

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name: Chloroform
CAS number: 67-66-3
Synonyms: Chloroform with Ethanol

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified Uses: Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Lab Alley, LLC
22111 Highway 71 West, Suite 601
Spicewood, Texas 78669
U.S.A.

Telephone : 512-668-9918
Fax : 512-886-4008

1.4 Emergency telephone

Emergency Phone # : US & Canada: 1-800-535-5053 INFOTRAC
International 1-352-323-3500 INFOTRAC

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity, oral (Category 4)
Acute toxicity, inhalation (Category 3)
Skin corrosion/irritation Carcinogenicity (Category 2)
Reproductive toxicity (Category 2)
Specific target organ toxicity, repeated exposure (Category 2)
Hazardous to the aquatic environment, acute hazard (Category 3)
Hazardous to the aquatic environment, long-term hazard (Category 2)

2.2 GHS Label elements, including precautionary statements

Pictogram:



Signal Word:

Danger

Hazard statement(s):

Harmful if swallowed. Toxic if inhaled. Causes skin irritation. Suspected of causing cancer. Suspected of damaging fertility or the unborn child. Causes damage to organs (Kidney, Liver) through prolonged or repeated exposure. Harmful to aquatic life. Toxic to aquatic life with long lasting effects.

Precautionary statement(s):

Prevention - Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist/vapors. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.
Response - If swallowed: Call a poison center/doctor if you feel unwell. Rinse mouth. If on skin: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor. If exposed or concerned: Get medical advice/attention. Collect spillage.

Hazards not otherwise classified

None.

SECTION 3: Composition/information on ingredients

3.1 Components

Chemical name	CAS-No	Weight %
Chloroform	67-66-3	>98
Ethyl Alcohol	64-17-5	<2

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice:

IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

If inhaled:

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a poison center or doctor/physician.

In case of skin contact:	Remove contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
In case of eye contact:	Rinse with water. Get medical attention if irritation develops and persists.
In case of ingestion:	Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical advice/attention if you feel unwell.

4.2 Most important symptoms and effects, both acute and delayed

Headache. Dizziness. Nausea. Skin irritation. May cause redness and pain. Edema. Jaundice. Prolonged exposure may cause chronic effects.

4.3 Indication of any immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable (and unsuitable) extinguishing media Use fire-extinguishing media appropriate for surrounding materials.

5.2 Specific hazards arising from the substance or mixture

During fire, gases hazardous to health may be formed. Thermal decomposition or combustion may produce: hydrogen chloride gas, phosgene.

5.3 Special protective equipment and precautions for firefighters

Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Use water spray to keep fire-exposed containers cool.

5.4 Further information

Use standard firefighting procedures and consider the hazards of other involved materials. The product is non-combustible.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist/vapors. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

6.2 Environmental precautions

Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

6.3 Methods and materials for containment and cleaning up

Prevent product from entering drains. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. Put material in suitable, covered, labeled containers. For waste disposal, see section 13 of the SDS.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist/vapors. Do not taste or swallow. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. When using, do not eat, drink or smoke. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.

Hygiene measures

Observe any medical surveillance requirements. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Store locked up. Store in tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

SECTION 8. Exposure controls/personal protection

8.1 Occupational exposure limits

Control parameters

Exposure Guidelines Ingredients with workplace control parameters.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Chloroform (CAS 67-66-3)	Ceiling	240 mg/m ³
		50 ppm
Ethyl alcohol (CAS 64-17-5)	PEL	1900 mg/m ³
		1000 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Chloroform (CAS 67-66-3)	TWA	10 ppm
Ethyl alcohol (CAS 64-17-5)	STEL	1000 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Chloroform (CAS 67-66-3)	STEL	9.78 mg/m ³
		2 ppm
Ethyl alcohol (CAS 64-17-5)	TWA	1900 mg/m ³
		1000 ppm

8.2 Exposure controls

Appropriate engineering controls

Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station and safety shower.

Personal protective equipment

Eye/face protection

Chemical goggles are recommended.

Skin and body protection

Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended. Wear appropriate thermal protective clothing, when necessary.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Respirator type: Chemical respirator with organic vapor cartridge.

Control of environmental exposure

Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical State	Liquid.
Appearance	Clear, Colorless.
Odor	Sweet.
Odor Thresh	Not available.
pH	205 ppm
Melting Point/Range	-83.2 °F (-64 °C)
Boiling Point/Range	141.8 °F (61 °C)
Flash Point	Not available.
Evaporation Rate	Not available.
Flammability (solid, gas)	Not applicable.
Flammability or explosive limit	
	Upper : NA
	Lower : NA
Vapor Pressure	160 mmHg (68 °F (20 °C))
Vapor Density	4.12 - (Air = 1.0)
Density	1.492 (77 °F (25 °C))
Solubility	Soluble.

Partition coefficient; n-octanol/water	Not available.
Autoignition Temp	Not available.
Decomposition Temp	Distillable in an undecomposed state at normal pressure.
Viscosity	Not available.
Molecular Formula	CHCl ₃
Molecular Weight	119.38
VOC Content(%)	Not available.
Oxidizing properties	None.

9.2 Other safety information

None.

SECTION 10: Stability and reactivity

10.1 Reactivity

The product is stable and non-reactive under normal conditions of use, storage and transport.

10.2 Chemical stability

Material is stable under normal conditions.

10.3 Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Contact with incompatible materials.

10.5 Incompatible materials

Strong oxidizing agents. Strong bases. Magnesium. Sodium. Sodium oxides. Lithium.

10.6 Hazardous decomposition products

Decomposition products: Hydrogen chloride gas. Phosgene.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute Toxicity Toxic if inhaled. Harmful if swallowed.

Components	Species	Test Results
Chloroform (CAS 67-66-3)		
<u>Acute</u>		
Inhalation		
Vapor		
LC50	Rat	9200 mg/m ³ , 6 Hours

Oral		
LD50	Rat	440 mg/kg
Ethyl alcohol (CAS 64-17-5)		
<u>Acute</u>		
Inhalation		
<i>Vapor</i>		
LC50	Rat	117 - 125 mg/l, 4 Hours
Oral		
LD50	Rat	10470 mg/kg

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/eye irritation

Direct contact with eyes may cause temporary irritation.

Respiratory or skin sensitization

Not a respiratory sensitizer. This product is not expected to cause skin sensitization.

Germ cell mutagenicity

No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity Suspected of causing cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity

Chloroform (CAS 67-66-3) 2B Possibly carcinogenic to humans.

NTP Report on Carcinogens

Chloroform (CAS 67-66-3) Reasonably Anticipated to be a Human Carcinogen.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

Reproductive toxicity

Suspected of damaging fertility or the unborn child.

Specific target organ toxicity - single exposure

Not classified.

Specific target organ toxicity - repeated exposure

Causes damage to organs (Kidney, Liver) through prolonged or repeated exposure.

Aspiration hazard

Not an aspiration hazard.

Chronic effects

Prolonged inhalation may be harmful. Causes damage to organs through prolonged or repeated exposure.
Prolonged exposure may cause chronic effects.

11.2 Additional information

Symptoms related to the physical, chemical and toxicological characteristics - Headache. Dizziness. Nausea. Skin irritation. May cause redness and pain. Edema. Jaundice. Prolonged exposure may cause chronic effects.

SECTION 12. Ecological information

12.1 Toxicity

Ecotoxicity: Harmful to aquatic life. Toxic to aquatic life with long lasting effects.

Components		Species	Test Results
Chloroform (CAS 67-66-3)			
Aquatic			
<i>Acute</i>			
Algae	EC50	Chlamydomonas reinhardtii	13.3 mg/l, 72 Hours
Crustacea	EC50	Daphnia magna	29 mg/l, 48 Hours
Fish	LC50	Oncorhynchus mykiss	18 mg/l, 96 Hours
<i>Chronic</i>			
Crustacea	NOEC	Daphnia magna	6.3 mg/l, 21 days
Fish	NOEC	Oryzias latipes	0.151 mg/l, 6 months
Ethyl alcohol (CAS 64-17-5)			
Aquatic			
Algae	EC10	Freshwater algae	11.5 mg/l, 72 hours
	EC50	Freshwater algae	275 mg/l, 72 hours
		Marine water algae	1900 mg/l
Fish	NOEC	Marine water algae	1580 mg/l
	LC50	Freshwater fish	11200 mg/l, 24 hours
	NOEC	Freshwater fish	250 mg/l
Invertebrate	EC50	Freshwater invertebrate	5012 mg/l, 48 hours
		Marine water invertebrate	857 mg/l, 48 hours
	NOEC	Freshwater invertebrate	9.6 mg/l, 10 days
Other		Marine water invertebrate	79 mg/l, 96 hours
	EC50	Lemna minor	4432 mg/l, 7 days
	NOEC	Lemna minor	280 mg/l, 7 days
Other			
Micro-organisms	LC50	Micro-organisms	5800 mg/l, 4 hours
Terrestrial			
Plant	EC50	Terrestrial plant	633 mg/kg dw

12.2 Persistence and degradability

No data is available on the degradability of this product.

12.3 Bio accumulative potential

Partition coefficient n-octanol / water (log Kow)

Chloroform (CAS 67-66-3) 1.97

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vBvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Endocrine disrupting properties

No data available.

12.7 Other adverse effects

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

SECTION 13. Disposal considerations

13.1 Waste Disposal Methods

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Incinerate the material under controlled conditions in an approved incinerator. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions). Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14: Transport information

DOT

UN-No	UN1888
Proper Shipping Name	Chloroform solution
Hazard Class	6.1
Packing Group	III

IMDG

UN-No	UN1888
Proper Shipping Name	Chloroform solution
Hazard Class	6.1
Packing Group	III

IATA

UN-No	UN1888
Proper Shipping Name	Chloroform solution
Hazard Class	6.1
Packing Group	III

SECTION 15: Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Chloroform (CAS 67-66-3) Listed.

SARA 304 Emergency release notification

Methane, trichloro- (CAS 67-66-3) 10 LBS

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

Toxic Substances Control Act (TSCA) All components of the mixture on the TSCA 8(b) inventory are designated "active".

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Chemical name	CAS number	Reportable quantity (pounds)	Threshold planning quantity (pounds)	Threshold planning quantity, lower value (pounds)	Threshold planning quantity, upper value (pounds)
Chloroform	67-66-3	10	10000		

SARA 311/312 Hazardous chemical Yes

Classified hazard categories Acute toxicity (any route of exposure)
Skin corrosion or irritation
Carcinogenicity
Reproductive toxicity
Specific target organ toxicity (single or repeated exposure)

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Chloroform	67-66-3	> 98

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Chloroform (CAS 67-66-3)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Chloroform (CAS 67-66-3)

Safe Drinking Water Act (SDWA) Contains component(s) regulated under the Safe Drinking Water Act.

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

Ethyl alcohol (CAS 64-17-5) Low priority

US state regulations

US. Massachusetts RTK - Substance List

Chloroform (CAS 67-66-3)

Ethyl alcohol (CAS 64-17-5)

US. New Jersey Worker and Community Right-to-Know Act

Chloroform (CAS 67-66-3)

Ethyl alcohol (CAS 64-17-5)

US. Pennsylvania Worker and Community Right-to-Know Law

Chloroform (CAS 67-66-3)

Ethyl alcohol (CAS 64-17-5)

US. Rhode Island RTK

Chloroform (CAS 67-66-3)

Ethyl alcohol (CAS 64-17-5)

California Proposition 65



WARNING: This product can expose you to Chloroform, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

California Proposition 65 - CRT: Listed date/Carcinogenic substance

Chloroform (CAS 67-66-3) Listed: October 1, 1987

California Proposition 65 - CRT: Listed date/Developmental toxin

Chloroform (CAS 67-66-3) Listed: August 7, 2009

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Chloroform (CAS 67-66-3)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
Country(s) or region	Inventory name	On inventory (yes/no)*
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

SECTION 16: Other information

Issue Date 01/22/2019
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Disclaimer:

The information provided on 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.