

Classified as hazardous in accordance with the criteria of EPA New Zealand

Section 1 - Identification

Product Identifier

Product Name <u>Bromoform, 97%, stab. with ethanol</u>

CAS No 75-25-2

Synonyms Methenyl Tribromide.; Tribromomethane

Molecular FormulaC H Br3Molecular Weight252.73

Recommended Use Laboratory chemicals.
Uses advised against No Information available

Product Code A11904

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Section 2 - Hazard(s) Identification

Classification under Work Safe New Zealand

Classified as hazardous in accordance with the criteria of EPA New Zealand

HSNO Approval Number HSR002654

GHS Classification

Physical hazards

Based on available data, the classification criteria are not met

Health hazards

Acute Oral Toxicity

Acute Inhalation Toxicity - Vapors

Skin Corrosion/Irritation

Serious Eye Damage/Eye Irritation

Category 2

Category 2

Category 2

Category 2

Environmental hazards

Chronic aquatic toxicity Category 2

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Label Elements



Signal Word

Danger

Hazard Statements

H315 - Causes skin irritation

H319 - Causes serious eye irritation

H331 - Toxic if inhaled

H302 - Harmful if swallowed

H411 - Toxic to aquatic life with long lasting effects

Precautionary Statements

Prevention

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray

P264 - Wash face, hands and any exposed skin thoroughly after handling

P270 - Do not eat, drink or smoke when using this product

P280 - Wear protective gloves/protective clothing/eye protection/face protection

P271 - Use only outdoors or in a well-ventilated area

P273 - Avoid release to the environment

Response

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water

P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P311 - Call a POISON CENTER or doctor

P330 - Rinse mouth

P362 + P364 - Take off contaminated clothing and wash it before reuse

P391 - Collect spillage

Storage

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

P405 - Store locked up

Disposal

P501 - Dispose of contents/ container to an approved waste disposal plant

Other hazards which do not result in classification

This product does not contain any known or suspected endocrine disruptors

Section 3 - Composition and Information on Ingredients

Component	CAS No	Weight %
Bromoform	75-25-2	>95
Ethyl alcohol	64-17-5	3 - 5

Section 4 - First Aid Measures

Description of first aid measures

General Advice

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

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Inhalation Remove to fresh air. If not breathing, give artificial respiration. 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.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. 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.

Ingestion Do NOT induce vomiting. Call a physician or poison control center immediately.

Self-Protection of the First Aider Ensure that medical personnel are aware of the material(s) involved, take precautions to

protect themselves and prevent spread of contamination.

First Aid Facilities Eyewash, safety shower and washroom.

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. Symptoms may be delayed.

Section 5 - Fire Fighting Measures

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Extinguishing media which must not be used for safety reasons

No information available.

Specific Hazards Arising from the Chemical

Thermal decomposition can lead to release of irritating gases and vapors.

Hazardous Combustion Products

Carbon monoxide (CO), Carbon dioxide (CO2), Hydrogen halides.

Special protective equipment and precautions for fire fighters

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.

Section 6 - Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures

Emergency procedures

Ensure adequate ventilation. Use personal protective equipment as required. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas.

Environmental Precautions

Do not flush into surface water or sanitary sewer system.

Methods for Containment and Clean Up

Keep in suitable, closed containers for disposal. Soak up with inert absorbent material.

Precautions to prevent secondary hazards

Clean contaminated objects and areas thoroughly observing environmental regulations

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Reference to Other Sections

Refer to protective measures listed in Sections 8 and 13.

Section 7 - Handling and Storage

Precautions for Safe Handling

Advice on safe handling

Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

Conditions for Safe Storage, Including any Incompatibilities

Storage Conditions

Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Do not store in metal containers. Keep away from oxidizing agents.

Incompatible Materials

Strong bases. Bases. Strong oxidizing agents. Metals.

AS/NZS 2243.10:2004, Safety in laboratories - Storage of chemicals

Section 8 - Exposure Controls and Personal Protection

Control parameters

Exposure limits

NZ - Workplace Exposure Standards and Biological Exposure Indices (6th edition). New Zealand Department of Labor **UK** - EH40/2005 Work Exposure Limits, Fourth edition. Published 2020.

ACGIH - Threshold Limit Values - Ceiling (TLV-C) guidelines by the American Conference of Governmental Industrial Hygienists (ACGIH) for controlling worker exposure to airborne chemical concentrations in the workplace.

AUS - Exposure Standards for Atmospheric Contaminants in the Occupational Environment - Guidance Note on the Interpretation of Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:3008(1995)] Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995)] updated in August, 2005. Safe Work Australia

Component	New Zealand WEL	Australia	ACGIH TLV	The United Kingdom
Bromoform	TWA: 0.5 ppm	TWA: 0.5 ppm	TWA: 0.5 ppm	
	TWA: 5.2 mg/m ³	TWA: 5.2 mg/m ³		
	Skin			
Ethyl alcohol	TWA: 1000 ppm	TWA: 1000 ppm	STEL: 1000 ppm	TWA: 1000 ppm TWA; 1920
	TWA: 1880 mg/m ³	TWA: 1880 mg/m ³		mg/m³ TWA
				WEL - STEL: 3000 ppm
				STEL; 5760 mg/m ³ STEL

Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering Measures

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

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Individual protection measures, such as personal protective equipment

Eye Protection Goggles (Australian/New Zealand Standard AS/NZS 1337 - Eye protectors for Industrial

applications)

Hand Protection Protective gloves

Glove material	Breakthrough time	Glove thickness	AUS/NZ Standard	Glove comments
Viton (R).	See manufacturers	-	AS/NZS 2161	(minimum requirement)
	recommendations			

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

Skin and body protection Long sleeved clothing

Repiratory Protection Use an AS/NZS 1716 approved respirator if exposure limits are exceeded or if irritation or

other symptoms are experienced. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained in line with AS/NZS 1715 on the use

Liquid

and maintenance of repiratory protective devices

Recommended Filter type: Organic gases and vapours filter Type A Brown conforming to EN14387 (or AUS/NZ

equivalent)

Recommended half mask:- Valve filtering: EN405 or Half mask: EN140 plus filter, EN 141 (or AUS/NZ equivalent)

When RPE is used a face piece Fit Test should be conducted

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

Environmental exposure controls Prevent product from entering drains. Do not allow material to contaminate ground water

system.

Section 9 - Physical and Chemical Properties

Information on basic physical and chemical properties

Physical State Liquid

Appearance Yellow-orange Odor sweet

Odor Threshold No data available

pH No information available

Melting Point/Range 8 °C / 46.4 °F Softening Point No data available

Boiling Point/Range 150 - 151 °C / 302 - 303.8 °F

Flammability (liquid) No data available Flammability (solid,gas) Not applicable

Explosion Limits No data available

Flash Point No information available Method - No information available

Autoignition TemperatureNo data availableDecomposition TemperatureNo data availableViscosityNo data available

Water Solubility Soluble

Solubility in other solvents No information available

Partition Coefficient (n-octanol/water)

Componentlog PowBromoform2.16Ethyl alcohol-0.32

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Vapor Pressure 6.6 hPa @ 20 °C

Density / Specific Gravity2.8CalculatedBulk DensityNot applicableLiquidVapor Density8.7(Air = 1.0)

Particle characteristics Not applicable (liquid)

Other information

Molecular FormulaC H Br3Molecular Weight252.73

Section 10 - Stability and Reactivity

Reactivity None known, based on information available

Stability Stable under normal conditions. Light sensitive.

Sensitivity to Mechanical Impact No information available

Sensitivity to Static Discharge No information available

Hazardous Polymerization No information available.

Hazardous Reactions None under normal processing.

Conditions to Avoid Exposure to light, Incompatible products.

Incompatible Materials Strong bases, Bases, Strong oxidizing agents, Metals.

Hazardous Decomposition Products Carbon monoxide (CO). Carbon dioxide (CO2). Hydrogen halides.

Section 11 - Toxicological Information

Acute Effects

Information on likely routes of exposure

Product Information

InhalationNot an expected route of exposure.EyesAvoid contact with eyes. Irritating to eyes.SkinAvoid contact with skin. May cause irritation.

Ingestion May be harmful if swallowed.

Numerical measures of toxicity

(a) acute toxicity;

OralCategory 4DermalNo data availableInhalationCategory 3

Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Bromoform	LD50 = 933 mg/kg (Rat)		
Ethyl alcohol	LD50 = 10470 mg/kg OECD 401 (Rat) 3450 mg/kg (Mouse)		LC50 = 117-125 mg/l (4h) OECD 403 (rat) 20000 ppm/10H (rat)

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(b) skin corrosion/irritation; Category 2

(c) serious eye damage/irritation; Category 2

(d) respiratory or skin sensitization;

RespiratorySkin
Based on available data, the classification criteria are not met
Based on available data, the classification criteria are not met

Component	Test method	Test species	Study result
Ethyl alcohol 64-17-5 (3 - 5)	Mouse Ear Swelling Test (MEST)	mouse	non-sensitising
04 17 3 (3 3)	OECD Test Guideline 429 Local Lymph Node Assay	mouse	non-sensitising

(e) germ cell mutagenicity; Based on available data, the classification criteria are not met

Component	Test method	Test species	Study result
Ethyl alcohol	AMES test	in vitro	negative
64-17-5 (3 - 5)	OECD Test Guideline 471	Bacteria	
	Gene cell mutation		
	OECD Test Guideline 476	in vitro	negative
		Mammalian	_

(f) carcinogenicity; Based on available data, the classification criteria are not met

Ethanol has been shown to be carcinogenic in long-term studies only when consumed and abused as an alcoholic beverage. The table below indicates whether each agency has listed any ingredient as a carcinogen

Comp	onent	New Zealand	Australia	New South Wales	Western Australia	IARC	EU	UK	Germany
Bromo	oform								Cat. 2

(g) reproductive toxicity; Based on available data, the classification criteria are not met

Component	Test method	Test species / Duration	Study result
Ethyl alcohol 64-17-5 (3 - 5)	OECD Test Guideline 416	Oral / mouse 2 Generation	NOAEL = 13.8 g/kg/day
04-17-3 (3-3)	OECD Test Guideline 414	Inhalation / Rat	NOAEC = 16000 ppm

(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.

Section 12 - Ecological Information

Ecotoxicity

Aquatic ecotoxicity Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic

environment. The product contains following substances which are hazardous for the

environment.

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Component	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Ethyl alcohol	Fathead minnow	EC50 = 9268 mg/L/48h	EC50 (72h) = 275 mg/l	Photobacterium
	(Pimephales promelas)	EC50 = 10800 mg/L/24h	(Chlorella vulgaris)	phosphoreum:EC50 =
	LC50 = 14200 mg/l/96h			34634 mg/L/30 min
				Photobacterium
				phosphoreum:EC50 =
				35470 mg/L/5 min

Terrestrial ecotoxicity

Component	Earthworm	Avian	Honeybees
Ethyl alcohol	Acute toxicity: LC50 0.1 - 1		
	mg/cm2 (Eisenia foetida, 48 h,		
	filter paper)		

Persistence and Degradability

Persistence Persistence is unlikely.

Component	Degradability
Ethyl alcohol	OECD 301E = 94%
64-17-5 (3-5)	

Degradation in sewage treatment plant

Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

Bioaccumulative Potential Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Bromoform	2.16	No data available
Ethyl alcohol	-0.32	No data available

Mobility The product is water soluble, and may spread in water systems. Will likely be mobile in

the environment due to its water solubility. Highly mobile in soils

Other adverse effects

Endocrine Disruptor Information Persistent Organic Pollutant Ozone Depletion Potential This product does not contain any known or suspected endocrine disruptors

This product does not contain any known or suspected substance This product does not contain any known or suspected substance

Section 13 - Disposal Considerations

Waste treatment methods

Waste from Residues/Unused Products

Do not allow into drains or watercourses or dispose of where ground or surface waters may be affected. Wastes, including emptied containers, are controlled wastes and should be disposed of in accordance with all federal, E.P.A., state and local regulations. Assure

conformity with all applicable regulations.

Contaminated Packaging Dispose of this container to hazardous or special waste collection point.

Other Information Disposal agencies or waste contractors must comply with the New Zealand Hazardous

Substances (Disposal) Regulations . Do not flush to sewer. Waste codes should be assigned by the user based on the application for which the product was used. Do not

empty into drains. Do not let this chemical enter the environment.

Section 14 - Transport Information

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Component	Hazchem Code
Bromoform	2X
75-25-2 (>95)	
Ethyl alcohol	2YE
64-17-5 (3 - 5)	2Y

NZS 5433:2020

UN2515 UN-No

Proper Shipping Name BROMOFORM

Hazard Class 6.1 **Packing Group** Ш

IATA

UN-No UN2515

BROMOFORM Proper Shipping Name

Hazard Class 6.1 **Packing Group** Ш

IMDG/IMO

UN2515 **UN-No Proper Shipping Name BROMOFORM**

Hazard Class 6.1 Ш **Packing Group**

Component	IMDG Marine Pollutant
Bromoform	IMDG regulated marine pollutant (UN2515)
75-25-2 (>95)	

Environmental hazards Dangerous for the environment

Product is a marine pollutant according to the criteria set by IMDG/IMO

Transport in bulk according to Annex II of MARPOL 73/78 and the

IBC Code

Not applicable, packaged goods

Special Precautions

No special precautions required. Please refer to the applicable dangerous goods

regulations for additional information.

None known **Additional information**

Section 15 - Regulatory Information

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

HSNO Approval Number HSR002654	
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National Regulations

There are no applicable tolerable exposure limits or environmental exposure limits according to the EPA Controls for Hazardous Substances

Certified handlers, tracking and controlled substance license requirements

Certified handlers are required for some substances. This includes substances requiring a controlled substance license, and most explosives, vertebrates toxic agents, and certain fumigants. Acutely toxic substances which are a Category 1 or 2, such as pesticides also require Certified handlers. Please check the Health and Safety at Work Act 2015 for further information. Tracking is required for some highly hazardous substances. These substances need to be under the control of an appropriately trained person or appropriately secured. Please check the Health and Safety at Work Act 2015 for further information.

Prohibition or notification/licensing requirements

Shown below are details of specific prohibition/notifications or licencing requirements when they apply.

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International Regulations

Ozone Depletion Potential This product does not contain any known or suspected substance

Persistent Organic Pollutant This product does not contain any known or suspected substance

Rotterdam Convention (PIC) Not applicable

Component	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	IMDG Marine Pollutant
Bromoform			IMDG regulated marine pollutant (UN2515)

Authorisation/Restrictions according to EU REACH

Component		REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	
Bromoform	-	Use restricted. See item 75. (see link for restriction details)	-

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

International Inventories

New Zealand (NZIoC), Australia (AICS), Europe (EINECS/ELINCS/NLP), Korea (KECL), China (IECSC), Taiwan (TCSI), Japan (ISHL), Canada (DSL/NDSL), Philippines (PICCS). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

Component	CAS No	NZIoC	AICS	EINECS	ELINCS	NLP	KECL	IECSC	TCSI
Bromoform	75-25-2	X	X	200-854-6	i	-	KE-34017	Χ	X
Ethyl alcohol	64-17-5	X	X	200-578-6	-	-	KE-13217	X	Х

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	PICCS	ISHL	ENCS
Bromoform	75-25-2	Х	ACTIVE	X	-	X	Х	X
Ethyl alcohol	64-17-5	Х	ACTIVE	X	-	Х	Х	Х

Legend: X - Listed '-' - Not Listed

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

Section 16 - Other Information

This safety data sheet complies with the requirements of the EPA Hazardous Substances (Hazard Classification) Notice 2020 and WorkSafe New Zealand Regulations

Legend

NZIoC - New Zealand Inventory of Chemicals

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

IECSC - Chinese Inventory of Existing Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

TWA - Time Weighted Average

IARC - International Agency for Research on Cancer

NZS 5433:2020 - Transport of Dangerous Goods on Land

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association

MARPOL - International Convention for the Prevention of Pollution from

AICS - Australian Inventory of Chemical Substances

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

ENCS - Japanese Existing and New Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

CAS - Chemical Abstracts Service

ACGIH - American Conference of Governmental Industrial Hygienists

PNEC - Predicted No Effect Concentration

OECD - Organisation for Economic Co-operation and Development **IMO/IMDG** - International Maritime Organization/International Maritime

Dangerous Goods Code

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Ships ADG - Australian Code for the Transport of Dangerous Goods by Road

and Ra

LD50 - Lethal Dose 50% **EC50** - Effective Concentration 50% **ATE** - Acute Toxicity Estimate

WEL - Workplace Exposure Limit

DNEL - Derived No Effect Level

POW - Partition coefficient Octanol:Water

RPE - Respiratory Protective Equipment

NOEC - No Observed Effect Concentration

BCF - Bioconcentration factor

vPvB - very Persistent, very Bioaccumulative PBT - Persistent, Bioaccumulative, Toxic

VOC - (Volatile Organic Compound)

Key literature references and sources for data

HSNO classifications provided in the New Zealand Chemical Classification Information Database (CCID).

https://echa.europa.eu/information-on-chemicals

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

EPA Guide to classifying hazardous substances in New Zealand

EPA - Assigning a product to an existing HSNO approval guide

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Physical hazards
On basis of test data
Health Hazards
Calculation method
Environmental hazards
Calculation method

Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

First aid for chemical exposure, including the use of eye wash and safety showers.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

Chemical incident response training.

Revision Date 05-Feb-2024

Revision Summary New emergency telephone response service provider

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 Safety Data Sheet

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