Commission or after discovery that a Registration Card has been lost or stolen. 935 CMR 500.029(7)

A Laboratory Agent shall always carry the Registration Card associated with the appropriate Independent Testing Laboratory while in possession of Marijuana Products, including at all times while at an Independent Testing Laboratory, or while transporting Marijuana or Marijuana Products. 935 CMR 500.029(8)

A Laboratory Agent affiliated with multiple Independent Testing Laboratories shall be registered as a Laboratory Agent by each Independent Testing Laboratory and shall be issued a Registration Card for each lab. 935 CMR 500.029(9)

Laboratory Agents are strictly prohibited from receiving direct or indirect financial compensation from any Marijuana Establishment for which the Laboratory Agent is conducting testing, other than reasonable contract fees paid for conducting the testing in the due course of work. 935 CMR 500.029(10)

Laboratory Agents shall not be employed by other types of Marijuana Establishments while employed as a Laboratory Agent at one or more Independent Testing Laboratories. 935 CMR 500.029(11)

An Independent Testing Laboratory or any associated Person or Entity Having Direct or Indirect Control, may not have a License in any other class. 935 CMR 500.050(1)(b)(2)

DIVERSITY PLAN

G7 Lab ("G7 Lab" or the "Company") is committed to actively promoting diversity, inclusion, and cultural competency, by implementing programmatic and operational procedures and policies that will help to make G7 Lab a leader and champion of diversity, both in the Town of Littleton and throughout the broader Massachusetts cannabis industry.

G7 Lab's commitment to diversity is reflected in the following Goal, which shall be pursued through the Programs outlined herein, and the progress of which shall be judged by the Measurements/Metrics as stated below, and adjusted as needed if necessary:

Goal: Achieve at least 10% of our staffing needs from women (5%) and minorities (5%).

Programs to Achieve Diversity Goal:

- Create a standing Committee on Diversity and Inclusion ("CDI") with membership to be comprised of leaders from all levels of G7 Lab's corporate hierarchy and across all departments. Membership on the CDI shall be determined by seniority of the employee and the composition of the CDI shall be comprised of at least 33% people who are minorities, women, veterans, people with disabilities, and/or members of the LGBTQ+ community.
- Provide on-site interactive workshops, annually (at minimum), covering such topics as the prevention of sexual harassment, racial and cultural diversity, and methods of fostering an inclusive work atmosphere.
- Increase diversity of the make-up of our staff by actively seeking out minorities, women, veterans, people with disabilities, and/or members of the LGBTQ+community, both through in-house hiring initiatives and participation in online diversity job boards including but not limited to https://diversityjobs.com/ and https://www.pdnrecruits.com/ and in-person job fairs at least annually and as staffing needs merit.
- Establish clearly written policies regarding diversity and a zero-tolerance policy for discrimination and/or sexual harassment, which shall be incorporated into our employee handbook.

Measurements:

- *Qualitative Metrics*: Perform annual evaluation of inclusion/diversity initiatives to ensure diversity is one of G7 Lab's strengths and remains a primary focus. This may include anonymous employee surveys or other private submission opportunities so that we can attempt to avoid any sort of reluctance for our employees to inform management how we are truly doing in pursuit of our diversity plan goals. The results of the surveys shall be compared to prior years' results to allow G7 Lab to adjust our programs in the event that our goal is not being achieved.
- *Quantitative Metrics*: We will strive to achieve at least 10% of our staffing needs from women and minorities. The personnel files shall be evaluated on a semi-annual basis to determine how many employees are women and minorities that occupy positions within the company and that number shall be divided by G7 Lab's total staffing at its Littleton facility to determine the percentage achieved.

INVENTORY PROCEDURES

G7 Lab LLC ("G7 Lab") will ensure that its inventory control procedures meet or exceed all of the Massachusetts Cannabis Control Commission's regulations found at 935 CMR 500.105(8).

G7 Lab shall utilize a Commission-approved seed-to-sale software program capable of interfacing with the Commonwealth's METRC software platform and that includes tags with unique alphanumeric codes to identify and track all marijuana and marijuana-infused products.

G7 Lab shall maintain a real-time inventory pursuant to 935 CMR 500.105(8)(c) and (d), with said real-time inventory to include all marijuana and marijuana-infused products in its facility inventory. 935 CMR 500.002 provides the following definition: Real-time Inventory or Seed-to-sale tracking means an electronic system that provides the electronic tracking of an individual cannabis or marijuana plant, including its testing of marijuana or marijuana infused products. G7 Lab's registered marijuana establishment agents shall utilize the seed-to-sale tracking methodology approved by the Commission under 935 CMR 500.000.

G7 Lab shall:

- Establish inventory controls and procedures for the conduct of inventory reviews.
- Conduct a monthly inventory of marijuana in the establishment;
- Conduct a comprehensive annual inventory;
- Promptly transcribe inventories if taken by use of an audio recording device. The record of each inventory shall include but not limited to:
    - Inventory Date
    - Inventory Summary
    - Findings (if necessary)
    - Names, signatures, and titles of the registered marijuana establishment agent(s) who conducted the inventory.

Registered marijuana establishment agents that identify any discrepancies during inventory will report such discrepancy to the Commission if an internal audit and investigation fails to resolve the discrepancy. Discrepancies caused by diversion or theft will be promptly reported (and in no event longer than 24 hours after discovery, pursuant to 935 CMR 500.110(7)(a)(1)) to the Cannabis Control Commission and the Police Department.

G7 Lab will adhere to all applicable tax laws in the Commonwealth, including, but not limited to, the laws regarding taxation, filing, seizure, and audit.

EXHIBIT E

7. The quantity of Marijuana and Marijuana products that will be cultivated, processed, manufactured, packaged, transported, tested or studied at the marijuana establishment as applicable.

As per my business plan the anticipated testing volume is 75 specimens per week for the 1st year. With testing requirement of approximately 1 gram per test i.e. approximately 75 grams or 2.64 ounces of marijuana or marijuana infused products tested per week.

Anticipated testing per day 15 samples = 15 grams or 0.5 ounces of marijuana or marijuana infused products. While testing the marijuana must be mixed with solvents and in a unconsumable form thereafter.

EXHIBIT F

Date:07/10/2020

Planning Board of Littleton MA
37 Shattuck St, Room 303
Littleton, MA 01460

Subject: Written Statement of non-consumption on premises of the Laboratory.

Dear Chair and Board Members:

Signed under the pains and penalties of perjury, I Shankar P. Gautam an authorized representative of G7 Labs LLC certify that no marijuana or marijuana products will be smoked, burned, or consumed by anyone on the premises as a part of cultivation, manufacturing, testing or researching operations.

Signature of Agent

6-14-2020
Date:

Name: Shankar P. Gautam

Title: CEO/Technical Manager.

Entity: G7 Lab LLC.

Thank you!
Shankar P. Gautam.
G7 Lab LLC
160 Ayer Rd, Unit 3
Littleton, MA 01460.

EXHIBIT G

9. Name and Addresses of each owner of the Marijuana Establishment and where the owner is a business entity, the name and address of each owner of the establishment.

- Bussiness Entity : G7 lab LLC,

  160 Ayer Road, Unit 3,
  Littleton, MA 01460.

- Owners Name and Address
  - Shankar P. Gautam
    99 Pond Ave Unit 408
    Brookline, MA 02445

  - Pratima Bhattarai
    99 Pond Ave Unit 408
    Brookline, MA 02445

EXHIBIT H

AMENDED AND RESTATED OPERATING AGREEMENT

OF

G7 LAB LLC

(a Member-Managed Massachusetts Limited Liability Company)

Effective as of April 1, 2020

THE UNITS REPRESENTED BY THIS OPERATING AGREEMENT HAVE NOT BEEN REGISTERED UNDER THE UNITED STATES SECURITIES ACT OF 1933, AS AMENDED, OR UNDER ANY OTHER APPLICABLE SECURITIES LAWS. SUCH UNITS MAY NOT BE SOLD, ASSIGNED, PLEDGED OR OTHERWISE DISPOSED OF AT ANY TIME WITHOUT EFFECTIVE REGISTRATION UNDER SUCH ACT AND LAWS OR EXEMPTION THEREFROM, AND COMPLIANCE WITH THE OTHER SUBSTANTIAL RESTRICTIONS ON TRANSFERABILITY SET FORTH HEREIN.

AMENDED AND RESTATED OPERATING AGREEMENT

OF

G7 LAB LLC

(a Massachusetts Limited Liability Company)

This AMENDED AND RESTATED OPERATING AGREEMENT (this "***Agreement***") of G7 LAB LLC, a limited liability company organized under the laws of the Commonwealth of Massachusetts (the "***Company***"), is entered into and made effective as of April 1, 2020 by and among the Company, Shankar P. Gautam, a domiciliary of the Commonwealth of Massachusetts, Pratima Bhattarai, a domiciliary of the Commonwealth of Massachusetts, and all other persons or entities who shall execute and deliver this Agreement or authorized counterparts or facsimiles of the same pursuant to the provisions hereof.

This Agreement supersedes and replaces all prior agreements, written or oral, between each of its signatories, on any subject matter provided for in this Agreement or on any subject related to the governance of the Company or the rights, duties, powers and obligations of the Members of the Company to each other. Without limiting the generality of the foregoing, this Agreement supersedes and replaces, in its entirety, that certain Operating Agreement of the Company having an execution date of May 7th, 2019.

WHEREAS, the Company was formed by the filing of the Certificate of Organization of the Company with the Secretary of the Commonwealth of Massachusetts on February 18, 2019;

WHEREAS, the Members and the Company intend that this Agreement shall set forth the understanding amongst them with respect to the terms and conditions of their respective interests, rights and obligations with respect to the Company, its management and operation, and the economic arrangement between the Members with respect to the Company; and

NOW, THEREFORE, the parties hereto, intending to be legally bound hereby, agree as follows:

GENERAL

Definitions. Certain capitalized terms used in this Agreement shall have the respective meanings set forth on **Schedule B** attached hereto and made a part hereof, unless otherwise expressly provided herein or unless the context otherwise requires. Certain capitalized terms not defined herein may be defined in the provisions of the Massachusetts Limited Liability Company Act.

Overview. This Agreement sets forth, among other things, the manner in which the Company will be operated and the manner in which the profits and losses of the Company will be shared by the Members.

Name. The name of the Company shall be G7 LAB LLC.

Principal Office. The principal office of the Company shall be at 160 Ayer Rd, Unit 3, Littleton, MA 01460 or at such other place or places as the Members may determine from time to time.

Registered Office. The registered office of the Company shall be the office of the initial registered agent named in the Certificate of Organization or such other office (which need not be a place of business of the Company) as the Members may designate from time to time in the manner provided by the Act and applicable law.

The registered agent for service of process on the Company in the Commonwealth of Massachusetts shall be the initial registered agent named in the Certificate of Organization or such other Person or Persons as the Members may designate from time to time in the manner provided by the Act and applicable law.

Term. The Company commenced on February 18, 2019, the date that the Certificate of Organization of the Company was filed with the Massachusetts Secretary of the Commonwealth and shall continue in existence in perpetuity or until earlier dissolved in accordance with the provisions of this Agreement and the Act.

Purpose. Within the meaning of 935 CMR 500.1 *et. seq.*, and the other rules and regulations set forth by the Cannabis Control Commission or any other law or rule of the Commonwealth of Massachusetts related to the conduct of a lawful cannabis-related business, the principal purpose of the Company is to conduct a lawful cannabis-related business, specifically, a lawful cannabis testing facility. The Company is authorized to perform any act necessary and incidental to further its principal purpose. No term or provision of this Agreement inconsistent with such purpose is enforceable.

Title to Property. All Company Property shall be owned by the Company as an entity and no Member shall have any ownership interest in such property in his, her or its individual name or right solely by reason of being a Member, and except as otherwise provided in this Agreement, each Member's interest in the Company shall be personal property for all purposes. The Company shall hold all Company Property in the name of the Company and not in the name of any Member.

Operating Agreement and the Act. This Agreement shall constitute the "operating agreement" (as that term is used in the Act) of the Company. The rights, powers, duties, obligations and liabilities of the Members shall be determined pursuant to the Act and this Agreement. To the extent that the rights, powers, duties, obligations and liabilities of any Member are different by reason of any provision of this Agreement than they would be under the Act in the absence of such provision, this Agreement shall, to the extent permitted by the Act, control.

Special Provisions Relating to the Operation of a Cannabis-Related Business in Massachusetts. To the extent required under the laws of the Commonwealth of Massachusetts including, without limitation, the applicable rules and regulations of the Cannabis Control Commission, the Company shall have the stated and specific purpose of operating a lawful cannabis-related business. Other provisions of this Agreement notwithstanding, the Company shall have no power, nor any of its Members or Managers have the power, to cause the

Company to do anything, or be organized in any fashion, with such applicable laws. No person may be a Member whose status as a Member or holder of any Units of the Company would cause the Company to be ineligible to receive a license to conduct a cannabis-related business in the Commonwealth of Massachusetts. The commission of any act by any Member tending to render the Company ineligible for a license to conduct a cannabis-related business in Massachusetts shall constitute sufficient independent grounds for the expulsion of that Member, without recourse and without the need for notice, from the Company. No person who is a license-holder or partial holder or owner of a license to conduct any cannabis-related business other than a licensed Massachusetts cannabis testing facility may be a Member or hold any actual or *de facto* interest in, or control over, the Company. Any Member's acquiring or attempting to acquire such an interest shall terminate, by operation of law and without notice, that Member's interest in the Company.

MEMBERS

Meetings of Members. The Members shall meet at least once each Fiscal Year at the principal office of the Company or at such other place within or outside of the Commonwealth of Massachusetts as the Members may agree, on such date and at such time as may be fixed by the Members for the transaction of such lawful business as may come before the meeting. Special meetings of the Members may be called by any Member upon written notice to the other Members or by telephone or facsimile, which notice must be given no fewer than two (2) business days and no more than sixty (60) days prior to the date of the meeting. No business shall be acted upon at a special meeting that is not stated in the notice of the meeting. Meetings of Members may be held by telephone or any other communications equipment, by means of which all participating Members can simultaneously hear each other during the meeting. Special meetings shall be held at the principal office of the Company or at such other place within or outside of the Commonwealth of Massachusetts as the Members may agree. All meetings of the Members shall be called to order and presided over by such Person or Persons who may be designated by the Members.

Quorum. Unless a quorum consisting of at least a Majority of the Management Interests of the Members is present in person or by proxy, no action may be taken at a meeting of Members.

Action by Written Consent. Any action that may be taken at a meeting of the Members may be taken without a meeting, if a consent or consents in writing, setting forth the action so taken, shall be signed by Members whose percentage of Units would be sufficient to approve the action at a meeting of the Members. All Members who do not participate in taking the action by written consent shall be given written notice thereof by the Company promptly after such action has been taken.

Voting Rights; Required Vote. Each Member shall be entitled to vote his, her or its Units to the extent such Units bear Management Interests with respect to any action required or permitted to be taken by the Members under this Agreement. All such actions that require the vote, consent or approval of the Members shall require the affirmative vote, consent or approval of a Majority of the Management Interests, as represented by Units, of the Members, unless the question or matter is one upon which, by express provision of applicable law or of the

Certificate of Organization or this Agreement, a different vote is required, and in which case, such express provision shall govern and control the decision of such question or matter.

Deadlock. In the event that a proposed action of the Members does not receive the vote, consent or approval of a Majority of the Management Interest of the Members pursuant to this Agreement and results in a deadlock of the Members (a "***Deadlock***"), the Deadlock shall be resolved as follows:

1. The Members shall mutually agree upon an independent third-party of relevant experience and competence to decide the matter by mediation.
2. If after 30 days of mediation the matter still has not been decided, the Company shall be dissolved.

Proxies. Every Member entitled to a vote may vote either in person or by proxy. Every proxy shall be executed in writing by the Member or by his, her or its duly authorized attorney-in-fact and filed with the corporate records of the Company. A proxy, unless coupled with an interest, shall be revocable at will by the Member authorizing the proxy, notwithstanding any other agreement or any provision in the proxy to the contrary, but the revocation of a proxy shall not be effective until written notice thereof has been received by the Company.

Issuance of Additional Units. The Company may not sell or issue additional Units or other equity interests in the Company ("***New Units***") without the affirmative vote, consent, or approval of a Majority of the Management Interest of the Members. Until there are more than two Members, such a decision shall require the unanimous consent of the Members. Dilution, whether or not *pro rata*, shall be determined at the time of issuance of such Units by a majority vote of the Management Interest of the Members.

Preemptive Rights of Members. Any sale and issuance of New Units shall be subject to the following preemptive rights of the Members (the "***Preemptive Rights***"):

The Company must first offer each Member the opportunity to purchase up to a percentage of the New Units equal to such Member's Percentage Interest of Units at the time of the proposed offering, so that, after the issuance of all such proposed New Units, such Member's Percentage Interest of Units will be the same as the Percentage Interest of Units maintained by such Member immediately prior to the issuance of any such New Units.

Activities of Members. To the extent permitted under the Act, the following provisions shall apply:

Nothing in this Agreement shall preclude any Member, or any Affiliates of any Member, from engaging in other transactions and possessing interests and making investments in and loans to other business ventures of any nature or description (except, without limitation, businesses that compete directly with the Company), independently or with others, whether existing as of the date hereof or hereafter coming into existence, and neither the Company nor any other Member shall have any rights in or to any such other transactions, investments or ventures or the income or profits derived therefrom, except to the extent that no Member may have any such interests, investments, or loans owed from any lawful cannabis business that is not a Massachusetts cannabis testing facility.

Subject to the other express provisions of this Agreement, each Member and agent of the Company at any time and from time to time may engage in and possess interests in other business ventures of any and every type and description, other than a lawful cannabis business that is not a Massachusetts cannabis testing facility, independently or with others, ventures not in direct competition with the Company, with no obligation to offer to the Company or any other Member or agent the right to participate therein.

Liability of the Members. Except as otherwise provided by the Act or as contemplated by this Agreement, the debts, obligations and liabilities of the Company, whether arising in contract, tort or otherwise, shall be solely the debts, obligations and liabilities of the Company. No Member shall be obligated personally or have any liability for the debts, obligations or liabilities of the Company or for the acts or omissions of any other Member, officer, agent or employee of the Company, except to the extent provided in the Act or as specifically and expressly agreed to by such Member in writing.

No Withdrawal. A Member shall not cease to be a Member as a result of a Bankruptcy of such Member or as a result of any other events specified in the Act. So long as a Member continues to hold any Units, such Member shall not have the ability to withdraw or resign as a Member prior to the dissolution and winding up of the Company and any such withdrawal or resignation or attempted withdrawal or resignation by a Member prior to the dissolution or winding up of the Company shall be null and void absent the unanimous consent of the remaining Members. As soon as any Person who is a Member ceases to hold any Units, such Person shall no longer be a Member.

Compensation; Expenses. Members shall not be entitled to receive any salary, fee or draw for services rendered to or on behalf of the Company or otherwise in its capacity as a Member, unless otherwise approved by the Members; *provided, however*, that Members shall be entitled to be reimbursed for reasonable and necessary out-of-pocket costs and expenses incurred in the course of their services hereunder. Members who are also *bona fide* employees of the Company may receive salaries from the Company in their capacity as employees.

Priority and Return of Capital. No Member shall have priority over any other Member, either as to the return of Capital Contributions or as to Profits, Losses or distributions; *provided, however*, that this Section shall not apply to loans that a Member has made to the Company as authorized herein, or the terms of any New Units authorized in accordance with the terms of this Agreement.

No Company Certificates. The Units of the Members in the Company shall not be certificated.

Names and Capital Contributions of Members. The names of the Members, along with the number of Units owned by such Members and their respective Capital Contributions and Percentage Interests, are as set forth on **Schedule A**, attached hereto and made a part hereof. The Members shall cause **Schedule A** to be updated as necessary from time to time.

Confidentiality. Each Member acknowledges that in their capacity as a member or principal of a Member, employee or officer of the Company they may from time to time be entrusted with various types of Confidential Information (e.g., customer lists, financial

information, marketing strategies, production techniques, software etc.) and other information of a privileged and confidential nature which, upon disclosure, would be highly prejudicial to the interests of the Company (collectively the "Confidential Information").

Any matters, financial or otherwise, with respect to the Company, its subsidiaries or Affiliates, including without limitation the terms of this Agreement, which are not divulged by the Company to the public in the ordinary course of its Business shall be deemed to be Confidential Information and any Member who wishes to divulge such Confidential Information to any third party (other than a purchaser as permitted under this Agreement who is subject to obligations of confidentiality in favor of the Company) shall, as a condition to such divulging, obtain the prior approval of a Member. Each Member acknowledges and agrees that the right to possess and maintain confidentially all such Confidential Information constitutes a proprietary right of the Company which the Company is entitled to protect.

Each Member agrees that it will not at any time, whether then a Member of the Company or not, directly or indirectly disclose Confidential Information to any Person (other than as required in the performance of a Member's duties or to a Member's own professional advisors on a need-to-know basis or to a purchaser as permitted under this Agreement who is subject to obligations of confidentiality in favor of the Company) not authorized by the Company to receive such information except as required by law or court order.

Each Member shall return to the Company all property, written information and documents of the Corporation and all Confidential Information and all copies of the same, whether in written, electronic or other form and certify as to such information's return or destruction forthwith upon his or her cessation as a Member. For greater certainty, nothing in this Agreement imposes liability upon any Member for making disclosures of Confidential Information where such disclosure (a) is required by law or court order; or (b) is otherwise disclosed not as a result of a breach by the Member of his, her or its obligations hereunder.

Exceptions to Confidentiality Related to the Business of the Company. In the event that the Company enters into any line of business that is or may become subject of regulation that requires the public or private disclosure to any regulator or other entity of information that would otherwise constitute Confidential Information, including without limitation a requirement by the Massachusetts Department of Agriculture or the Cannabis Control Commission to disclose the material terms of otherwise-Confidential Information such as the material terms of this Agreement, such information shall not constitute Confidential Information to the limited extent of permitting the Members to disclose the minimum amount of otherwise-Confidential Information required under any such law or regulation.

Non-Solicitation. None of the Officers nor any Members or their respective Affiliates shall, directly or indirectly, (i) solicit, entice away or in any other manner persuade or attempt

to persuade any employees, contractors or vendors of the Company to alter his, her or its relationship with the Company or its business or (ii) engage or employ any former employees, contractors, vendors of the Company for a period of three (3) years after such persons or entities have severed their relationship with the Company (except (*y*) if such employee is terminated by the Company or (*z*) if such employee is responding to a newspaper advertisement, job posting or other general solicitation not targeted at such employee). For purposes of clarification, the parties agree that the limitations contained in clause (ii) of the preceding sentence shall not apply to any regional, national, or international firms engaged by the Company.

MANAGEMENT AND OFFICERS

Management. The business and affairs of the Company will be managed by the Members. The Members shall conduct the business of the Company consistent with its purposes as set forth in herein in a prudent and businesslike manner. The Members shall have full and complete authority, power and discretion to manage and control the business, affairs and properties of the Company, to make all decisions regarding those matters and to perform any and all other acts or activities customary or incident to the management of the Company's business, except for decisions expressly requiring a vote of the Members as provided herein.

The initial Members of the Company shall be Shankar P. Gautam, a domiciliary of the Commonwealth of Massachusetts, and Pratima Bhattarai, a domiciliary of the Commonwealth of Massachusetts. A Member may be removed only for cause. The Members may style themselves or hold themselves out to the general public as a "Member" or other customary and usual terms denoting the authority to act on behalf of the Company.

Where the Members designate one or several of themselves as Managers, such designation shall be by their unanimous consent, and shall confer only those powers permitted by the Act, which the Members may limit or expand at their discretion.

Specific Rights and Powers of the Board. The Company shall have a Board of Directors initially comprised of the initial Members of the Company. The Board my make any decisions on behalf of the Company, or delegate such powers to those Members comprising the Board at their discretion. Decisions among Members of the Board, where the Board has an even number of Members, shall be subject to the deadlock provisions regarding mediation and other resolution provided as to ordinary decisions of the Members. Any decision that the Manager makes shall be deemed made by the Board except where the Board expressly prohibits or overrides an action of the Manager.

Without limiting the generality of this Section, the Board shall have the power and authority on behalf of the Company to do the following, except where such act would constitute an act requiring a vote as provided elsewhere herein:

Execute any and all documents or instruments of any kind that the Member deems necessary or appropriate to achieve the purposes of the Company, including, without limitation, contracts, agreements, leases, subleases, easements, deeds, notes, mortgages and

other documents or instruments of any kind or character or amendments of any such documents or instruments;

Borrow money from individuals, banks and other lending institutions on the general credit of the Company for use in the Company business, all upon such terms and containing such features as the Member may determine to be necessary or desirable in its absolute discretion, except that any such debt in excess of $1,000 shall require the unanimous consent of the initial Members;

Confess judgment against the Company and to execute any document granting to any Person the right to confess judgment against the Company in the event of the Company's default in the performance of its obligations under any loan agreement, note, or other agreement or instrument;

Incur, secure, renew, replace, refinance, modify, extend, repay or otherwise discharge any indebtedness of the Company;

Sell, exchange, lease, mortgage, pledge, assign, or otherwise transfer, dispose of or encumber all or a portion of the Company Property or any interest therein;

Procure and maintain, at the expense of the Company and with responsible companies, such insurance as may be available in such amounts and covering such risks as the Member shall deem necessary or desirable in the Member's absolute discretion, including insurance policies insuring the Member against liability arising as a result of any action he or she may take or fail to take in his capacity as Member of the Company;

Employ and dismiss from employment any and all Company employees, agents, independent contractors, attorneys and accountants;

Supervise the preparation and filing of all Company tax returns;

Open, maintain and close bank and investment accounts and arrangements, draw checks and other orders for the payment of money, and designate individuals with authority to sign or give instructions with respect to those accounts and arrangements;

Engage in correspondence with any regulatory or governmental body, including the Internal Revenue Service and the Securities and Exchange Commission;

Delegate any or all of the administrative and managerial powers conferred upon a general manager or to Officers, employees or agents of the Company;

Bring, defend or settle actions at law or equity; and

Retain and compensate on behalf of the Company such accountants, attorneys, realtors, tax specialists, management companies, consultants or other professionals as the Member shall deem necessary or desirable in the Member's absolute discretion in order to carry out the purposes and business of the Company.

Determining the Board; Procedures for Board Elections. The Board may expand or reduce its number at any time by the unanimous decision of the Board Members (except,

where being reduced, the assent of a Board Member being removed by such a reduction is not required unless that Board Member is one of the initial Members of the Company, in which case the Initial Members shall act in unanimity). The Board may create additional Board Member seats without the specific appointment of such a Board Member. The addition or removal of a Board Member shall not affect a Members' status *qua* a Member, I.e., the removal of a Board Member from the Board shall not constitute the expulsion of that Member from the Company.

Actions Requiring a Vote. Any elective purchase by the Company, or the creation of new indebtedness, in excess of $10,000 in a single transaction or series of related transactions shall require the Manager to deliver written notice of such transaction to the Members, who may vote upon such transaction at their discretion.

Authority of Attorneys-In-Fact, Employees, Agents and Members. Unless authorized to do so by this Agreement or by the Members, no attorney-in-fact, employee or other agent of the Company shall have any power or authority to bind the Company in any way, to pledge its credit, or to render it liable for any purpose.

Records, Audits and Reports. Proper and complete records and books of account shall be kept by the Company. The books and records shall at all times be maintained at the principal office of the Company and shall be open to the reasonable inspection and examination of the Members or their duly authorized representatives for any proper purpose relating to the Company during normal business hours.

Returns and Other Elections. The Members shall cause the preparation and timely filing of all tax returns required to be filed by the Company pursuant to the Code and all other tax returns deemed necessary and required in each jurisdiction in which the Company does business. Copies of such returns or pertinent information therefrom, will be furnished to the Members within a reasonable time after the end of the Company's Fiscal Year as required by law or upon a Member's written request. All elections permitted to be made by the Company under federal or state laws will be made by the Members by their unanimous decision. Each of the Members acknowledges and agrees that in no event shall another Member or the Company be liable or otherwise responsible for the tax treatment or tax-related aspects of any investment or other activity of the Members or the Company, it being understood that each Member should consult his or her own tax advisers regarding such matters.

Tax Matters Partner. The Members shall designate a "***Tax Matters Partner***" (as defined in Code Section 6231) who shall be authorized and required to represent the Company (at the Company's expense) in connection with all examinations of the Company's affairs by tax authorities, including, without limitation, administrative and judicial proceedings, and to expend Company funds for professional services and costs associated therewith. The Members agree to cooperate with each other and to do, or refrain from doing, any and all things reasonably required to conduct such proceedings. The initial Tax Matters Partner shall be Shankar Gautam.

Officers. The Members may from time to time elect or appoint one or more officers of the Company, and such officers shall have such titles, powers, duties and tenure as the Members shall from time to time determine. Vacancies may be filled or new offices created and filled by resolution of the Members. Any officer or agent elected or appointed by the Members may be

removed by the Members whenever in their judgment the best interests of the Company would be served; *provided, however*, that such removal shall be without prejudice to the contract rights, if any, of the person so removed. An officer is not required to be a Member. No officer shall be delegated the authority to take any action requiring the approval of the Members without the prior consent of such Members as are required to approve such actions. The Company shall have a Manager who is also a Member, who shall have all the powers of a Manager under the Act and as provided for in this Agreement. The initial Manager of the Company shall be Member Shankar Gautam, who may not be removed without his consent.

Checks, Notes, Etc. The Members shall from time to time designate the officers or agents of the Company who shall have power, in its name, to sign and endorse checks and other negotiable instruments and to borrow money for the Company, and in its name, to make notes or other evidences of indebtedness.

CONTRIBUTIONS TO THE COMPANY AND CAPITAL ACCOUNTS

Capital Contributions. The Members have contributed to the capital of the Company, as their "Initial Capital Contributions," the sums (whether in cash, by contribution of property, or a combination thereof) set forth on **Schedule A** to this Agreement. No allocation of Units in the Company shall be based in part or in whole upon Initial Capital Contributions. Nothing in this Agreement shall prevent any Member from claiming their Initial Capital Contributions as business-related expenses for tax purposes. No Member shall have any obligation to contribute any additional amount to the capital of the Company. Loans made to the Company by a Member pursuant to the below subsection shall not be deemed to be Capital Contributions.

Loans by Members. Any one or more Members may, but shall not be obligated to, loan to the Company additional amounts from time to time to enable the Company to meet operating expenses and other cash needs; *provided, however*, that each such loan shall be approved by the Members. Each such loan shall be at such rate of interest and be subject to such terms and conditions that are fair and reasonable to the Company and comparable to the terms otherwise generally available at the time from commercial lenders. Each such loan shall be evidenced by a written note executed by the Company and delivered to the Member making the loan.

Limitation on Return of Capital. None of the Members shall be entitled to a return of capital at any fixed time or upon demand, to receive interest on capital or to receive any distribution from the Company. In furtherance of and not in limitation of the foregoing sentence, the Members shall not have any right of any return of their Capital Contributions. A Member is not required to contribute or lend any cash or property to the Company to enable the Company to return any Member's Capital Contributions.

Capital Accounts.

The Company shall maintain a separate Capital Account for each Member. Capital Accounts shall not govern distributions by the Company to the Members, it being understood that Capital Accounts shall be maintained solely to assist the Company in allocating Tax Items.

The Capital Account of each Member shall be increased by an amount equal to such Member's Capital Contribution as and when paid and by such Member's share of Profits, and reduced by such Member's share of Losses and the amount of any distributions to such Member. Each Member's Capital Account will be maintained and adjusted in accordance with the Code and the Treasury Regulations thereunder, including the adjustments to capital accounts permitted by Section 704(b) of the Code and the Treasury Regulations thereunder in the case of a Member who receives the benefit or detriment of any basis adjustment under Sections 734, 743 and 754 of the Code. It is intended that appropriate adjustments will thereby be made to Capital Accounts to give effect to any Tax Item that is allocated pursuant to this Agreement and any adjustments to the allocation of any such item subsequently made upon audit by the Internal Revenue Service or otherwise. Each Member's Capital Account will include the Capital Account, as so adjusted, of any predecessor holders of the interest of such Member in the Company.

Capital Deficits. None of the Members shall be obligated to repay to the Company, any other Member or any creditor any deficit in such Member's Capital Account arising at any time during the term of the Company or upon dissolution and liquidation of the Company. The Members shall not be liable for the return of the capital of the Members and it is expressly understood that any such return shall be made solely from the Company's assets.

ALLOCATION OF PROFITS AND LOSSES

Allocation of Profits and Losses. Except as otherwise expressly provided in this Agreement, all Profits or Losses of the Company (including each item of income, gain, loss, deduction or credit entering into the computation thereof) for each Fiscal Year shall be allocated among the Members in accordance with their respective Economic Interests; *provided, however*, that (a) if one or more Members shall have positive balances in their Capital Accounts and one or more Members shall have deficit balances in their Capital Accounts, Profits shall first be allocated to those Members having deficit balances in their Capital Accounts to the extent of and in proportion to such deficit balances, and (b) if one or more Members shall have deficit balances in their Capital Accounts and one or more Members shall have positive balances in their Capital Accounts, Losses shall first be allocated to those Members having positive balances in their Capital Accounts to the extent of and in proportion to such positive balances. Capital Accounts will not govern distributions by the Company to the Members, it being understood that Capital Accounts will be maintained solely to assist the Company in allocating Tax Items of the Company.

§280E Profits and Losses. In the event that the Company ends its fiscal year with a net cash balance lower than the net cash balance with which it began the year, the Company shall be deemed to have had a "Loss" to that extent regardless of the tax deductibility of certain of the Company's expenses owing to the provisions of §280E of the Code. The Company may not pass along any gains to any Member where, but for §280E of the Code, the Company would have taken a Loss as set forth on its tax return for that year. Any such gains (or "Profits"), where there are gains on the basis of the §280 non-deductibility of certain otherwise-deductible expenses, shall be deemed retained earnings by the Company.

Compliance with the Code. The allocation provisions in this Section are intended to comply with applicable provisions of the Code, including regulations promulgated under

Section 704 of the Code, and successor statutes and regulations thereof, and shall be interpreted and applied in a manner consistent with such statutory and regulatory provisions.

Allocation of Profits and Losses upon Transfer or Change in Units. It is agreed that if all or a portion of a Member's Units are transferred or adjusted as permitted herein, Profits and Losses for the transfer's Fiscal Year shall be allocated between the transferor and the transferee based upon the number of days in said Fiscal Year that each owned such Units, without regard to the dates upon which income was received or expenses were incurred during said Fiscal Year, except as otherwise required by the provisions of Code Section 706 and Treasury Regulations thereunder or as the transferor and transferee may agree with the Board's consent.

Contributed Property. Notwithstanding anything contained herein to the contrary, if a Member contributes property to the Company having a fair market value that differs from its adjusted basis at the time of contribution, then items of income, gain, loss and deduction with respect to such property shall be shared among the Members so as to take account of the variation between the adjusted tax basis of the property to the Company and its fair market value at the time of contribution, in the manner prescribed in Code Section 704(c) and the Treasury Regulations thereunder. Any applicable tax elections will be made by the Board and shall be binding on all Members.

DISTRIBUTIONS

Tax Distributions.

The Company shall make distributions pursuant to this Section to each Member in an amount no less than the federal, state and local income tax liability of such Member as a result of the allocations of Tax Items to such Member. Any distribution made by reason of this Section is referred to as a "***Tax Distribution***."

Each Tax Distribution shall be made not less than five (5) business days before the next occurring due date for federal estimated income tax payments. In determining the amount of any Tax Distribution, it shall be assumed that the Tax Items were the only items entering into the computation of tax liability of the Members.

Notwithstanding anything in this Section, the Company shall not be obligated, and the Members shall not be obligated to cause the Company, to borrow funds or obtain additional Capital Contributions to fund Tax Distributions.

Limitation upon Distributions. No distributions of any nature shall be permitted under this Section if, after any such distribution, either (i) the net assets of the Company would be less than zero, (ii) the Company would be insolvent or (iii) the Company would not have sufficient cash available to meet the reasonably anticipated needs of the Company, as such needs are determined in the reasonable discretion of the Members. Notwithstanding any provision to the contrary contained in this Agreement, the Company shall not make any distribution to Members if such distribution would otherwise violate the Act or other applicable law.

TRANSFER OF UNITS

Restrictions on Sale or Other Disposition. Except as otherwise provided for in this Agreement, each Member agrees not to sell, assign, transfer, give, donate, bequeath, pledge, deposit or in any way alienate, encumber, hypothecate, or dispose of (collectively, "***Transfer***") all or any portion of such Member's Units now owned or hereafter acquired by such Member. Any purported Transfer or other disposition of Units or assets of the Company in violation hereof shall be void and ineffectual and shall not operate to transfer any interest or title to the purported transferee.

Members' Right of First Refusal.

If a Member desires to Transfer any of his, her or its Units to any transferee other than those expressly permitted in this Section or any Units owned by any Member shall be subject to sale or other Transfer by reason of (i) bankruptcy or insolvency proceedings, whether voluntary or involuntary, (ii) distribution of marital property following divorce, or (iii) distraint, levy, execution or other involuntary Transfer, then such selling Member, or Member otherwise affected by such Transfer (in either case, a "***Selling Member***"), shall, as soon as reasonably practical (but in the case of a proposed Transfer pursuant to subsection (i), at least sixty (60) days prior to the effective date of such proposed Transfer), submit in writing to the other Member the proposed terms and conditions of the proposed Transfer (the "***Terms***"). Such Terms shall include, without limitation, the price to be received by the transferee (or in the case of a proposed Transfer pursuant to subsection (ii), the price, value or consideration, if readily determinable, on the basis of which such Units are proposed to be transferred to such transferee), the number of Units to be transferred (the "***For Sale Units***") and the proposed transferee. After receipt of the Terms of the proposed Transfer, the other Member will have thirty (30) days (the "***Notice Period***") to exercise its right of first refusal hereunder to redeem the For Sale Units at the lesser of (xi) the price or value as may be set forth in the Terms or (xii) the Agreed Value, with the terms of such consideration to be paid for the Units to be in the manner as stated herein, by notifying the Selling Member in writing of its intention to exercise its first refusal right.

Notwithstanding anything herein to the contrary, in the event of the purchase by a Member of another Member's Units pursuant to this Section due to the death of a Member, if at the time of such death the Company has in place a key man life insurance policy on such Member, then the proceeds from such life insurance policy shall be applied to the purchase price for such deceased Member's Units and, if applicable, the Closing Date shall be delayed to allow for the administration and receipt of such life insurance proceeds from the insurer.

Restrictions Applicable to All Transfers. Except as may be otherwise set forth herein, all Transfers of Units will be subject to the following conditions:

Prior to any Transfer, the Transferor will cause the prospective transferee, if not already a Member, to execute and deliver to the Company and the other Members a joinder to this Agreement; and

The Units have not been registered under the Securities Act of 1933 or any applicable state securities laws, and may not be transferred in the absence of an effective

registration statement under such laws or pursuant to an exemption from such laws. If Units are being transferred pursuant to such an exemption, then the transferor will give prior written notice of such exemption to the Company and the Company may request an opinion of the transferor's counsel as to the availability of such exemption, which opinion and counsel must be reasonably satisfactory to the Company.

Exception for Estate Planning. A Transfer to an Affiliate of a Member or the Family of such Member of the right to receive distributions with respect to such Member's Units, shall be permitted and shall not constitute a Transfer subject to the right of first refusal provisions of herein. Further, the assignee of financial rights with respect to Units shall not become a Member or be treated as a holder of such Units, and the Company shall continue to treat the Member making such assignment as a Member and holder of such Units for all purposes under this Agreement.

DISSOLUTION AND TERMINATION

Dissolution. The Company shall be dissolved upon the occurrence of any of the following events:

unanimous written consent of the Members;

the entry of a decree of judicial dissolution of the Company under the Act; or

a Deadlock of the Members is not resolved within 30 days of the Deadlock's commencement.

The Company shall not be dissolved upon the death, incompetency, retirement, resignation, expulsion, dissolution or bankruptcy of a Member, unless such an event occurs at a time when the Company has only one other Member and, within ninety (90) days after such event, the remaining Member determines that it does not want to continue the business of the Company. If a Member who is an individual dies or a court of competent jurisdiction adjudges him to be incompetent to manage his or her person or his or her property, then such Member's executor, administrator, guardian, conservator, or other legal representative may exercise all of the Member's rights for the purpose of settling his or her estate or administering his or her property, subject to the terms and conditions of this Agreement.

Winding Up, Liquidation and Distribution of Assets

Upon dissolution, an accounting shall be made by the Company's independent accountants of the accounts of the Company and of the Company's assets, liabilities and operations, from the date of the last previous accounting until the date of dissolution. The Members shall then promptly proceed to wind up the affairs of the Company.

If the Company is dissolved and its affairs are to be wound up, the Members are directed to:

sell or otherwise liquidate such of the Company's assets as may be required to discharge all liabilities of the Company, including liabilities to Members who are creditors, to the extent otherwise permitted by law, other than liabilities to Members for distributions, and establish such reserves as may be reasonably necessary to provide for contingent liabilities of the Company (for purposes of determining the Capital Accounts of the Members, the amounts of such reserves shall be deemed to be an expense of the Company);

distribute the remaining assets to the Members on a pro-rata basis, in accordance with their respective Units, such distributions to be made either in cash or in kind, as determined by the Members, with any assets distributed in kind being valued for this purpose at their fair market value as determined by the Members; and

allocate any Profit or Loss resulting from such sales to the Capital Accounts.

Notwithstanding anything to the contrary in this Agreement, upon a liquidation within the meaning of Treasury Regulation §1.704-1(b)(2)(ii)(g), if any Member has a deficit Capital Account (after giving effect to all contributions, distributions, allocations and other Capital Account adjustments for all taxable years, including the year during which such liquidation occurs), such Member shall have no obligation to make any Capital Contribution, and the negative balance of such Member's Capital Account shall not be considered a debt owed by such Member to the Company or to any other Person for any purpose whatsoever.

The Members shall comply with all requirements of applicable law pertaining to the winding up of the affairs of the Company and the final distribution of its assets, including filing a Certificate of Cancellation upon the completion of the winding up process.

Return of Contribution Nonrecourse to Other Members. Except as provided by law or as expressly provided in this Agreement, upon dissolution, each Member shall look solely to the assets of the Company for the return of such Member's Capital Contribution. If the Company Property remaining after the payment or discharge of the debts and liabilities of the Company is insufficient to return the Capital Contribution of one or more Members in accordance with this Agreement, such Member or Members shall have no recourse against any other Member.

EXCULPATION AND INDEMNIFICATION

Exculpation of Covered Persons.

Covered Persons. As used herein, the term "***Covered Person***" shall mean (i) each Member, and (ii) each Officer, employee, agent or representative of the Company.

Standard of Care. No Covered Person shall be liable to the Company or any other Covered Person for any loss, damage or claim incurred by reason of any action taken or omitted to be taken by such Covered Person in good faith and with the belief that such action or omission is in, or not opposed to, the best interest of the Company, so long as such action or omission does not constitute fraud, gross negligence or willful misconduct by such Covered Person.

Good Faith Reliance. A Covered Person shall be fully protected in relying in good faith upon the records of the Company and upon such information, opinions, reports or statements (including financial statements and information, opinions, reports or statements as to the value or amount of the assets, liabilities, Profits or Losses of the Company or any facts pertinent to the existence and amount of assets from which distributions might properly be paid) of the following Persons or groups: (i) another Member; (ii) one or more Officers or employees of the Company; (iii) any attorney, independent accountant, appraiser or other expert or professional employed or engaged by or on behalf of the Company; or (iv) any other Person selected in good faith by or on behalf of the Company, in each case as to matters that such relying Person reasonably believes to be within such other Person's professional or expert competence. The preceding sentence shall in no way limit any Person's right to rely on information to the extent provided in the Act.

MISCELLANEOUS PROVISIONS

Notices. All notices and communications required or permitted to be given hereunder (a) shall be in writing; (b) shall be sent by messenger, certified or registered U.S. mail, a reliable express delivery service, or electronic mail, charges prepaid as applicable, to the appropriate address(es) or number(s) set forth on **Schedule A** to this Agreement (or such other address as such party may designate by notice to all other parties hereto); and (c) shall be deemed to have been given on the date of receipt by the addressee (or, if the date of receipt is not a business day, on the first business day after the date of receipt), as evidenced by (A) a receipt executed by the addressee (or a responsible person in his or her office or member of his or her household) or a notice to the effect that such addressee refused to accept such communication, if sent by messenger, U.S. mail or express delivery service, (B) confirmation of a facsimile transmission (either orally or by written confirmation) or (C) a receipt of such e-mail confirmed by reply message or read receipt. All parties shall act in good faith to promptly confirm receipt of communications where confirmation of receipt is required to effect notice pursuant to this subsection and is requested by the notifying party.

Waiver of Action for Partition. No Member or permitted assignee shall have the right to require a partition of all or a portion of the Company Property, and by signing this Agreement or a joinder hereto or counterpart hereof, each Member or permitted assignee irrevocably waives any right to maintain an action for partition of the Company Property.

Further Assurances. Each of the Members shall hereafter execute and deliver such further instruments and do such further acts and things consistent with the provisions of this Agreement as may be required or useful to carry out the full intent and purpose of this Agreement or as may be necessary to comply with any laws, rules or regulations.

Waivers. No party's undertakings or agreements contained in this Agreement shall be deemed to have been waived unless such waiver is made by an instrument in writing signed by an authorized representative of such Member. Failure of a party to insist on strict compliance with the provisions of this Agreement shall not constitute waiver of that party's right to demand later compliance with the same or other provisions of this Agreement. A waiver of a breach of this Agreement will not constitute a waiver of the provision itself or of any subsequent breach,

or of any other provision of this Agreement.

Rights and Remedies Cumulative; Creditors. The rights and remedies provided by this Agreement are cumulative, and the use of any one right or remedy by any party shall not preclude or waive the right to use any other remedy. Said rights and remedies are given in addition to any other legal rights the parties may have. None of the provisions of this Agreement shall be for the benefit of or enforceable by any creditors of the Company or of the Members.

Construction. The headings in this Agreement are inserted solely for convenience of reference and are in no way intended to describe, interpret, define, or limit the scope, extent or intent of this Agreement or any provision hereof. When the context in which words are used in this Agreement indicates that such is the intent, singular words shall include the plural and vice versa and masculine words shall include the feminine and the neuter genders and vice versa.

Amendment. This Agreement may be altered or amended only by the unanimous consent of the Members.

Severability. If any provision of this Agreement or the application thereof to any Person or circumstance shall be invalid, illegal or unenforceable to any extent, the remainder of this Agreement and the application thereof shall not be affected and shall be enforceable to the fullest extent permitted by law.

Heirs, Successors and Assigns. Each and all of the covenants, terms, provisions and agreements herein contained shall be binding upon and inure to the benefit of the parties hereto and, to the extent permitted by this Agreement, their respective heirs, legal representatives, successors and assigns.

Governing Law. This Agreement is made under and shall be governed by and construed in accordance with the laws of the Commonwealth of Massachusetts, without regard to its rules on conflicts of laws, and specifically the Act.

No Prior Operating Agreements. This Agreement shall expressly supersede and replace any and all prior operating agreements. The signatures of the Members to this Agreement shall constitute an action by unanimous written consent authorizing the repeal and replacement of any prior operating agreements to the extent that such an action is required pursuant to any such agreements' own terms.

Dispute Resolution. The parties hereto agree that any suit or proceeding arising out of this Agreement shall be brought only in the courts of the Commonwealth of Massachusetts; *provided, however*, that no party waives its right to request removal of such action or proceeding from the state court to a federal court. Each party hereto consents to the personal jurisdiction of such courts and agrees that service of process in any such suit or proceeding will be sufficiently accomplished if accomplished in accordance with the notice provisions set forth in the Agreement.

Code and Treasury Regulation References. Any reference to a section of the Code or a Treasury Regulation in this Agreement shall be deemed to refer to corresponding provisions of subsequent superseding federal revenue laws and regulations in the event that the section of the Code or Treasury Regulation so referenced has been so superseded.

Counterparts. This Agreement may be executed in any number of counterparts and may be executed and delivered by facsimile or other electronic transmission. Each such counterpart shall be deemed to be an original instrument, but all such counterparts together shall constitute one agreement.

[Signature Page Follows]

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date first set forth above.

COMPANY:

G7 LABS LLC

By:_____

Shankar P. Gautam

Member and Manager

By:_____

Pratima Bhattarai

Member

SCHEDULE A

OPERATING AGREEMENT

OF

G7 LABS LLC

CAPITALIZATION TABLE

Name	Capital Contribution	Units	% Management Interest	% Economic Interest
Shankar P. Gautam	$61,510.00	600,000	60	60
Pratima Bhattarai	$41,006.00	400,000	40	40

SCHEDULE B

OPERATING AGREEMENT

OF

G7 LAB LLC

DEFINITIONS

The following terms shall have the following meanings when used in this Agreement:

"*Act*" means the applicable law of the Commonwealth of Massachusetts governing limited liability companies organized in Massachusetts, the Massachusetts Limited Liability Company Act, *et seq*, and any successor statute, as it may be amended from time to time.

"*Affiliate*" shall mean any other Person that directly or indirectly Controls or is Controlled by or is under common Control with such Person, or any Person that is an employee of or an officer of or partner in or serves in a similar capacity or relationship with respect to a Person.

"*Agreed Value*" means the fair market value of any Units at issue, as mutually agreed to by the parties selling and purchasing Units, or in the absence of such mutual agreement, determined in the following manner:

Each party will obtain its own appraiser to conduct an appraisal, the cost of which will be borne by such party. If the two appraisals are within 10% of each other, the average of those appraisals will be the fair market value. If the two appraisals are more than 10% apart, then the two appraisers will hire a third appraiser, the cost of which will be split equally between the two parties, to obtain a third appraisal and the average of the two appraisals that are closest in amount will be the fair market value. Any appraisal will be based upon the value of the entire Company sold to a single buyer in a single transaction for cash and shall include discounts for illiquidity or lack of control but shall not include any premium for control.

"*Available Cash*" means the cash held by or immediately available to, the Company less such reserves for capital expenditures or other liabilities or other purposes as the Members, in their sole discretion, may determine.

"*Bankruptcy*" means, with respect to a Member, the occurrence of any of the following: (a) the filing of an application by such Member for, or a consent to, the appointment of a trustee of such Member's assets, (b) the filing by such Member of a voluntary petition in bankruptcy or the filing of a pleading in any court of record admitting in writing such Member's inability to pay its debts as they come due, (c) the making by such Member of a general assignment for the benefit of such Member's creditors, (d) the filing by such Member of an answer admitting the material allegations of, or such Member's consenting to, or defaulting in answering a bankruptcy petition filed against such Member in any bankruptcy proceeding or (e) the expiration of sixty (60) days following the entry of an order, judgment or decree by any court of competent jurisdiction adjudicating such Member a bankrupt or appointing a trustee of such

Member's assets.

"***Capital Account***" as of any given date shall mean the amount set forth on **Schedule A** as adjusted.

"***Capital Contribution***" shall mean any contribution to the capital of the Company in cash or property by a Member or predecessor thereof whenever made.

"***Certificate of Organization***" shall mean the Certificate of Organization of the Company as filed with the Massachusetts Secretary of the Commonwealth on August 27, 2019, as amended from time to time.

"***Code***" shall mean the Internal Revenue Code of 1986, as amended from time to time, or corresponding provisions of subsequent superseding federal revenue laws.

"***Company Property***" means real and personal property owed, acquired by, or contributed to the Company and any improvements thereto, and shall include both tangible and intangible property.

"***Control***" means the possession, directly or indirectly, of the power to direct the management and policies of a Person, whether through the ownership of voting securities, contract or otherwise.

"***Decedent***" shall mean an individual Member who has died.

"***Entity***" shall mean any general partnership, limited partnership, limited liability partnership, limited liability company, corporation, joint venture, trust, business trust, cooperative, association, foreign trust, foreign business organization or other business entity.

"***Family***", as applied to any individual, shall mean (a) the children of such individual (by birth or adoption), (b) the parents, spouse and siblings of such individual, (c) the children of the siblings of such individual, (d) any trust solely for the benefit of, or any partnership, limited liability company or other entity owned solely by, any one or more of such aforementioned individuals (so long as such individuals have the exclusive right to Control such trust or other entity) and (e) the estate of such individual.

"***Fiscal Year***" shall mean the period terminating on December 31 of each year during the term hereof or on such earlier date in any year in which the Company shall be dissolved as provided herein.

"***Losses***" shall mean the net losses of the Company for federal income tax purposes, as determined separately, and not cumulatively, for each Fiscal Year of the Company or other relevant period, after appropriate adjustment for items otherwise allocated, if any, pursuant to this Agreement.

"***Majority in Interest***" of Members shall mean one or more Members whose combined Percentage Interests of a given class of Units exceed fifty percent (50%) of all Percentage Interests of Units owned by all Members of the same class of Units. The Company shall initially have one class of Units, with additional classes created or removed only in accordance with the

procedures provided herein for the issuance of new Units.

"***Member***" shall mean each of the parties who executes a counterpart of this Agreement as a Member, and each of the parties who may hereafter become a Member pursuant to the terms and conditions of this Agreement.

"***Percentage Interest***" of Units or of Members shall mean the number of Units of a given class held at a particular time by such Member, divided by the total number of all Units of the same class then held by all Members, expressed as a percentage.

"***Person***" shall mean any individual or Entity, and the heirs, executors, administrators, legal representatives, successors and assigns of such Person, where the context so permits.

"***Profits***" shall mean the net profits of the Company for federal income tax purposes, as determined separately, and not cumulatively, for each Fiscal Year of the Company or other relevant period, after appropriate adjustment for items otherwise allocated, if any, pursuant to this Agreement.

"***Tax Items***" means Profits and Losses and items of income, gain, loss, deduction and credit of the Company as determined for federal, state and local income tax purposes.

"***Treasury Regulations***" shall include proposed, temporary and final regulations promulgated under the Code.

"***Unit***" shall mean those interests in the Company that shall have (a) economic value and rights in or to the profits, gains, losses, distributions and other economic interests of the Company and/or (b) voting membership rights in the Company.

EXHIBIT I

The Commonwealth of Massachusetts
Secretary of the Commonwealth
State House, Boston, Massachusetts 02133

William Francis Galvin
Secretary of the
Commonwealth

March 16, 2020

TO WHOM IT MAY CONCERN:

I hereby certify that a certificate of organization of a Limited Liability Company was filed in this office by

G7 LAB LLC

in accordance with the provisions of Massachusetts General Laws Chapter 156C on **February 18, 2019.**

I further certify that said Limited Liability Company has filed all annual reports due and paid all fees with respect to such reports; that said Limited Liability Company has not filed a certificate of cancellation; that there are no proceedings presently pending under the Massachusetts General Laws Chapter 156C, § 70 for said Limited Liability Company's dissolution; and that said Limited Liability Company is in good standing with this office.

I also certify that the names of all managers listed in the most recent filing are: **SHANKAR GAUTAM**

I further certify, the names of all persons authorized to execute documents filed with this office and listed in the most recent filing are: **SHANKAR GAUTAM, PRATIMA BHATTARAI**

The names of all persons authorized to act with respect to real property listed in the most recent filing are: **SHANKAR PRASAD GAUTAM**

In testimony of which,
I have hereunto affixed the
Great Seal of the Commonwealth
on the date first above written.

William Francis Galvin

Secretary of the Commonwealth

Processed By:KMT

EXHIBIT J

The Commonwealth of Massachusetts
William Francis Galvin

Minimum Fee: $500.00

Secretary of the Commonwealth, Corporations Division
One Ashburton Place, 17th floor
Boston, MA 02108-1512
Telephone: (617) 727-9640

Annual Report
(General Laws, Chapter)

Identification Number: 001369282

Annual Report Filing Year: 2020

1.a. Exact name of the limited liability company: G7 LAB LLC

1.b. The exact name of the limited liability company *as amended*, is: G7 LAB LLC

2a. Location of its principal office:

No. and Street: 160 AYER RD
UNIT 3
City or Town: LITTLETON State: MA Zip: 01460 Country: USA

2b. Street address of the office in the Commonwealth at which the records will be maintained:

No. and Street: 160 AYER RD
UNIT 3
City or Town: LITTLETON State: MA Zip: 01460 Country: USA

3. The general character of business, and if the limited liability company is organized to render professional service, the service to be rendered:

ANALYTICAL LABORATORY TESTING SERVICES.

4. The latest date of dissolution, if specified:

5. Name and address of the Resident Agent:

Name: SHANKAR P. GAUTAM
No. and Street: 99 POND AVE
408 D
City or Town: BROOKLINE State: MA Zip: 02445 Country: USA

6. The name and business address of each manager, if any:

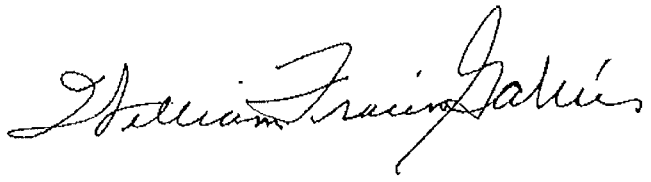
Title	Individual Name First, Middle, Last, Suffix	Address (no PO Box) Address, City or Town, State, Zip Code
MANAGER	SHANKAR GAUTAM	160 AYER RD LITTLETON, MA 01460 USA

7. The name and business address of the person(s) in addition to the manager(s), authorized to execute documents to be filed with the Corporations Division, and at least one person shall be named if there are no managers.

THE COMMONWEALTH OF MASSACHUSETTS

I hereby certify that, upon examination of this document, duly submitted to me, it appears that the provisions of the General Laws relative to corporations have been complied with, and I hereby approve said articles; and the filing fee having been paid, said articles are deemed to have been filed with me on:

February 14, 2020 10:04 AM



WILLIAM FRANCIS GALVIN

Secretary of the Commonwealth

EXHIBIT K

Binding Letter of Intent to Lease Property

LANDLORD:	Athena Assets, LLC, 160 Ayer Road, Unit 1, Littleton, MA 01460
TENANT:	G7Lab LLC
USE:	Cannabis testing laboratory
PREMISES:	160 Ayer Road, Littleton, Unit 2, MA 01460, approximately 3,215 sf (Landlord may substitute Unit #3 or Unit #4 under the same terms and conditions)
BASE TERM:	Seven Years
BASE RENT:	Years 1-2 $7NNN Years 3-4 $9NNN Years5-7 $12NNN Triple nets include Real Estate Taxes, Insurance, and CAM and will be approximately $4/sf.
ADDITIONAL TERMS:	Two additional five-year options with six (6) months prior written notice provided by tenant. Tenant may enter the unit during the option period only for the purpose of preparing testing equipment for inspection by the state licensing/approval agencies. During this occupancy period, tenant shall be responsible for all utility expenses.
SECURITY DEPOSIT:	Tenant agrees to provide a security deposit of first and last month's rent provided upon execution of a valid lease agreement.
DELIVERY:	Landlord shall deliver the space vacant and broom clean, with HVAC, plumbing and utilities in good working order.
IMPROVEMENTS:	Tenant shall have the right to complete at their expense improvements necessary to meet both State and Municipal requirements for a cannabis testing laboratory provided that construction will meet all applicable building and zoning codes and regulations. Tenant agrees to acquire Landlord approval for any build out made to the interior of the property for use as a cannabis testing laboratory which approval shall not be unreasonably withheld.
OPTION PERIOD/DUE DILIGENCE:	Following full execution of this LOI (the "**Option Period**"), Tenant shall have the exclusive right and option to lease the Premises from the Landlord (the "**Option to Lease**") for ninety days. During the Option Period, Tenant will conduct due diligence to obtain local and State approvals to operate a cannabis testing laboratory on the premises from the Town of Littleton, the DPH (Department of Public Health), and the CCC (Cannabis Control Commission). Tenant will require both City and State approvals to execute a valid lease agreement. Tenant shall pay a fee of $2,000 per month at the start of the option period.
OPTION EXTENSION/	

Binding Letter of Intent to Lease Property

OPTION PAYMENTS:	If after the initial 90-day approval period Tenant has not obtained all City and State approvals necessary for its use an extension will be provided by Landlord at a cost of $2,000 per month (non-refundable). This extension will be provided on a month to month basis but extend no longer than 9 months and will be due and payable on the first of each month beginning on the first of the month following the initial option period (the "**Extension Period**"). Tenant agrees to pay Landlord the aforementioned monthly sum for Extended Due Diligence/Option to Lease the premises until execution of a valid lease agreement.
EXERCISE OF OPTION:	The Option to Lease described herein shall be exercised, if at all, upon written notice to Landlord given prior to expiration of the Option Period or Extension Period, if applicable.
TERMINATION:	This LOI may be terminated by Tenant at any time upon written notice to Landlord given during the Option Period or Extension Period.
LEASE AGREEMENT:	When all necessary local and State approvals have been obtained for Tenant's proposed use, Tenant and Landlord shall negotiate and execute a binding lease agreement. Lease form will be provided by Tenant. Said lease shall include all of the conditions and terms set forth in this letter of intent and such other customary and reasonable terms and conditions. Landlord & Tenant will work in good faith to execute the lease within 30 days following notice by Tenant to Landlord that all necessary approvals have been obtained.
SUB-LET OPTION:	Tenant will have the option to assign the lease for this property with prior written approval provided by Landlord (not to be unreasonably withheld) after review of prospective use and Tenant information.
RENT COMMENCEMENT:	Upon Lease Commencement
UTILITIES:	Tenant is responsible for utilities that are specific to the leased space.
MAINTENANCE AND REPAIRS:	During the lease term the Landlord shall maintain, repair and replace the structural components of the building including but not limited to the roof, exterior walls, plumbing, and base building HVAC.
BROKER:	Landlord agrees that Victor Normand of Barrett Sotheby's International Realty. is the only broker of record for this transaction and any commission payable will be borne by Landlord under a separate agreement.
SIGNAGE:	Tenant at its expense shall be permitted the maximum allowed signage on the premises as specified by Town and State regulations.

This proposal is a binding agreement and is intended as a mutual expression of Landlord and Tenant's desire to negotiate in good faith with the intent of entering into a mutually satisfactory lease. Landlord agrees that upon signing of this LOI he/she will not market or offer the property to any other prospective Lessees or Buyers.

This proposal becomes null and void if not executed by June 15, 2019.

TENANT: _____ **Date:** 6/5/2019

Binding Letter of Intent to Lease Property

LANDLORD: Delisa Laterzo dotloop verified 06/06/19 10:44 AM EDT HQOF-WDVH-IOIN-YC3O

Owner

Date: _____

EXHIBIT L

Date:07/10/2020

Planning Board of Littleton MA
37 Shattuck St, Room 303
Littleton, MA 01460

Subject: For use or Storage of Chemicals and Materials

Dear Chair and Board Members:
All the waste generated from testing activities will be contained in a Satellite waste accumulation area within the laboratory until containers are full as per Massachusetts hazardous Waste regulation 310 CMR 30.340(6),30.351(4) and 30.353(6)(i). The containers will be placed on top of spill containment platform. Volatiles and organic waste will be separated into appropriate container as per OSAH standards and NFPA code 30 guidelines. The accumulated waste will be collected by a hazardous waste management vendor on a regular basis.

Since 160 Ayer road unit 3 Falls under Water resource District according to Littleton zoning. The following is a list of chemicals with its hazard classification and containment method the lab intends to put in place. The MSDS / SDS for all the chemicals listed are attached.

Name	CAS#	Hazard Classification	Containment Method
Acetonitrile	75-05-8	Flammable liquid and vapor	Stored in flammable liquid storage cabinet Meeting NFPS Liquid code 30, OSHA standard 1910.06
Methanol	67-56-1	Flammable liquid and vapor	Stored in flammable liquid storage cabinet Meeting NFPA Liquid code 30, OSHA standard 1910.06
Formic Acid	64-18-6	Flammable liquid	Stored in flammable liquid storage cabinet Meeting NFPA Liquid code 30, OSHA standard 1910.06
Nitric Acid	7697-37-2	Oxidizing liquids	Stored in a liquid storage cabinet meeting NFPA code 30, and OSHA requirement. Stored

Name	CAS#	Hazard Classification	Containment Method
			separately from flammable liquids
Ammonium formate	540-69-2	Irritant	Stored in a cool, dry, well-ventilated area away from incompatible substances. protected from moisture.
Phosphoric Acid	7664-38-2	Causes burns by all exposure routes	Stored in a cool, dry place. Stored in a tightly closed container. Corrosives area. Not stored in metal containers.
Hydrochloric acid	7647-01-0	Hazardous. See SDS	Stored in Cool, dry place. Not stored in metal container. Stores separately from oxidizers and alkalis.
Hydrogen peroxide 30%	7722-84-1	Strong oxidizer	Store protected from light. Keep away form alkalies, oxidizable materials, finely divided metals, alcohols, and permanganates. Store only in light-resistent containers fitted with a safety vent.
Triton-X 100	9002-93-1	Harmful if swallowed Causes serious eye damage	Store in a cool, dry place. Store in a tightly closed container. Corrosives area. Do not store in metal containers.

Thank you!
Shankar Gautam.
G7 lab LLC
160 Ayer Road, unit 3
Littleton, MA 01460

Material Safety Data Sheet
Acetonitrile

ACC# 00170

Section 1 - Chemical Product and Company Identification

MSDS Name: Acetonitrile
Catalog Numbers: AC149520000, AC149520010, AC149520025, AC149520050, AC149520250, AC149525000, AC167650000, AC258560000, AC258560010, AC258560025, AC258560051, AC268260000, AC268260010, AC268270000, AC268270010, AC325730000, AC325730010, AC325730025, AC326680000, AC326680010, AC326680025, AC326750000, AC326750010, AC326750025, AC326810000, AC326810010, AC326811000, AC326812500, AC364310000, AC364310010, AC364311000, AC364315000, AC400130000, AC400132500, AC423250000, AC423250010, AC423255000, AC610130040, AC61022019, AC61022019, AC61022050, AC61022115, AC61022115, AC61022200, AC61022200, AC610500190, AC610500500, AC610501150, AC610502000, AC610700190, AC610700500, AC610701150, AC610702000, 16765-0010, 16765-2500, 26826-0025, 26827-0025, 26827-0040, 61001-0040, 61022-0010, 61022-1000, 61096-1000, 61110-0500, 61514-0025, A21-1, A21-20, A21-200, A21-4, A21200LC, A21FB115, A21FB19, A21FB200, A21FB50, A21RB115, A21RS-50, A21RS115, A21RS19, A21RS200, A21RS28, A955-1, A955-4, A9931, A993RS-19, A996-1, A996-4, A9964LC, A996J1, A996N2-19, A996RS-115, A996RS-200, A996RS-28, A996RS-50, A996SK-4, A996SS-115, A996SS-19, A996SS-200, A996SS28, A996SS50, A998-1, A998-212, A998-4, A99818, A9984LC, A998J1, A998N1-19, A998N2-19, A998POP-50, A998RS-115, A998RS-19, A998RS-200, A998RS-28, A998RS-50, A998SK-1, A998SK-4, A998SS-115, A998SS-200, A998SS-28, A998SS-50, A999-4, BP1165-50, BP1170-4, BP1170-450, BP1170N1-19, BP1170N2-19, BP1170POP-200, BP1170POP-50, BP1170POP20, BP1170RS-115, BP1170RS-1350, BP1170RS-19, BP1170RS-200, BP1170RS-28, BP1170RS-50, BP1170SS-115, BP1170SS-1350, BP1170SS-200, BP1170SS-30, BP1170SS-50, BP2405-1, BP2405-4, BP2405SK-1, BP2405SK-4, BP2600-100, NC9173153, NC9229342, NC9234885, NC9239862, NC9445091, NC9574352, NC9585208, NC9638863, NC9647795, NC9677816, NC9708859, O1034-500, PS03490, PS03491
Synonyms: Cyanomethane; Ethanenitrile; Ethyl nitrile; Methyl cyanide; Methanecarbonitrile.
Company Identification:

Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410

For information, call: 201-796-7100
Emergency Number: 201-796-7100
For CHEMTREC assistance, call: 800-424-9300
For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
75-05-8	Acetonitrile	100	200-835-2

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: clear, colorless liquid. Flash Point: 2 deg C.
Warning! Flammable liquid and vapor. Causes eye irritation. May be harmful if swallowed, inhaled, or absorbed through the skin. May cause skin and respiratory tract irritation. Metabolized to cyanide in the body, which may cause headache, dizziness, weakness, unconsciousness, convulsions, coma and possible death. May cause liver and kidney damage.
Target Organs: Kidneys, central nervous system, liver, respiratory system, cardiovascular system, eyes.

Potential Health Effects
Eye: Causes eye irritation. Lachrymator (substance which increases the flow of tears). May produce superficial reversible injury.
Skin: Causes mild skin irritation. If absorbed, causes symptoms similar to those of inhalation. May be harmful if absorbed through the skin. May be metabolized to cyanide which in turn acts by inhibiting cytochrome oxidase impairing cellular respiration. A Skin notation is recommended based upon the case report of child poisoning from dermal contact. A LD50 >2000 mg/kg was obtained in a well-conducted acute dermal toxicity study in rabbits.
Ingestion: May cause tissue anoxia, characterized by weakness, headache, dizziness, confusion, cyanosis (bluish skin due to deficient oxygenation of the blood), weak and irregular heart beat, collapse, unconsciousness, convulsions, coma and death. Metabolism may release cyanide, which may result in headache, dizziness, weakness, collapse, unconsciousness and possible death. Different animal species and individuals of the same species varied widely in susceptibility to acetonitrile in single-dose toxicity studies by various routes. The range of oral LD50 values for acetonitrile in mammals is between 140 - 6762 mg/kg body weight. Mouse and guinea pig seem to be the most sensitive species. In a well-conducted study in mice, the oral LD50 of acetonitrile was calculated to be 617 mg/kg.
Inhalation: May cause respiratory tract irritation. May cause lung damage. May be harmful if inhaled. Acetonitrile breaks down slowly in the body to release the cyanide ion. Exposure to very high concentrations of acetonitrile can result in cyanide poisoning. Symptoms are usually delayed several hours after exposure. Early symptoms include weakness, headache, giddiness, dizziness, confusion, anxiety, nausea and vomiting. In severe cases, breathing is rapid, then becomes slow and gasping. The victim may feel an irregular heart beat and tightness in the chest.
Chronic: May be metabolized to cyanide which in turn acts by inhibiting cytochrome oxidase impairing cellular respiration. Exposure to small amounts of cyanide compounds over long periods of time is reported to cause loss of appetite, headache, weakness, nausea, dizziness, and symptoms of irritation of the upper respiratory tract and eyes. Animal studies indicate that the product may affect the liver and kidneys. Animal evidence for acetonitrile and other cyanide compounds clearly indicates that toxic effects would be expected in the fetus at exposure levels which are toxic to the

Section 4 - First Aid Measures

Eyes: In case of contact, immediately flush eyes with plenty of water for a t least 15 minutes. Get medical aid.
Skin: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid immediately. Wash clothing before reuse.
Ingestion: If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.
Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If

breathing is difficult, give oxygen. Get medical aid.
Notes to Physician: Exposure should be treated as a cyanide poisoning. Effects may be delayed. For methemoglobinemia, administer oxygen alone or with Methylene Blue depending on the methemoglobin concentration in the blood. May be partially metabolized to cyanide in the body.
Antidote: Always have a cyanide antidote kit on hand when working with cyanide compounds. Get medical advice to use. Methylene blue, alone or in combination with oxygen is indicated as a treatment in nitrite induced methemoglobinemia.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Use water spray to keep fire-exposed containers cool. Flammable liquid and vapor. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas.
Extinguishing Media: Use water spray, dry chemical, carbon dioxide, or appropriate foam.
Flash Point: 2 deg C (35.60 deg F)
Autoignition Temperature: 524 deg C (975.20 deg F)
Explosion Limits, Lower:3.0 vol %
Upper: 16.00 vol %
NFPA Rating: (estimated) Health: 2; Flammability: 3; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Remove all sources of ignition. Provide ventilation. Evacuate unnecessary personnel. Approach spill from upwind.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Ground and bond containers when transferring material. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Keep away from heat, sparks and flame. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Use only with adequate ventilation. Avoid breathing vapor or mist.
Storage: Keep away from sources of ignition. Store in a tightly closed container. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area. Store protected from moisture.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use explosion-proof ventilation equipment. Facilities storing or utilizing

this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Acetonitrile	20 ppm TWA; Skin - potential significant contribution to overall exposure by the cutaneous r oute	20 ppm TWA; 34 mg/m3 TWA 500 ppm IDLH	40 ppm TWA; 70 mg/m3 TWA

OSHA Vacated PELs: Acetonitrile: 40 ppm TWA; 70 mg/m3 TWA

Personal Protective Equipment

Eyes: Wear chemical splash goggles.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Liquid

Appearance: clear, colorless

Odor: sweetish odor - ethereal odor

pH: Not available.

Vapor Pressure: 88.8 mm Hg @ 25 deg C

Vapor Density: 1.42 (air=1)

Evaporation Rate:5.79 (Butyl acetate=1)

Viscosity: 0.36 cP 20 deg C

Boiling Point: 81.6 deg C @ 760 mmHg

Freezing/Melting Point:-45 deg C

Decomposition Temperature:> 500 deg C

Solubility: Soluble.

Specific Gravity/Density:.7810g/cm3

Molecular Formula:C2H3N

Molecular Weight:41.05

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Ignition sources, excess heat, exposure to moist air or water.

Incompatibilities with Other Materials: Strong oxidizing agents, strong reducing agents, strong acids.

Hazardous Decomposition Products: Hydrogen cyanide, nitrogen oxides, carbon monoxide, carbon dioxide.

Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#:
CAS# 75-05-8: AL7700000
LD50/LC50:
CAS# 75-05-8:
Draize test, rabbit, eye: 100 uL/24H Moderate;
Inhalation, mouse: LC50 = 2693 ppm/1H;
Inhalation, rabbit: LC50 = 2828 ppm/4H;
Inhalation, rat: LC50 = 7551 ppm/8H;
Oral, mouse: LD50 = 269 mg/kg;
Oral, rabbit: LD50 = 50 mg/kg;
Oral, rat: LD50 = 2460 mg/kg;
Skin, rabbit: LD50 = >2 gm/kg;

In a well-conducted study in mice, the oral LD50 of acetonitrile was calculated to be 617 mg/kg.
Carcinogenicity:
CAS# 75-05-8: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: Three volunteers were exposed for 4 hours at 40, 80, or 160 ppm acetonitrile. At 40 ppm, odor was detected, after which olfactory fatigue was noted. At this concentration, 2 persons had no signs of response, including no appreciable blood or urinarycyanide or thiocyanate. The third person experienced slight tightness in the chest that evening. A sensation of cooling in the lungs was observed and persisted for 24 hours. Traces of urinary thiocyanate were recorded.
Teratogenicity: In most of the available assays, teratogenicity was associated with maternal toxicity. In a well-conducted study, rats exposed by inhalation to acetonitrile did not result in significant fetal effects, even at concentrations which were overtly toxic tothe dam. In this study, a maternal NOAEL of 1200 ppm and NOAEL of 1200 ppm with respect to developmental toxicity were established. A case-control study of pregnancy outcome among Finnish lab workers revealed no association between exposure toacetonitrile and increased risk of spontaneous abortion in mothers, or malformation and birth weight in their children.
Reproductive Effects: In relation to fertility, there is no information available in humans and there are no animal studies specifically investigating such effects. However, no changes were seen in weight of the right cauda or right testis and no effect on sperm motility inrats or mice exposed for 13 weeks with 100, 200 and 400 ppm to acetonitrile.
Mutagenicity: See actual entry in RTECS for complete information.
Neurotoxicity: No information available.
Other Studies:

Section 12 - Ecological Information

Ecotoxicity: Fish: Fathead Minnow: 1150 ppm; 24 Hr; TLm (hard water)Fish: Fathead Minnow: 1000 mg/L; 96 Hr; TLm (soft water)Fish: Bluegill/Sunfish: 1850 mg/L; 96 Hr; TLm (soft water) Fish: Fathead Minnow: 1640 mg/L; 96 Hr; LC50 (flow-bioassay)Fish: Fathead Minnow: 1640 mg/L; 96 Hr; EC50 (flow-bioassay) No data available.
Environmental: Estimated Koc value = 16. Acetonitrile is expected to weakly adsorb to most soils based on the Koc value. Volatilization from soil surfaces and leaching into ground water is expected to be significant. Estimated BCF value = 0.3. This value indicates that acetonitrile will not significantly bioconcentrate in aquatic organisms or adsorb to suspended solids and sediments in water. Acetonitrile is unreactive towards photochemically-generated free radicals and direct photolysis in the gaseous phase.

Physical: No information available.
Other: Biodegradable.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA P-Series: None listed.
RCRA U-Series:
CAS# 75-05-8: waste number U003 (Ignitable waste, Toxic waste).

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	ACETONITRILE	ACETONITRILE
Hazard Class:	3	3
UN Number:	UN1648	UN1648
Packing Group:	II	II
Additional Info:		FLASHPOINT 6 C

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 75-05-8 is listed on the TSCA inventory.
Health & Safety Reporting List
CAS# 75-05-8: Effective 10/4/82, Sunset 10/4/92
Chemical Test Rules
CAS# 75-05-8: 40 CFR 799.5115
Section 12b
CAS# 75-05-8: Section 4, 1 % de minimus concentration
TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.
CERCLA Hazardous Substances and corresponding RQs
CAS# 75-05-8: 5000 lb final RQ; 2270 kg final RQ
SARA Section 302 Extremely Hazardous Substances
None of the chemicals in this product have a TPQ.
SARA Codes
CAS # 75-05-8: immediate, delayed, fire.
Section 313
This material contains Acetonitrile (CAS# 75-05-8, 100%),which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.
Clean Air Act:
CAS# 75-05-8 is listed as a hazardous air pollutant (HAP).
This material does not contain any Class 1 Ozone depletors.
This material does not contain any Class 2 Ozone depletors.
Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 75-05-8 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

XN F

Risk Phrases:

R 11 Highly flammable.
R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
R 36 Irritating to eyes.

Safety Phrases:

S 16 Keep away from sources of ignition - No smoking.
S 36/37 Wear suitable protective clothing and gloves.

WGK (Water Danger/Protection)

CAS# 75-05-8: 2

Canada - DSL/NDSL

CAS# 75-05-8 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of B2, D1B, D2B.
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

CAS# 75-05-8 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 4/23/1999
Revision #16 Date: 2/28/2008

Material Safety Data Sheet
Methanol

ACC# 14280

Section 1 - Chemical Product and Company Identification

MSDS Name: Methanol
Catalog Numbers: AC167830000, AC167830025, AC167835000, AC176840000, AC176840010, AC176840025, AC176840250, AC176845000, AC177150000, AC177150050, AC177150051, AC177150250, AC177150251, AC268280000, AC268280010, AC325740000, AC325740010, AC325740025, AC326630000, AC326630010, AC326630025, AC326950000, AC326950010, AC326951000, AC326952500, AC327900000, AC327900010, AC364390000, AC364390010, AC364391000, AC364395000, AC413770000, AC413770040, AC423950000, AC610200040, AC61040019, AC61040050, AC61040050, AC61040115, AC61040115, AC61040200, AC611070040, AC615130025, 17715-0010, 17715-0025, 19123467, 26828-0025, 41377-5000, 42395-0010, 42395-0040, 42395-0200, 42395-5000, 61009-0040, 61040-0010, 61040-1000, 61098-1000, A408-1, A408-4, A408-4LC, A408SK-4, A411-20, A411-4, A412-1, A412-20, A412-200, A412-200LC, A412-4, A412-4LC, A412-500, A412200-001, A412CU-1300, A412FB-200, A412FB115, A412FB19, A412FB50, A412P-4, A412POP19, A412POPB-200, A412RB-200, A412RB-50, A412RB115, A412RS-200, A412RS115, A412RS19, A412RS28, A412RS50, A412SK-4, A412SS-115, A413-20, A413-200, A413-4, A413-500, A433P-4, A433S-20, A433S-200, A433S-4, A434-20, A450-4, A452-1, A452-4, A452-4LC, A452N1-19, A452N2-19, A452POP-200, A452POP50, A452RS-115, A452RS-19, A452RS-200, A452RS-28, A452RS-50, A452SK-1, A452SK-4, A452SS-19, A452SS-200, A452SS-28, A452SS-50, A453-1, A453-1LC, A453-500, A454-1, A454-4, A454-4LC, A454RS-115, A454RS-200, A454RS-28, A454SK-4, A454SS-200, A454SS-28, A455-1, A456-1, A456-4, A457-4, A4574LC, A935-4, A935RB-200, A947-4, A947-4LC, A947POP-200, A947RS-115, A947RS-200, A947RS-28, A947SS-115, A947SS-200, A947SS-28, A947SS-50, BP1105-1, BP1105-4, BP1105SS19, BP1105SS28, HC4001GAL, NC9173853, NC9386568, NC9433033, NC9433739, NC9514454, NC9516446, NC9535777, NC9541632, NC9598497, NC9620421, NC9942270, S75965HPLC, SC95-1, SW2-1, TIA947-4, TIA947P-200L
Synonyms: Carbinol; Methyl alcohol; Methyl hydroxide; Monohydroxymethane; Wood alcohol; Wood naptha; Wood spirits; Columbian spirits; Methanol.
Company Identification:

Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410

For information, call: 201-796-7100
Emergency Number: 201-796-7100
For CHEMTREC assistance, call: 800-424-9300
For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
67-56-1	Methanol	> 99	200-659-6

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: APHA: 10 max clear liquid. Flash Point: 12 deg C.
Danger! Poison! May be fatal or cause blindness if swallowed. Vapor harmful. **Flammable liquid and vapor.** Harmful if swallowed, inhaled, or absorbed through the skin. Causes eye, skin, and respiratory tract irritation. May cause central nervous system depression. Cannot be made non-poisonous.
Target Organs: Eyes, nervous system, optic nerve.

Potential Health Effects
Eye: May cause painful sensitization to light. Methanol is a mild to moderate eye irritant. Inhalation, ingestion or skin absorption of methanol can cause significant disturbances in vision, including blindness.
Skin: Causes moderate skin irritation. May be absorbed through the skin in harmful amounts. Prolonged and/or repeated contact may cause defatting of the skin and dermatitis. Methanol can be absorbed through the skin, producing systemic effects that include visual disturbances.
Ingestion: May be fatal or cause blindness if swallowed. Aspiration hazard. Cannot be made non-poisonous. May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause systemic toxicity with acidosis. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure. May cause cardiopulmonary system effects.
Inhalation: Methanol is toxic and can very readily form extremely high vapor concentrations at room temperature. Inhalation is the most common route of occupational exposure. At first, methanol causes CNS depression with nausea, headache, vomiting, dizziness and incoordination. A time period with no obvious symptoms follows (typically 8-24 hrs). This latent period is followed by metabolic acidosis and severe visual effects which may include reduced reactivity and/or increased sensitivity to light, blurred, doubl and/or snowy vision, and blindness. Depending on the severity of exposure and the promptness of treatment, survivors may recover completely or may have permanent blindness, vision disturbances and/or nervous system effects.
Chronic: Prolonged or repeated skin contact may cause dermatitis. Chronic exposure may cause effects similar to those of acute exposure. Methanol is only very slowly eliminated from the body. Because of this slow elimination, methanol should be regarded as a cumulative poison. Though a single exposure may cause no effect, daily exposures may result in the accumulation of a harmful amount. Methanol has produced fetotoxicity in rats and teratogenicity in mice exposed by inhalation to high concentrations that did not produce significant maternal toxicity.

Section 4 - First Aid Measures

Eyes: In case of contact, immediately flush eyes with plenty of water for a t least 15 minutes. Get medical aid.
Skin: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid immediately. Wash clothing before reuse.
Ingestion: Potential for aspiration if swallowed. Get medical aid immediately. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If vomiting occurs naturally, have victim lean forward.
Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
Notes to Physician: Effects may be delayed.
Antidote: Ethanol may inhibit methanol metabolism.

Section 5 - Fire Fighting Measures

General Information: Ethanol may inhibit methanol metabolism. As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Water may be ineffective. Material is lighter than water and a fire may be spread by the use of water. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas.
Extinguishing Media: For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. Water may be ineffective. For large fires, use water spray, fog or alcohol-resistant foam. Do NOT use straight streams of water.
Flash Point: 12 deg C (53.60 deg F)
Autoignition Temperature: 455 deg C (851.00 deg F)
Explosion Limits, Lower:6.0 vol %
Upper: 31.00 vol %
NFPA Rating: (estimated) Health: 1; Flammability: 3; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Use water spray to disperse the gas/vapor. Remove all sources of ignition. Absorb spill using an absorbent, non-combustible material such as earth, sand, or vermiculite. Do not use combustible materials such as sawdust. Use a spark-proof tool. Provide ventilation. A vapor suppressing foam may be used to reduce vapors. Water spray may reduce vapor but may not prevent ignition in closed spaces.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Do not ingest or inhale. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Use only with adequate ventilation. Keep away from heat, sparks and flame. Avoid use in confined spaces.
Storage: Keep away from heat, sparks, and flame. Keep away from sources of ignition. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area. Keep containers tightly closed.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible

exposure limits.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Methanol	200 ppm TWA; 250 ppm STEL; Skin - potential significant contribution to overall exposure by the cutaneous r oute	200 ppm TWA; 260 mg/m3 TWA 6000 ppm IDLH	200 ppm TWA; 260 mg/m3 TWA

OSHA Vacated PELs: Methanol: 200 ppm TWA; 260 mg/m3 TWA

Personal Protective Equipment

Eyes: Wear chemical splash goggles.

Skin: Wear butyl rubber gloves, apron, and/or clothing.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Clear liquid

Appearance: clear, colorless - APHA: 10 max

Odor: alcohol-like - weak odor

pH: Not available.

Vapor Pressure: 128 mm Hg @ 20 deg C

Vapor Density: 1.11 (Air=1)

Evaporation Rate:5.2 (Ether=1)

Viscosity: 0.55 cP 20 deg C

Boiling Point: 64.7 deg C @ 760 mmHg

Freezing/Melting Point:-98 deg C

Decomposition Temperature: Not available.

Solubility: miscible

Specific Gravity/Density:.7910 g/cm3 @ 20°C

Molecular Formula:CH4O

Molecular Weight:32.04

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: High temperatures, ignition sources, confined spaces.

Incompatibilities with Other Materials: Oxidizing agents, reducing agents, acids, alkali metals, potassium, sodium, metals as powders (e.g. hafnium, raney nickel), acid anhydrides, acid chlorides, powdered aluminum, powdered magnesium.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, formaldehyde.

Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#:

CAS# 67-56-1: PC1400000
LD50/LC50:
CAS# 67-56-1:
Draize test, rabbit, eye: 40 mg Moderate;
Draize test, rabbit, eye: 100 mg/24H Moderate;
Draize test, rabbit, skin: 20 mg/24H Moderate;
Inhalation, rabbit: LC50 = 81000 mg/m3/14H;
Inhalation, rat: LC50 = 64000 ppm/4H;
Oral, mouse: LD50 = 7300 mg/kg;
Oral, rabbit: LD50 = 14200 mg/kg;
Oral, rat: LD50 = 5600 mg/kg;
Skin, rabbit: LD50 = 15800 mg/kg;

Human LDLo Oral: 143 mg/kg; Human LDLo Oral: 428 mg/kg; Human TCLo Inhalation; 300 ppm caused visual field changes & headache; Monkey LDLo Skin: 393 mg/kg. Methanol is significantly less toxic to most experimental animals than humans, because most animal species metabolize methanol differently. Non-primate species do not ordinarily show symptoms of metabolic acidosis or the visual effects which have been observed in primates and humans.
Carcinogenicity:
CAS# 67-56-1: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information found
Teratogenicity: There is no human information available. Methanol is considered to be a potential developmental hazard based on animal data. In animal experiments, methanol has caused fetotoxic or teratogenic effects without maternal toxicity.
Reproductive Effects: See actual entry in RTECS for complete information.
Mutagenicity: See actual entry in RTECS for complete information.
Neurotoxicity: ACGIH cites neuropathy, vision and CNS under TLV basis.
Other Studies:

Section 12 - Ecological Information

Ecotoxicity: Fish: Fathead Minnow: 29.4 g/L; 96 Hr; LC50 (unspecified)Fish: Goldfish: 250 ppm; 11 Hr; resulted in deathFish: Rainbow trout: 8000 mg/L; 48 Hr; LC50 (unspecified)Fish: Rainbow trout: LC50 = 13-68 mg/L; 96 Hr.; 12 degrees CFish: Fathead Minnow: LC50 = 29400 mg/L; 96 Hr.; 25 degrees C, pH 7.63Fish: Rainbow trout: LC50 = 8000 mg/L; 48 Hr.; UnspecifiedBacteria: Phytobacterium phosphoreum: EC50 = 51,000-320,000 mg/L; 30 minutes; Microtox test No data available.
Environmental: Dangerous to aquatic life in high concentrations. Aquatic toxicity rating: TLm 96>1000 ppm. May be dangerous if it enters water intakes. Methyl alcohol is expected to biodegrade in soil and water very rapidly. This product will show high soil mobility and will be degraded from the ambient atmosphere by the reaction with photochemically produced hyroxyl radicals with an estimated half-life of 17.8 days. Bioconcentration factor for fish (golden ide) < 10. Based on a log Kow of -0.77, the BCF value for methanol can be estimated to be 0.2.
Physical: No information available.
Other: No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste

regulations to ensure complete and accurate classification.
RCRA P-Series: None listed.
RCRA U-Series:
CAS# 67-56-1: waste number U154 (Ignitable waste).

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	METHANOL	METHANOL
Hazard Class:	3	3
UN Number:	UN1230	UN1230
Packing Group:	II	II
Additional Info:		FLASHPOINT 11 C

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 67-56-1 is listed on the TSCA inventory.
Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.
Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.
Section 12b
None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.
CERCLA Hazardous Substances and corresponding RQs
CAS# 67-56-1: 5000 lb final RQ; 2270 kg final RQ
SARA Section 302 Extremely Hazardous Substances
None of the chemicals in this product have a TPQ.
SARA Codes
CAS # 67-56-1: immediate, fire.
Section 313
This material contains Methanol (CAS# 67-56-1, > 99%),which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.
Clean Air Act:
CAS# 67-56-1 is listed as a hazardous air pollutant (HAP).
This material does not contain any Class 1 Ozone depletors.
This material does not contain any Class 2 Ozone depletors.
Clean Water Act:
None of the chemicals in this product are listed as Hazardous Substances under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.
OSHA:
None of the chemicals in this product are considered highly hazardous by OSHA.
STATE
CAS# 67-56-1 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

T F

Risk Phrases:

R 11 Highly flammable.
R 23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
R 39/23/24/25 Toxic : danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.

Safety Phrases:

S 16 Keep away from sources of ignition - No smoking.
S 36/37 Wear suitable protective clothing and gloves.
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S 7 Keep container tightly closed.

WGK (Water Danger/Protection)

CAS# 67-56-1: 1

Canada - DSL/NDSL

CAS# 67-56-1 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of B2, D1B, D2B.
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

CAS# 67-56-1 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 7/21/1999
Revision #17 Date: 2/11/2008

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.

ThermoFisher SCIENTIFIC

SAFETY DATA SHEET

Creation Date 02-Nov-2009 **Revision Date** 18-Jan-2018 **Revision Number** 5

1. Identification

Product Name Formic acid, OPTIMA LC/MS Grade (99.5%)

Cat No. : A117-50; A117-10X1AMP; A117-1AMP; A117-05AMP; A117-2AMP; NC1450425; XXA117100ML; NC1484204; XXA1171LI

CAS-No 64-18-6
Synonyms Methanoic acid; FA (OPTIMA LC/MS)

Recommended Use Laboratory chemicals.
Uses advised against Food, drug, pesticide or biocidal product use

Details of the supplier of the safety data sheet

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Emergency Telephone Number
CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 001-703-527-3887

2. Hazard(s) identification

Classification
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids	Category 3
Acute oral toxicity	Category 4
Acute Inhalation Toxicity - Vapors	Category 3
Skin Corrosion/irritation	Category 1 A
Serious Eye Damage/Eye Irritation	Category 1
Specific target organ toxicity (single exposure) Target Organs - Respiratory system.	Category 2

Label Elements

Signal Word
Danger

Hazard Statements
Flammable liquid and vapor
Harmful if swallowed
Causes severe skin burns and eye damage
Toxic if inhaled
May cause respiratory irritation

Precautionary Statements
Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Do not breathe dust/fume/gas/mist/vapors/spray
Wear protective gloves/protective clothing/eye protection/face protection
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting/equipment
Use only non-sparking tools
Take precautionary measures against static discharge
Keep cool
Wear respiratory protection
Response
Immediately call a POISON CENTER or doctor/physician
Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Immediately call a POISON CENTER or doctor/physician
Skin
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
Eyes
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Ingestion
Rinse mouth
Do NOT induce vomiting
Fire
In case of fire: Use CO2, dry chemical, or foam for extinction
Storage
Store in a well-ventilated place. Keep container tightly closed
Store locked up
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)
Corrosive to the respiratory tract

3. Composition/Information on Ingredients

Component	CAS-No	Weight %
Formic acid	64-18-6	>95

4. First-aid measures

General Advice Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

Eye Contact	In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.
Inhalation	Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Move to fresh air. Immediate medical attention is required. If not breathing, give artificial respiration.
Ingestion	Do not induce vomiting. Call a physician or Poison Control Center immediately.
Most important symptoms and effects	Breathing difficulties. Causes burns by all exposure routes. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation
Notes to Physician	Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Cool closed containers exposed to fire with water spray.
Unsuitable Extinguishing Media	No information available
Flash Point	50 °C / 122 °F
Method -	No information available
Autoignition Temperature	520 °C / 968 °F
Explosion Limits	
Upper	45 vol %
Lower	10 vol %
Sensitivity to Mechanical Impact	No information available
Sensitivity to Static Discharge	No information available

Specific Hazards Arising from the Chemical
Flammable. Risk of ignition. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Containers may explode when heated.

Hazardous Combustion Products
Carbon monoxide (CO) Carbon dioxide (CO_2) Hydrogen Thermal decomposition can lead to release of irritating gases and vapors
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

NFPA

Health	Flammability	Instability	Physical hazards
3	2	1	N/A

6. Accidental release measures

Personal Precautions	Use personal protective equipment. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.
Environmental Precautions	Should not be released into the environment. Do not flush into surface water or sanitary sewer system. See Section 12 for additional ecological information.

Methods for Containment and Clean Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

Up Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

7. Handling and storage

Handling Use only under a chemical fume hood. Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Do not breathe vapors or spray mist. Do not ingest. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. Take precautionary measures against static discharges.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition. Containers should be vented periodically in order to overcome pressure buildup. Store in explosion-proof refrigerator. Flammables area.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH	Mexico OEL (TWA)
Formic acid	TWA: 5 ppm STEL: 10 ppm	(Vacated) TWA: 5 ppm (Vacated) TWA: 9 mg/m³ TWA: 5 ppm TWA: 9 mg/m³	IDLH: 30 ppm TWA: 5 ppm TWA: 9 mg/m³	TWA: 5 ppm TWA: 9 mg/m³

Legend

***ACGIH** - American Conference of Governmental Industrial Hygienists*
***OSHA** - Occupational Safety and Health Administration*
***NIOSH IDLH:** The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health*

Engineering Measures Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. Tightly fitting safety goggles. Face-shield.

Skin and body protection Chemical resistant apron. Boots. Chemical protection suit (EN 14605).

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Liquid
Appearance	Colorless
Odor	pungent
Odor Threshold	No information available
pH	2.1 10 g/L aq.sol
Melting Point/Range	8 °C / 46.4 °F
Boiling Point/Range	101 °C / 213.8 °F @ 760 mmHg
Flash Point	50 °C / 122 °F
Evaporation Rate	No information available
Flammability (solid,gas)	Not applicable
Flammability or explosive limits	

Upper	45 vol %
Lower	10 vol %
Vapor Pressure	44 mbar @ 20 °C
Vapor Density	No information available
Specific Gravity	1.220
Solubility	miscible
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	520 °C / 968 °F
Decomposition Temperature	No information available
Viscosity	1.47 mPa.s @ 20 °C
Molecular Formula	C H2 O2
Molecular Weight	46.02

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Strong reducing agent. Fire and explosion risk in contact with oxidizing agents. Hygroscopic. heat sensitive. Decomposes to water and carbon dioxide.

Conditions to Avoid Incompatible products. Excess heat. Keep away from open flames, hot surfaces and sources of ignition. Exposure to moist air or water.

Incompatible Materials Strong oxidizing agents, Metals, Powdered metals, Strong bases

Hazardous Decomposition Products Carbon monoxide (CO), Carbon dioxide (CO_2), Hydrogen, Thermal decomposition can lead to release of irritating gases and vapors

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information

Oral LD50 Category 4.

Dermal LD50 Based on ATE data, the classification criteria are not met.

Vapor LC50 Category 3.

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Formic acid	730 mg/kg (Rat)	Not listed	15 g/m³ (Rat) 15 min

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation Causes severe burns by all exposure routes Irritating to respiratory system

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Formic acid	64-18-6	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure Respiratory system
STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects,both acute and delayed Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity
Contains a substance which is:. Harmful to aquatic organisms. The product contains following substances which are hazardous for the environment.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Formic acid	EC50 = 25 mg/L/96h	Leuciscus idus: LC50 = 46-100 mg/L/96h	EC50 = 46.7 mg/L/17h	EC50 = 34 mg/L/48h

Persistence and Degradability Miscible with water Persistence is unlikely based on information available.

Bioaccumulation/ Accumulation No information available.

Mobility . Will likely be mobile in the environment due to its water solubility.

Component	log Pow
Formic acid	-0.54

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

Component	RCRA - U Series Wastes	RCRA - P Series Wastes
Formic acid - 64-18-6	U123	-

14. Transport information

DOT
- **UN-No** UN1779
- **Proper Shipping Name** FORMIC ACID
- **Hazard Class** 8
- **Subsidiary Hazard Class** 3
- **Packing Group** II

TDG
- **UN-No** UN1779
- **Proper Shipping Name** FORMIC ACID
- **Hazard Class** 8
- **Subsidiary Hazard Class** 3
- **Packing Group** II

IATA
- **UN-No** UN1779
- **Proper Shipping Name** FORMIC ACID
- **Hazard Class** 8
- **Subsidiary Hazard Class** 3

Packing Group	II

IMDG/IMO

UN-No	UN1779
Proper Shipping Name	FORMIC ACID
Hazard Class	8
Subsidiary Hazard Class	3
Packing Group	II

15. Regulatory information

All of the components in the product are on the following Inventory lists: X = listed

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Formic acid	X	X	-	200-579-1	-		X	X	X	X	X

Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Formic acid	64-18-6	>95	1.0

SARA 311/312 Hazard Categories See section 2 for more information

CWA (Clean Water Act)

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Formic acid	X	5000 lb	-	-

Clean Air Act Not applicable

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Formic acid	5000 lb	-

California Proposition 65 This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know

Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Formic acid	X	X	X	-	X

U.S. Department of Transportation

Reportable Quantity (RQ): Y
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade Moderate risk, Grade 2

16. Other information

Prepared By
Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date 02-Nov-2009
Revision Date 18-Jan-2018
Print Date 18-Jan-2018
Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS

Material Safety Data Sheet
Ammonium formate

ACC# 01240

Section 1 - Chemical Product and Company Identification

MSDS Name: Ammonium formate
Catalog Numbers: AC168610000, AC168610010, AC168610050, AC168615000, AC401150000, AC401150010, AC401152500, A666-500, NC9119815, NC9520565, NC9615381, XXA666150LB
Synonyms: Formic acid, ammonium salt.
Company Identification:

Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410

For information, call: 201-796-7100
Emergency Number: 201-796-7100
For CHEMTREC assistance, call: 800-424-9300
For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
540-69-2	Ammonium formate	>97	208-753-9

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: white solid.
Warning! Causes eye, skin, and respiratory tract irritation. Hygroscopic (absorbs moisture from the air).
Target Organs: Respiratory system, eyes, skin.

Potential Health Effects
Eye: Causes eye irritation.
Skin: Causes skin irritation.
Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea.
Inhalation: Causes respiratory tract irritation.
Chronic: No information found.

Section 4 - First Aid Measures

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and

lower eyelids. Get medical aid.
Skin: Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists. Wash clothing before reuse.
Ingestion: If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid.
Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear.
Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.
Extinguishing Media: In case of fire, use water, dry chemical, chemical foam, or alcohol-resistant foam.
Flash Point: Not applicable.
Autoignition Temperature: Not applicable.
Explosion Limits, Lower: Not available.
Upper: Not available.
NFPA Rating: (estimated) Health: 2; Flammability: 1; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Avoid generating dusty conditions. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation.
Storage: Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances. Store protected from moisture.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Good general ventilation should be sufficient to control airborne levels. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Ammonium formate	none listed	none listed	none listed

OSHA Vacated PELs: Ammonium formate: No OSHA Vacated PELs are listed for this chemical.
Personal Protective Equipment
Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin: Wear appropriate protective gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to minimize contact with skin.
Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Solid
Appearance: white
Odor: ammonia-like - slight
pH: 6.5-7 (5% soln)
Vapor Pressure: 1 mm Hg @ 20 deg C
Vapor Density: Not available.
Evaporation Rate: Negligible.
Viscosity: Not available.
Boiling Point: 180 deg C
Freezing/Melting Point:116 deg C
Decomposition Temperature:> 180 deg C
Solubility: Completely soluble in water.
Specific Gravity/Density:1.28
Molecular Formula:NH4COOH
Molecular Weight:63.06

Section 10 - Stability and Reactivity

Chemical Stability: Stable at room temperature in closed containers under normal storage and handling conditions.
Conditions to Avoid: Moisture, excess heat.
Incompatibilities with Other Materials: Strong oxidizing agents.
Hazardous Decomposition Products: Nitrogen oxides, carbon monoxide, carbon dioxide, ammonia.
Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:
CAS# 540-69-2: BQ6650000
LD50/LC50:
CAS# 540-69-2:
Oral, mouse: LD50 = 2250 mg/kg;
.

Carcinogenicity:
CAS# 540-69-2: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information available.
Teratogenicity: No information available.
Reproductive Effects: No information available.
Mutagenicity: No information available.
Neurotoxicity: No information available.
Other Studies:

Section 12 - Ecological Information

No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA P-Series: None listed.
RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	Not regulated as a hazardous material	Not Regulated
Hazard Class:		
UN Number:		
Packing Group:		

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 540-69-2 is listed on the TSCA inventory.
Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.
Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.
Section 12b
None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.
CERCLA Hazardous Substances and corresponding RQs
None of the chemicals in this material have an RQ.
SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 540-69-2: immediate.

Section 313 No chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants.
This material does not contain any Class 1 Ozone depletors.
This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 540-69-2 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

XI

Risk Phrases:

R 36/37/38 Irritating to eyes, respiratory system and skin.

Safety Phrases:

S 24/25 Avoid contact with skin and eyes.

WGK (Water Danger/Protection)

CAS# 540-69-2: No information available.

Canada - DSL/NDSL

CAS# 540-69-2 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of D2B.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

Section 16 - Additional Information

MSDS Creation Date: 3/19/1998
Revision #4 Date: 6/19/2006

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.

Material Safety Data Sheet
Hydrochloric acid 32-38% solution

ACC# 11155

Section 1 - Chemical Product and Company Identification

MSDS Name: Hydrochloric acid 32-38% solution
Catalog Numbers: A142-212, A142P-19, A142P-20, A144-212, A144-212LC, A144-500, A144-500LB, A144-500LC, A144-612GAL, A144C-212, A144C-212EA, A144P-19, A144P-20, A144S-212, A144S-212EA, A144S-500, A144SI-212, A466-1, A466-2, A466-250, A466-2LC, A466-500, A481-212, A481-212LC, A508-212, A508-212LC, A508-4, A508-500, A508SK-212, AS481-212LC, NC9373124, S71942SC, S71942SCND, S71943, S71943ND, S80038, SA49
Synonyms: Muriatic acid; Chlorohydric acid; Hydrogen chloride in aqueous solution.
Company Identification:

Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410

For information, call: 201-796-7100
Emergency Number: 201-796-7100
For CHEMTREC assistance, call: 800-424-9300
For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
7732-18-5	Water	62-68	231-791-2
7647-01-0	Hydrogen chloride	32-38	231-595-7

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: clear, colorless to pale yellow liquid.
Danger! Causes eye and skin burns. Causes digestive and respiratory tract burns. May be fatal if inhaled or swallowed. Repeated or prolonged exposure may cause erosion of exposed teeth. Corrosive to metal.
Target Organs: Respiratory system, gastrointestinal system, teeth, eyes, skin.

Potential Health Effects
Eye: May cause irreversible eye injury. Vapor or mist may cause irritation and severe burns. Contact with liquid is corrosive to the eyes and causes severe burns.
Skin: Contact with liquid is corrosive and causes severe burns and ulceration. The severity of injury depends on the concentration of the solution and the duration of exposure.
Ingestion: Causes severe digestive tract burns with abdominal pain, vomiting, and possible death. May cause corrosion and permanent tissue destruction of the esophagus and digestive tract.

Inhalation: May be fatal if inhaled. May cause severe irritation of the respiratory tract with sore throat, coughing, shortness of breath and delayed lung edema. Causes chemical burns to the respiratory tract. Causes corrosive action on the mucous membranes.
Chronic: Prolonged or repeated skin contact may cause dermatitis. Repeated exposure may cause erosion of teeth. Repeated exposure to low concentrations of HCl vapor or mist may cause bleeding of nose and gums. Chronic bronchitis and gastritis have also been reported.

Section 4 - First Aid Measures

Eyes: In case of contact, immediately flush eyes with plenty of water for a t least 15 minutes. Get medical aid immediately.
Skin: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid immediately. Wash clothing before reuse.
Ingestion: If swallowed, do NOT induce vomiting. Get medical aid immediately. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.
Inhalation: POISON material. If inhaled, get medical aid immediately. Remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
Notes to Physician: Do NOT use sodium bicarbonate in an attempt to neutralize the acid.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Water runoff can cause environmental damage. Dike and collect water used to fight fire. Not flammable, but reacts with most metals to form flammable hydrogen gas. Use water spray to keep fire-exposed containers cool. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. Containers may explode when heated.
Extinguishing Media: Substance is noncombustible; use agent most appropriate to extinguish surrounding fire.
Flash Point: Not applicable.
Autoignition Temperature: Not applicable.
Explosion Limits, Lower: Not available.
Upper: Not available.
NFPA Rating: (estimated) Health: 3; Flammability: 0; Instability: 1

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Isolate area and deny entry. Provide ventilation. Spill may be carefully neutralized with lime (calcium oxide, CaO). A vapor suppressing foam may be used to reduce vapors. Approach spill from upwind.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Contents may develop pressure upon prolonged storage. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Discard contaminated shoes. Keep away from strong bases and metals. Use caution when opening. Do not use with metal spatula or other metal items. Do not breathe vapor or mist. Use only with adequate ventilation or respiratory protection.
Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Corrosives area. Do not store in metal containers. Store away from alkalies. Separate from oxidizing materials.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits. Use a corrosion-resistant ventilation system.
Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Water	none listed	none listed	none listed
Hydrogen chloride	2 ppm Ceiling	50 ppm IDLH	5 ppm Ceiling; 7 mg/m3 Ceiling

OSHA Vacated PELs: Water: No OSHA Vacated PELs are listed for this chemical. Hydrogen chloride: No OSHA Vacated PELs are listed for this chemical.
Personal Protective Equipment
Eyes: Wear chemical splash goggles and face shield.
Skin: Wear appropriate gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to prevent skin exposure.
Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Appearance: clear, colorless to pale yellow
Odor: strong, pungent
pH: 0.01
Vapor Pressure: 84 mm Hg @ 20 deg C
Vapor Density: 1.27 (air=1)
Evaporation Rate:> 1.00 (N-butyl acetate)
Viscosity: Not available.
Boiling Point: 83 deg C @ 760 mmHg
Freezing/Melting Point:-66 deg C
Decomposition Temperature: Not available.
Solubility: Soluble.
Specific Gravity/Density:1.19 (38%)
Molecular Formula:HCl.H2O
Molecular Weight:36.46

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: Excess heat.
Incompatibilities with Other Materials: Metals, strong oxidizing agents, strong reducing agents, bases, acetic anhydride, alcohols, amines, sulfuric acid, vinyl acetate, epoxides (e.g. butyl glycidyl ether), chlorosulfonic acid, carbides, beta-propiolactone, ethyleneimine, propylene oxide, lithium silicides, 2-aminoethanol, 1,1-difluoroethylene, magnesium boride, mercuric sulfate, aldehydes, cyanides, sulfides, phosphides.
Hazardous Decomposition Products: Hydrogen chloride, chlorine, hydrogen gas.
Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#:
CAS# 7732-18-5: ZC0110000
CAS# 7647-01-0: MW4025000; MW4031000
LD50/LC50:
CAS# 7732-18-5:
Oral, rat: LD50 = >90 mL/kg;
.

CAS# 7647-01-0:
Inhalation, mouse: LC50 = 1108 ppm/1H;
Inhalation, mouse: LC50 = 20487 mg/m3/5M;
Inhalation, mouse: LC50 = 3940 mg/m3/30M;
Inhalation, mouse: LC50 = 8300 mg/m3/30M;
Inhalation, rat: LC50 = 3124 ppm/1H;
Inhalation, rat: LC50 = 60938 mg/m3/5M;
Inhalation, rat: LC50 = 7004 mg/m3/30M;
Inhalation, rat: LC50 = 45000 mg/m3/5M;
Inhalation, rat: LC50 = 8300 mg/m3/30M;
Oral, rabbit: LD50 = 900 mg/kg;
.
Inhalation LC50 (aerosol) rat: 8300mg/m3/30M; Oral LDLo Man: 2857 ug/kg; Oral LDLo Woman: 420 uL/kg; Inhalation LCLo Human: 1300 ppm/30M.
Carcinogenicity:
CAS# 7732-18-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 7647-01-0: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No data available.
Teratogenicity: Female rats were exposed to 450 mg/m3 of HCl for 1 hour either prior to mating or on day 9 of pregnancy. Developmental effects were observed in the offspring. However, this exposure caused toxic effects, including mortality, in the mothers.
Reproductive Effects: No information available.
Mutagenicity: See actual entry in RTECS for complete information.
Neurotoxicity: No information available.
Other Studies:

Section 12 - Ecological Information

Ecotoxicity: Fish: Bluegill/Sunfish: 3.6 mg/L; 48Hr; Lethal (unspecified)Fish: Bluegill/Sunfish: LC50; 96 Hr; pH 3.0-3.5 No data available.
Environmental: Will exhibit extensive evaporation from soil surfaces. Upon transport through the soil, hydrochloric acid will dissolve some of the soil materials (especially those with carbonate bases) and the acid will neutralize to some degree.
Physical: No information available.
Other: No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA P-Series: None listed.
RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	HYDROCHLORIC ACID	HYDROCHLORIC ACID
Hazard Class:	8	8
UN Number:	UN1789	UN1789
Packing Group:	II	II

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 7732-18-5 is listed on the TSCA inventory.
CAS# 7647-01-0 is listed on the TSCA inventory.
Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.
Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.
Section 12b
None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.
CERCLA Hazardous Substances and corresponding RQs
CAS# 7647-01-0: 5000 lb final RQ; 2270 kg final RQ
SARA Section 302 Extremely Hazardous Substances
CAS# 7647-01-0: 500 lb TPQ (gas only)
SARA Codes
CAS # 7647-01-0: immediate.
Section 313

This material contains Hydrogen chloride (CAS# 7647-01-0, 32-38%),which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:

CAS# 7647-01-0 is listed as a hazardous air pollutant (HAP).

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

CAS# 7647-01-0 is listed as a Hazardous Substance under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

CAS# 7647-01-0 is considered highly hazardous by OSHA.

STATE

CAS# 7732-18-5 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

CAS# 7647-01-0 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

C

Risk Phrases:

R 34 Causes burns.

R 37 Irritating to respiratory system.

Safety Phrases:

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)

CAS# 7732-18-5: No information available.

CAS# 7647-01-0: 1

Canada - DSL/NDSL

CAS# 7732-18-5 is listed on Canada's DSL List.

CAS# 7647-01-0 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of E, D1A.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

CAS# 7647-01-0 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 7/06/1999

Revision #20 Date: 4/01/2008

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we

assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.

Material Safety Data Sheet
Hydrogen Peroxide 20-40%

ACC# 11189

Section 1 - Chemical Product and Company Identification

MSDS Name: Hydrogen Peroxide 20-40%
Catalog Numbers: S74876, S748761, S74879, S74882, S93262, H323-500, H325-100, H325-30GAL, H325-4, H325-4LC, H325-500, H325-500LC, H3254LC, H327-200, H327-500, NC9352771, P170-500, XXH325PD12LI
Synonyms: Carbamide Peroxide; Hydrogen Dioxide; Peroxide; Hydroperoxide; Urea Peroxide; Hydrogen Peroxide 100 Volumes.
Company Identification:

Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410

For information, call: 201-796-7100
Emergency Number: 201-796-7100
For CHEMTREC assistance, call: 800-424-9300
For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
7732-18-5	Water	60-80	231-791-2
7722-84-1	Hydrogen peroxide	20-40	231-765-0
12058-66-1	Disodium stannate	<100 ppm	235-030-5

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: clear, colorless liquid.
Danger! Strong oxidizer. Contact with other material may cause a fire. Eye contact may result in permanent eye damage. Corrosive. Causes eye and skin irritation and possible burns. May be harmful if swallowed. May cause severe respiratory tract irritation with possible burns. May cause severe digestive tract irritation with possible burns. May cause blood abnormalities. Light sensitive. May cause central nervous system effects.
Target Organs: Blood, central nervous system.

Potential Health Effects
Eye: Contact with liquid is corrosive to the eyes and causes severe burns. Contact with the eyes may cause corneal damage.
Skin: Causes severe skin irritation and possible burns. May cause discoloration, erythema (redness), swelling, and the formation of papules and vesicles (blisters).
Ingestion: Causes gastrointestinal irritation with nausea, vomiting and diarrhea. Causes

gastrointestinal tract burns. May cause vascular collapse and damage. May cause damage to the red blood cells. May cause difficulty in swallowing, stomach distension, possible cerebral swelling and death. Ingestion may result in irritation of the esophagus, bleeding of the stomach and ulcer formation.
Inhalation: Causes chemical burns to the respiratory tract. May cause ulceration of nasal tissue, insomnia, nervous tremors with numb extremities, chemical pneumonia, unconsciousness, and death. At high concentrations, respiratory effects may include acute lung damage and delayed pulmonary edema.
Chronic: Prolonged or repeated skin contact may cause dermatitis. Laboratory experiments have resulted in mutagenic effects. Repeated contact may cause corneal damage.

Section 4 - First Aid Measures

Eyes: Get medical aid immediately. Do NOT allow victim to rub eyes or keep eyes closed. Extensive irrigation with water is required (at least 30 minutes).
Skin: Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Destroy contaminated shoes.
Ingestion: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately. Wash mouth out with water. Vomiting may occur spontaneously. If vomiting occurs and the victim is conscious, give water to further dilute the chemical.
Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.
Notes to Physician: Treat symptomatically and supportively. Attempts at evacuating the stomach via emesis induction or gastric lavage should be avoided. In the event of severe distension of the stomach or esophagus due to gas formation, insertion of a gastric tube may be required. To treat corneal damage, careful ophthalmologic evaluation is recommended and the possibility of local corticosteroid therapy should be considered.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Water runoff can cause environmental damage. Dike and collect water used to fight fire. Strong oxidizer. Contact with other material may cause fire. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Substance is noncombustible. Use water with caution and in flooding amounts. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. Some oxidizers may react explosively with hydrocarbons(fuel). May decompose explosively when heated or involved in a fire. May accelerate burning if involved in a fire.
Extinguishing Media: Use water only! Do NOT use carbon dioxide. Do NOT use dry chemical. Do NOT get water inside containers. Contact professional fire-fighters immediately. Cool containers with flooding quantities of water until well after fire is out. For large fires, flood fire area with large quantities of water, while knocking down vapors with water fog.
Flash Point: Noncombustible
Autoignition Temperature: Noncombustible
Explosion Limits, Lower:40 vol %

Upper: 100 vol %
NFPA Rating: (estimated) Health: 3; Flammability: 0; Instability: 1; Special Hazard: OX

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Use water spray to disperse the gas/vapor. Remove all sources of ignition. Absorb spill using an absorbent, non-combustible material such as earth, sand, or vermiculite. Do not use combustible materials such as sawdust. Flush spill area with water. Provide ventilation. Do not get water inside containers. Keep combustibles (wood, paper, oil, etc.,) away from spilled material.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use only in a well-ventilated area. Contents may develop pressure upon prolonged storage. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Avoid contact with clothing and other combustible materials. Do not ingest or inhale. Store protected from light. Discard contaminated shoes. Unused chemicals should not be returned to the container. Rinse empty drums and containers thoroughly with water before discarding.
Storage: Keep away from heat, sparks, and flame. Do not store near combustible materials. Keep container closed when not in use. Store protected from light. Keep away form alkalies, oxidizable materials, finely divided metals, alcohols, and permanganates. Store only in light-resistent containers fitted with a safety vent.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.
Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Water	none listed	none listed	none listed
Hydrogen peroxide	1 ppm TWA	1 ppm TWA; 1.4 mg/m3 TWA 75 ppm IDLH	1 ppm TWA; 1.4 mg/m3 TWA
Disodium stannate	none listed	none listed	none listed

OSHA Vacated PELs: Water: No OSHA Vacated PELs are listed for this chemical. Hydrogen peroxide: 1 ppm TWA; 1.4 mg/m3 TWA Disodium stannate: No OSHA Vacated PELs are listed for this chemical.
Personal Protective Equipment
Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin: Wear butyl rubber gloves, apron, and/or clothing.
Clothing: Wear appropriate protective clothing to prevent skin exposure.
Respirators: A MSHA/NIOSH approved supplied-air respirator with a full facepiece operated in

a pressure-demand or other positive-pressure mode. For increased protection use in combination with an auxiliary self-contained breathing apparatus (positive-pressure mode).

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Appearance: clear, colorless
Odor: slight acid odor
pH: 3.3 (30% solution)
Vapor Pressure: 23 mm Hg @ 30C
Vapor Density: 1.10
Evaporation Rate:>1.0 (Butyl acetate=1)
Viscosity: 1.25 cP
Boiling Point: 108 deg C @ 760 mmHg
Freezing/Melting Point:-33 deg C
Decomposition Temperature: Not available.
Solubility: Miscible in water.
Specific Gravity/Density:1.1-1.2 (30-50%)
Molecular Formula: Solution
Molecular Weight: Not available.

Section 10 - Stability and Reactivity

Chemical Stability: Decomposes slowly to release oxygen. Unstable when heated or contaminated with heavy metals, reducing agents, rust, dirt or organic materials. Stability is reduced when pH is above 4.0.
Conditions to Avoid: Mechanical shock, incompatible materials, light, ignition sources, dust generation, excess heat, combustible materials, reducing agents, alkaline materials, strong oxidants, rust, dust, pH > 4.0.
Incompatibilities with Other Materials: Strong oxidizing agents, strong reducing agents, acetic acid, acetic anhydride, alcohols, brass, copper, copper alloys, finely powdered metals, galvanized iron, hydrazine, iron, magnesium, nitric acid, sodium carbonate, potassium permanganate, cyanides (e.g. potassium cyanide, sodium cyanide), ethers (e.g. dioxane, furfuran, tetrahydrofuran (THF)), urea, chlorosulfonic acid, alkalies, lead, nitrogen compounds, triethylamine, silver, nickel, palladium, organic matter, charcoal, sodium borate, aniline, platinum, formic acid, cyclopentadiene, activated carbon, tert-butyl alcohol, hydrogen selenide, manganese dioxide, mercurous chloride, rust, ketones, carboxylic acids, glycerine, sodium fluoride, sodium pyrophosphate, soluble fuels (acetone, ethanol, glycerol), wood, wood, asbestos, hexavalent chromium compounds, salts of iron, copper, chromium, vanadium, tungsten, molybdeum, and platinum.
Hazardous Decomposition Products: Oxygen, hydrogen gas, water, heat, steam.
Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#:
CAS# 7732-18-5: ZC0110000
CAS# 7722-84-1: MX0887000; MX0888000; MX0890000; MX0899000; MX0899500;

MX0900000
CAS# 12058-66-1: JN6345000
LD50/LC50:
CAS# 7732-18-5:
Oral, rat: LD50 = >90 mL/kg;
.

CAS# 7722-84-1:
Draize test, rabbit, eye: 1 mg Severe;
Inhalation, rat: LC50 = 2 gm/m3/4H;
Inhalation, rat: LC50 = 2000 mg/m3;
Oral, mouse: LD50 = 2000 mg/kg;
Oral, rabbit: LD50 = 820 mg/kg;
Oral, rat: LD50 = 1518 mg/kg;
Oral, rat: LD50 = 910 mg/kg;
Oral, rat: LD50 = 376 mg/kg;
Oral, rat: LD50 = 4050 mg/kg;
Skin, rat: LD50 = 3 gm/kg;
Skin, rat: LD50 = 4060 mg/kg;
.

CAS# 12058-66-1:
Oral, mouse: LD50 = 2132 mg/kg;
Oral, rat: LD50 = 3457 mg/kg;
.
Oral, rat: LD50 = 1232 mg/kg (35% H2O2); Oral, rat: LD50 = 841 mg/kg (60 %
Carcinogenicity:
CAS# 7732-18-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 7722-84-1:

- **ACGIH:** A3 - Confirmed animal carcinogen with unknown relevance to humans
- **California:** Not listed.
- **NTP:** Not listed.
- **IARC:** Not listed.

CAS# 12058-66-1: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information found
Teratogenicity: No information found
Reproductive Effects: No information found
Mutagenicity: CAS#: 7722-84-1 Mutation in Microorganisms: Salmonella typhimurium = 100 ug/plate.; Hyman, embryo = 50 umol/L.; Cytogenetic Analysis: Human, embryo = 20 umol/L. Mutation in Mammalian Somatic Cells: Hamster, lung = 1mmol/L.
Neurotoxicity: No information found
Other Studies:

Section 12 - Ecological Information

Ecotoxicity: Fish: Carp: LC50 = 42 mg/L; 48 Hr; UnspecifiedFish: Fathead Minnow: LC50 = 16.4 mg/L; 96 Hr; Fresh waterFish: Fathead Minnow: NOEC = 5 mg/L; 96 Hr; Fresh waterWater flea Daphnia: EC50 = 2.4 mg/L; 48 Hr; Fresh waterFish: Channel catfish: LC50 = 37.4 mg/L; 96 Hr; Fresh water No data available.
Environmental: Rain washout is expected due to condensation of hydrogen peroxide on contact

with water droplets. In the atmosphere, indirect photooxidation is perdicted with a half-life of 10 to 20 hours. Non-significant evaporation and adsorption from water surfaces and soil/sediments is expected. Rapid and cosiderable aerobic biodegradation was determined with a half-life < 1 minute (biological treatment sludge) and 0.3 to 2 days (fresh water). Hydrogen peroxide is non-bioaccumulable.
Physical: No information available.
Other: No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA P-Series: None listed.
RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	HYDROGEN PEROXIDE, AQUEOUS SOLUTIONS	HYDROGEN PEROXIDE AQUEOUS SOLN
Hazard Class:	5.1	5.1(8)
UN Number:	UN2014	UN2014
Packing Group:	II	II

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 7732-18-5 is listed on the TSCA inventory.
CAS# 7722-84-1 is listed on the TSCA inventory.
CAS# 12058-66-1 is listed on the TSCA inventory.
Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.
Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.
Section 12b
None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.
CERCLA Hazardous Substances and corresponding RQs
None of the chemicals in this material have an RQ.
SARA Section 302 Extremely Hazardous Substances
CAS# 7722-84-1: 1000 lb TPQ (concentration >52%)
SARA Codes
CAS # 7722-84-1: immediate, fire.
Section 313 No chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants.
This material does not contain any Class 1 Ozone depletors.
This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

CAS# 7722-84-1 is considered highly hazardous by OSHA.

STATE

CAS# 7732-18-5 is not present on state lists from CA, PA, MN, MA, FL, or NJ.
CAS# 7722-84-1 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.
CAS# 12058-66-1 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

O C

Risk Phrases:

R 34 Causes burns.
R 8 Contact with combustible material may cause fire.

Safety Phrases:

S 28 After contact with skin, wash immediately with...
S 3 Keep in a cool place.
S 36/39 Wear suitable protective clothing and eye/face protection.
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)

CAS# 7732-18-5: No information available.
CAS# 7722-84-1: 0
CAS# 12058-66-1: No information available.

Canada - DSL/NDSL

CAS# 7732-18-5 is listed on Canada's DSL List.
CAS# 7722-84-1 is listed on Canada's DSL List.
CAS# 12058-66-1 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of C, E, F.
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

CAS# 7722-84-1 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 4/21/1999
Revision #10 Date: 7/19/2007

ThermoFisher SCIENTIFIC

SAFETY DATA SHEET

Creation Date 22-Nov-2010 **Revision Date** 08-Apr-2019 **Revision Number** 6

1. Identification

Product Name Triton X-100™

Cat No. : BP151-1; BP151-4; BP151-100; BP151-500; XXBP151G4LI; NC1322677; NC1584420

CAS-No 9002-93-1
Synonyms Polyethylene Glycol p-tert-Octylphenyl Ether (Electrophoresis)

Recommended Use Laboratory chemicals.
Uses advised against Food, drug, pesticide or biocidal product use

Details of the supplier of the safety data sheet

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Emergency Telephone Number
CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 001-703-527-3887

2. Hazard(s) identification

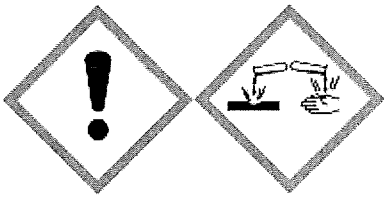
Classification
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute oral toxicity	Category 4
Serious Eye Damage/Eye Irritation	Category 1

Label Elements

Signal Word
Danger

Hazard Statements
Harmful if swallowed
Causes serious eye damage



Precautionary Statements
Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Wear protective gloves/protective clothing/eye protection/face protection
Eyes
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician
Ingestion
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)
Toxic to aquatic life with long lasting effects

3. Composition/Information on Ingredients

Component	CAS-No	Weight %
Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega. -hydroxy-	9002-93-1	>95

4. First-aid measures

General Advice If symptoms persist, call a physician.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

Inhalation Move to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.

Ingestion Clean mouth with water and drink afterwards plenty of water.

Most important symptoms and effects Causes severe eye damage.

Notes to Physician Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable Extinguishing Media No information available

Flash Point 274 °C / 525.2 °F

Method -	No information available
Autoignition Temperature	No information available
Explosion Limits	
Upper	No data available
Lower	No data available
Sensitivity to Mechanical Impact	No information available
Sensitivity to Static Discharge	No information available

Specific Hazards Arising from the Chemical
Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition.

Hazardous Combustion Products
Carbon monoxide (CO) Carbon dioxide (CO_2) Aldehydes Ketones
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
2	1	1	N/A

6. Accidental release measures

Personal Precautions	Use personal protective equipment. Ensure adequate ventilation.
Environmental Precautions	Do not flush into surface water or sanitary sewer system.
Methods for Containment and Clean Up	Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

7. Handling and storage

Handling	Wear personal protective equipment. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation.
Storage	Keep containers tightly closed in a dry, cool and well-ventilated place.

8. Exposure controls / personal protection

Exposure Guidelines	This product does not contain any hazardous materials with occupational exposure limitsestablished by the region specific regulatory bodies.
Engineering Measures	Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

Eye/face Protection	Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin and body protection	Long sleeved clothing.
Respiratory Protection	Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Liquid
Appearance	Clear
Odor	Characteristic
Odor Threshold	No information available
pH	6-8 5% aq.sol
Melting Point/Range	6 °C / 42.8 °F
Boiling Point/Range	270 °C / 518 °F @ 760 mmHg
Flash Point	274 °C / 525.2 °F
Evaporation Rate	No information available
Flammability (solid,gas)	Not applicable
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	No information available
Vapor Density	No information available
Specific Gravity	1.067
Solubility	No information available
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	No information available
Decomposition Temperature	No information available
Viscosity	No information available
Molecular Formula	C34 H62 O11
Molecular Weight	646.85

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Stable under normal conditions.

Conditions to Avoid Incompatible products.

Incompatible Materials Strong oxidizing agents, Strong acids, Strong reducing agents

Hazardous Decomposition Products Carbon monoxide (CO), Carbon dioxide (CO_2), Aldehydes, Ketones

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological Information

Acute Toxicity

Product Information

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl) phenyl]-.omega.-hydroxy-	1800 mg/kg (Rat)	Not listed	Not listed

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation Severe eye irritant

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-	9002-93-1	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure None known
STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects,both acute and delayed No information available

Endocrine Disruptor Information

Component	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine Disruptor Information
Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-	Group III Chemical	-	-

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity
The product contains following substances which are hazardous for the environment. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-	-	LC50 = 8.9 mg/L 96H LC50 = 4.0 mg/l 96H (Pimephales promelus)	-	EC50 = 26 mg/L 48h

Persistence and Degradability Persistence is unlikely

Bioaccumulation/ Accumulation No information available.

Mobility Will likely be mobile in the environment due to its water solubility.

Component	log Pow
Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-	2.7

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT	Not regulated
TDG	Not regulated
IATA	Not regulated
IMDG/IMO	Not regulated

15. Regulatory information

All of the components in the product are on the following Inventory lists: X = listed

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-	X	X	-	-	-		X	-	X	X	KE-33568

Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313 Not applicable

SARA 311/312 Hazard Categories See section 2 for more information

CWA (Clean Water Act) Not applicable

Clean Air Act Not applicable

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA Not applicable

California Proposition 65 This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations Not applicable

U.S. Department of Transportation

Reportable Quantity (RQ):	N
DOT Marine Pollutant	N
DOT Severe Marine Pollutant	N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

16. Other information

Prepared By
Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date 22-Nov-2010
Revision Date 08-Apr-2019
Print Date 08-Apr-2019
Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS