SAFETY DATA SHEET

Creation Date 20-Aug-2009 **Revision Date** 18-Dec-2025 **Revision Number** 6

This safety data sheet was created pursuant to the requirements of: US OSHA Hazard Communication Standard 2024 (29 CFR 1910.1200)

1. Identification

Product Name **Trimethyl borate**

Cat No. : **AC140120000; AC140120025; AC140121000; AC140125000**

CAS No 121-43-7
Synonyms Methyl borate

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

Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number
For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11
Emergency Number **US:**001-201-796-7100 / **Europe:** +32 14 57 52 99
CHEMTREC Tel. No. **US:**001-800-424-9300 / **Europe:**001-703-527-3887

2. Hazard(s) identification

Classification
This chemical is considered hazardous according to [US] OSHA (29 CFR 1910.1200, 2024)

Flammable liquids	Category 2
Acute dermal toxicity	Category 4
Specific target organ toxicity (single exposure)	Category 1
Target Organs - Optic nerve.	

Label Elements

Signal Word
Danger

Hazard Statements
Highly flammable liquid and vapor

Harmful in contact with skin
Causes damage to organs

Precautionary Statements
Prevention
Wear protective gloves/protective clothing/eye protection/face protection
Do not breathe dust/fume/gas/mist/vapors/spray
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
Keep container tightly closed
Ground and bond container and receiving equipment
Take action to prevent static discharges
Response
Get medical attention/advice if you feel unwell
Skin
Call a POISON CENTER or doctor if you feel unwell
Take off contaminated clothing
IF ON SKIN: Wash with plenty of soap and water
Fire
Explosion risk
Fight fire with normal precautions from a reasonable distance
Evacuate area
Storage
Store in a well-ventilated place. Keep cool
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)

Hazards classified under paragraph (d)(1)(ii) of 1910.1200
No information available
Other hazards
May cause skin, eye, and respiratory tract irritation.
WARNING. Reproductive Harm - https://www.p65warnings.ca.gov/.

3. Composition/information on Ingredients

Component	CAS No	Weight %
Trimethyl borate	121-43-7	>95
Methyl alcohol	67-56-1	0.2-0.25

4. First-aid measures

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

Inhalation	Remove to fresh air. If breathing is difficult, give oxygen. 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. Immediate medical attention is required.
Ingestion	Do NOT induce vomiting. Call a physician or poison control center immediately.
Most important symptoms and effects	Difficulty in breathing. . Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting
Notes to Physician	Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media	Water spray, carbon dioxide (CO2), dry chemical, alcohol-resistant foam. Water mist may be used to cool closed containers.
Unsuitable Extinguishing Media	No information available
Flash Point	-8 °C / 17.6 °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
Flammable. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.

Hazardous Combustion Products
Carbon monoxide (CO). Carbon dioxide (CO_2). Oxides of boron. Methanol.
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	3	0	N/A

6. Accidental release measures

Personal Precautions	Ensure adequate ventilation. Use personal protective equipment as required. Remove all sources of ignition. Take precautionary measures against static discharges. Avoid contact with skin, eyes or clothing.
Environmental Precautions	Should not be released into the environment. See Section 12 for additional Ecological Information.
Methods for Containment and Clean Up	Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. 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/face protection. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. Use

spark-proof tools and explosion-proof equipment. Take precautionary measures against static discharges. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded.

Storage. Keep containers tightly closed in a dry, cool and well-ventilated place. Flammables area. Keep away from heat, sparks and flame. Store under an inert atmosphere. Incompatible Materials. Strong oxidizing agents.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH	Mexico OEL (TWA)
Methyl alcohol	TWA: 200 ppm STEL: 250 ppm Skin	(Vacated) TWA: 200 ppm (Vacated) TWA: 260 mg/m^3 (Vacated) STEL: 250 ppm (Vacated) STEL: 325 mg/m^3 Skin TWA: 200 ppm TWA: 260 mg/m^3	IDLH: 6000 ppm REL = 200 ppm (TWA) REL = 260 mg/m^3 (TWA) STEL: 250 ppm STEL: 325 mg/m^3	TWA: 200 ppm STEL: 250 ppm

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH: NIOSH - National Institute for Occupational Safety and 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.

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 Wear appropriate protective gloves and clothing to prevent skin exposure.

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.

Recommended Filter type: Organic gases and vapours filter. Type A. Brown. conforming to EN14387.

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

9. Physical and chemical properties

Appearance

Physical State	Liquid		
Color	Colorless		
Odor	No information available		
Odor Threshold	No information available		
Property	**Values**	**Remarks**	**• Method**
Melting Point/Range	-34 °C / -29.2 °F		
Softening Point	No data available		
Boiling Point/Range	68 - 69 °C / 154.4 - 156.2 °F	@ 760 mmHg	
Flash Point	-8 °C / 17.6 °F	**Method -** No information available	

Flammability (liquid)	Highly flammable	On basis of test data
Flammability (solid,gas)	Not applicable	Liquid
Explosion Limits	No data available	
Autoignition Temperature	No data available	
Decomposition Temperature	No data available	
pH	No information available	
Viscosity	0.36 mPa.s @ 25°C	
Water Solubility	reacts	
Solubility in other solvents	No information available	
Partition Coefficient (n-octanol/water)		
Component	**log Pow**	
Trimethyl borate	-0.77	
Methyl alcohol	-0.74	
Vapor Pressure	132 mmHg @ 25 °C	
Density / Specific Gravity	0.915	
Bulk Density	Not applicable	Liquid
Vapor Density	3.6 (Air = 1.0)	(Air = 1.0)
Particle characteristics	Not applicable (liquid)	

Other Information

Molecular Formula	C3 H9 O3 B
Molecular Weight	103.91
Explosive Properties	Vapors may form explosive mixtures with air
Evaporation Rate	No information available

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Moisture sensitive.

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

Incompatible Materials Strong oxidizing agents

Hazardous Decomposition Products Carbon monoxide (CO), Carbon dioxide (CO_2), Oxides of boron, Methanol

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Information on expected route of exposure

Inhalation May cause irritation of respiratory tract. May be harmful if inhaled.

Ingestion Poison, may be fatal or cause blindness if swallowed. CANNOT BE MADE NON-POISONOUS. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Eyes May cause irritation.

Skin Harmful in contact with skin. May cause irritation.

Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Trimethyl borate	LD50 = 6140 mg/kg (Rat)	LD50 = 1980 mg/kg (Rabbit)	-

Methyl alcohol	LD50 = 1187 – 2769 mg/kg (Rat)	LD50 = 17100 mg/kg (Rabbit)	LC50 = 128.2 mg/L (Rat) 4 h

Toxicologically Synergistic Products No information available

(b) skin corrosion/irritation; No data available

(c) serious eye damage/irritation; No data available

(d) respiratory or skin sensitization;
Respiratory No data available
Skin No data available

Component	Test method	Test species	Study result
Methyl alcohol 67-56-1 (0.2-0.25)	OECD Test Guideline 406 Guinea Pig Maximisation Test (GPMT)	guinea pig	non-sensitising

(e) germ cell mutagenicity; No data available

(f) carcinogenicity;

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

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Trimethyl borate	121-43-7	Not listed	Not listed	Not listed	Not listed	Not listed
Methyl alcohol	67-56-1	Not listed	Not listed	Not listed	Not listed	Not listed

(g) reproductive toxicity; No data available

Component	Test method	Test species / Duration	Study result
Methyl alcohol 67-56-1 (0.2-0.25)	OECD Test Guideline 416	Rat / Inhalation 2 Generation	NOAEC = 1.3 mg/l (air)

(h) STOT-single exposure; No data available

(i) STOT-repeated exposure; No data available

Target Organs No information available.

(j) aspiration hazard; No data available

Symptoms / effects,both acute and delayed Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

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

Endocrine Disrupting Properties This product does not contain any known or suspected endocrine disruptors.

12. Ecological information

Ecotoxicity
Do not empty into drains.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea

Methyl alcohol	Not listed	Pimephales promelas: LC50 > 10000 mg/L 96h	EC50 = 39000 mg/L 25 min EC50 = 40000 mg/L 15 min EC50 = 43000 mg/L 5 min	EC50 > 10000 mg/L 24h

Persistence and Degradability Persistence is unlikely based on information available.

Bioaccumulation/ Accumulation No information available.

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

Component	log Pow
Trimethyl borate	-0.77
Methyl alcohol	-0.74

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
Methyl alcohol - 67-56-1	U154	-

14. Transport information

DOT

UN-No UN2416
Proper Shipping Name TRIMETHYL BORATE
Hazard Class 3
Packing Group II

TDG

UN-No UN2416
Proper Shipping Name TRIMETHYL BORATE
Hazard Class 3
Packing Group II

IATA

UN-No UN2416
Proper Shipping Name Trimethyl borate
Hazard Class 3
Packing Group II

IMDG/IMO

UN-No UN2416
Proper Shipping Name Trimethyl borate
Hazard Class 3
Packing Group II

15. Regulatory Information

United States of America Inventory

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	TSCA - EPA Regulatory Flags
Trimethyl borate	121-43-7	X	ACTIVE	-
Methyl alcohol	67-56-1	X	ACTIVE	-

Legend:
TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)
X - Listed
'-' - Not Listed

TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT) Not applicable

TSCA 12(b) - Notices of Export Not applicable

International Inventories

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

Component	CAS No	DSL	NDSL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
Trimethyl borate	121-43-7	X	-	204-468-9	X	X	X	X	X	KE-03514
Methyl alcohol	67-56-1	X	-	200-659-6	X	X	X	X	X	KE-23193

KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Component	CAS No	Weight %	SARA 313 - Threshold Values %	SARA 313 - Reporting threasholds
Methyl alcohol	67-56-1	0.2-0.25	1.0 %	-

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act) Not applicable

Clean Air Act

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Methyl alcohol	X		-

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) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

Component	Hazardous Substances RQs	CERCLA Extremely Hazardous Substances RQs	SARA Reportable Quantity (RQ)
Methyl alcohol	5000 lb	-	5000 lb 2270 kg

California Proposition 65 This product contains the following Proposition 65 chemicals.

Component	CAS No	California Prop. 65	Prop 65 NSRL	Category
Methyl alcohol	67-56-1	Developmental	-	Developmental

U.S. State Right-to-Know Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Trimethyl borate	X	X	X	-	-
Methyl alcohol	X	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 Serious risk, Grade 3

Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Trimethyl borate	121-43-7	-	-	-
Methyl alcohol	67-56-1	-	Use restricted. See entry 69. (see link for restriction details) Use restricted. See entry 75. (see link for restriction details)	-

REACH links
https://echa.europa.eu/substances-restricted-under-reach

Safety, health and environmental regulations/legislation specific for the substance or mixture

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Trimethyl borate	121-43-7	Listed	Not applicable	Not applicable	Not applicable
Methyl alcohol	67-56-1	Listed	Not applicable	Not applicable	Not applicable

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?
Not applicable

Other International Regulations

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Trimethyl borate	121-43-7	Not applicable	Not applicable	Not applicable	Not applicable
Methyl alcohol	67-56-1	500 tonne	5000 tonne	Not applicable	Not applicable

16. Other Information

Prepared By Product stewardship (Regulatory Affairs)
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Revision Summary	Updated to the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) which published its Final Rule in the Federal Register revising the Hazard Communication Standard (HCS/HazCom), 29 CFR 1910.1200 (2024) (HCS §1910.1200, 2024), May 20, 2024, effective July 19, 2024.

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