

Safety Data Sheet according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations Date of issue: 04/23/2019 Revision date: 04/23/2019 Version: 1.0

SECTION 1: Identification	
1.1. Identification	
Product form	: Mixture
Product name	: 1,2-Dibromoethane Standard
Product code	: AL0-101303
1.2. Recommended use and restrictions	on use
No additional information available	
1.3. Supplier	
Phenova 6390 Joyce Dr. Suite 100 Golden, CO 80403 - United States T 1-866-942-2978 - F 1-866-283-0269 info@phenova.com - www.phenova.com	
1.4. Emergency telephone number	
Emergency number	: ChemTel Assistance (US/Canada) 1-800-255-3924 ChemTel Assistance (International) +1 813-248-0585
SECTION 2: Hazard(s) identification	

2.1. Classification of the substance or mixture

GHS_US classification

GHS-US classification		
Flammable liquids Category 2	H225	Highly flammable liquid and vapour
Acute toxicity (oral) Category 3	H301	Toxic if swallowed
Acute toxicity (dermal) Category 3	H311	Toxic in contact with skin
Carcinogenicity Category 1B	H350	May cause cancer
Specific target organ toxicity (single exposure) Category 1	H370	Causes damage to organs
Full text of H statements : se	ee section 16	

GHS Label elements, including precautionary statements 2.2.

GHS-US labeling

Hazard pictograms (GHS-US)	
Signal word (GHS-US)	: Danger
Hazard statements (GHS-US)	: H225 - Highly flammable liquid and vapour H301+H311 - Toxic if swallowed or in contact with skin H350 - May cause cancer H370 - Causes damage to organs
Precautionary statements (GHS-US)	 P210 - Keep away from heat/sparks/open flames/hot surfaces No smoking. P233 - Keep container tightly closed. P260 - Do not breathe dust/fume/gas/mist/vapors/spray. P270 - Do not eat, drink or smoke when using this product. P280 - Wear protective gloves/protective clothing/eye protection/face protection. P301+P310 - If swallowed: Immediately call a poison center or doctor P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower P308+P313 - If exposed or concerned: Get medical advice/attention. P361+P364 - Take off immediately all contaminated clothing and wash it before reuse. P370+P378 - In case of fire: Use media other than water to extinguish. P403+P235 - Store in a well-ventilated place. Keep cool. P501 - Dispose of contents/container to hazardous or special waste collection point, in

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accordance with local, regional, national and/or international regulation

	accordance with local, regional, national and/or in	ternational regulation	
2.3. Other hazards which do not result in classification			
No additional information available			
2.4. Unknown acute toxicity (GHS US)			
Not applicable			
SECTION 3: Composition/Information	on ingredients		
3.1. Substances			
Not applicable			
3.2. Mixtures			
Name		Product identifier	Conc.
methanol		(CAS-No.) 67-56-1	99.8
1,2-Dibromoethane		(CAS-No.) 106-93-4	0.2
Full text of hazard classes and H-statements : see	e section 16		
SECTION 4: First-aid measures			
4.1. Description of first aid measures			
First-aid measures general	: Never give anything by mouth to an unconscious doctor/physician. IF exposed or concerned: Get m		R or
First-aid measures after inhalation	: Remove victim to fresh air and keep at rest in a po call a poison center or doctor/physician.	osition comfortable for breathing	. Immediately
First-aid measures after skin contact	: Rinse skin with water/shower. Remove/Take off ir Immediately call a poison center or doctor/physici Wash contaminated clothing before reuse.		
First-aid measures after eye contact	Remove contact lenses, if present and easy to do. Continue rinsing. Rinse cautiously with water for several minutes. Obtain medical attention if pain, blinking or redness persists.		
First-aid measures after ingestion	 Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. Immediately call a poison center or doctor/physician. 		nediately call a
4.2. Most important symptoms and effect	s (acute and delayed)		
Potential Adverse human health effects and symptoms	: Toxic if swallowed. Toxic in contact with skin. Tox	ic if inhaled.	
Symptoms/effects after inhalation	: Toxic if inhaled. Danger of serious damage to health by prolonged exposure through inhalation.		
Symptoms/effects after skin contact	Repeated exposure to this material can result in absorption through skin causing significant health hazard. Toxic in contact with skin.		
Symptoms/effects after ingestion	: Toxic if swallowed. Swallowing a small quantity of hazard.	this material will result in seriou	us health
4.3. Immediate medical attention and spe	cial treatment, if necessary		
No additional information available			
SECTION 5: Fire-fighting measures			
5.1. Suitable (and unsuitable) extinguishi	ng media		
Suitable extinguishing media	: Use extinguishing media appropriate for surround	ing fire.	
Unsuitable extinguishing media	: Do not use a heavy water stream.		
5.2. Specific hazards arising from the che	mical		
Fire hazard	: Highly flammable liquid and vapour.		
Explosion hazard	: May form flammable/explosive vapor-air mixture.		
5.3. Special protective equipment and pro	ecautions for fire-fighters		
Firefighting instructions	: Use water spray or fog for cooling exposed contai		hting any
Protection during firefighting	chemical fire. Prevent fire-fighting water from enter : Do not enter fire area without proper protective ex-	U U	rotection.
SECTION 6: Accidental release man			
SECTION 6: Accidental release meas			
6.1. Personal precautions, protective equ	ipment and emergency procedures		
6.1.1. For non-emergency personnel	E		
Emergency procedures	: Evacuate unnecessary personnel.		
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6.1.2. For emergency responders		
Protective equipment	: Equip cleanup crew with proper protection. Avoid breathing dust/fume/gas/mist/vapors/spray.	
Emergency procedures	: Ventilate area.	
6.2. Environmental precautions		
Prevent entry to sewers and public waters. Notif	y authorities if liquid enters sewers or public waters.	
6.3. Methods and material for containme	ent and cleaning up	
Methods for cleaning up	: Take up in absorbent material. Collect spillage.	
6.4. Reference to other sections		
See Heading 8. Exposure controls and personal	protection.	
SECTION 7: Handling and storage		
7.1. Precautions for safe handling		
Additional hazards when processed	: Handle empty containers with care because residual vapors are flammable.	
Precautions for safe handling	Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. No open flames. No smoking. Use only non-sparking tools. Use only outdoors or in a well-ventilated area.	
Hygiene measures	: Do not eat, drink or smoke when using this product. Gently wash with plenty of soap and water. Remove/Take off immediately all contaminated clothing. Wash contaminated clothing before reuse.	
7.2. Conditions for safe storage, including any incompatibilities		
Technical measures	 Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. 	
Storage conditions	: Keep in fireproof place. Keep container tightly closed. Keep container tightly closed and in a well-ventilated place. Keep away from any flames or sparking source.	

: Direct sunlight. Heat sources.

Incompatible materials

SECTION 8: Exposure controls/personal protection

8.1. Control parameters			
1,2-Dibromoethane S	Standard		
ACGIH	Local name	Methanol	
ACGIH	ACGIH TWA (ppm)	200 ppm	
ACGIH	ACGIH STEL (ppm)	250 ppm	
ACGIH	Remark (ACGIH)	Headache; eye dam; dizziness; nausea	
ACGIH	Regulatory reference	ACGIH 2018	
OSHA	OSHA PEL (TWA) (mg/m ³)	260 mg/m ³	
OSHA	OSHA PEL (TWA) (ppm)	200 ppm	
OSHA	Regulatory reference (US-OSHA)	OSHA	
methanol (67-56-1)			
ACGIH	Local name	Methanol	
ACGIH	ACGIH TWA (ppm)	200 ppm (Methanol; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)	
ACGIH	ACGIH STEL (ppm)	250 ppm (Methanol; USA; Short time value; TLV - Adopted Value)	
ACGIH	Remark (ACGIH)	Headache; eye dam; dizziness; nausea	
ACGIH	Regulatory reference	ACGIH 2018	
OSHA	OSHA PEL (TWA) (mg/m ³)	260 mg/m ³	
OSHA	OSHA PEL (TWA) (ppm)	200 ppm	
OSHA	Regulatory reference (US-OSHA)	OSHA	
1,2-Dibromoethane (1,2-Dibromoethane (106-93-4)		
OSHA	Acceptable maximum peak above the acceptable ceiling concentration for an 8-hr shift	50 ppm 5 mins.	

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1,2-Dibromoethane (106-93-4)		
OSHA	Remark (OSHA)	(2) See Table Z-2.
OSHA	Regulatory reference (US-OSHA)	OSHA

8.2. Appropriate engineering controls

Appropriate engineering controls : Either local exhaust or general room ventilation is usually required.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Avoid all unnecessary exposure. Gloves. Protective clothing. Protective goggles. Safety glasses.

Hand protection:

Wear chemically resistant protective gloves. Wear suitable gloves resistant to chemical penetration

Eye protection:

Chemical goggles or safety glasses. Safety glasses

Skin and body protection:

Wear chemically protective gloves, lab coat or apron to prevent prolonged or repeated skin contact

Respiratory protection:

Where exposure through inhalation may occur from use, respiratory protection equipment is recommended

Personal protective equipment symbol(s):



Other information:

Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and	chemical properties
Physical state	: Liquid
Color	: Colorless
Odor	: characteristic
Odor threshold	: No data available
рН	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Highly flammable liquid and vapour.
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Solubility	: No data available
Log Pow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
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1,2-Dibromoethane Standard Safety Data Sheet

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Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
9.2. Other information	
No additional information available	
SECTION 10: Stability and reacti	vitv
10.1. Reactivity	
No additional information available	
10.2. Chemical stability	
Highly flammable liquid and vapour. May fo	rm flammable/explosive vapor air mixture
10.3. Possibility of hazardous reaction	pris
Not established.	
10.4. Conditions to avoid	
Direct sunlight. Extremely high or low tempo	eratures. Open flame.
10.5. Incompatible materials	
No additional information available	
10.6. Hazardous decomposition proc	ducts
May release flammable gases.	
SECTION 11: Toxicological infor	mation
Acute toxicity	: Oral: Toxic if swallowed. Dermal: Toxic in contact with skin.
1,2-Dibromoethane Standard	
ATE US (oral)	100.2 mg/kg body weight
ATE US (dermal)	300.601 mg/kg body weight
methanol (67-56-1)	
LD50 oral rat	> 5000 mg/kg (Rat; BASF test; Literature study; 1187-2769 mg/kg bodyweight; Rat; Weight of evidence)
LD50 dermal rabbit	15800 mg/kg (Rabbit; Literature study)
LC50 inhalation rat (mg/l)	85 mg/l/4h (Rat; Literature study)
LC50 inhalation rat (ppm)	64000 ppm/4h (Rat; Literature study)
ATE US (oral)	100 mg/kg body weight
ATE US (dermal)	300 mg/kg body weight
ATE US (gases)	700 ppmV/4h
ATE US (vapors)	3 mg/l/4h
ATE US (dust, mist)	0.5 mg/l/4h
1,2-Dibromoethane (106-93-4)	
LD50 oral rat	140 mg/kg body weight (Equivalent or similar to OECD 401, Rat, Male / female, Experimental value, Oral)
LD50 dermal rat	300 mg/kg (Rat, Literature study, Dermal)
LC50 inhalation rat (ppm)	 > 200 ppm (Other, 4 h, Rat, Male / female, Experimental value, Inhalation (vapours))
ATE US (oral)	140 mg/kg body weight
ATE US (dermal)	300 mg/kg body weight
ATE US (gases)	700 ppmV/4h
ATE US (vapors)	3 mg/l/4h
ATE US (dust, mist)	0.5 mg/l/4h
Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
	Based on available data, the classification criteria are not met
Carcinogenicity	: May cause cancer.
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1,2-Dibromoethane (106-93-4)	
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen
Reproductive toxicity	: Not classified
	Based on available data, the classification criteria are not met
Specific target organ toxicity – single exposure	: Causes damage to organs.
Specific target organ toxicity – repeated exposure	: Not classified
Aspiration hazard	: Not classified
Potential Adverse human health effects and symptoms	: Toxic if swallowed. Toxic in contact with skin. Toxic if inhaled.
Symptoms/effects after inhalation	: Toxic if inhaled. Danger of serious damage to health by prolonged exposure through inhalation
Symptoms/effects after skin contact	: Repeated exposure to this material can result in absorption through skin causing significant health hazard. Toxic in contact with skin.
Symptoms/effects after ingestion	: Toxic if swallowed. Swallowing a small quantity of this material will result in serious health hazard.

SECTION 12: Ecological information	
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12.1. Toxicity

methanol (67-56-1)		
LC50 fish 1	15400 mg/l (LC50; EPA 660/3 - 75/009; 96 h; Lepomis macrochirus; Flow-through system; Fresh water; Experimental value)	
EC50 Daphnia 1	> 10000 mg/l (EC50; DIN 38412-11; 48 h; Daphnia magna; Static system; Fresh water; Experimental value)	
LC50 fish 2	10800 mg/l (LC50; 96 h; Salmo gairdneri)	
1,2-Dibromoethane (106-93-4)		
LC50 fish 1	1.13 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Oncorhynchus mykiss, Static system, Fresh water, Experimental value, GLP)	
EC50 Daphnia 1	11.61 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, GLP)	

12.2. Persistence and degradability				
1,2-Dibromoethane Standard				
Persistence and degradability Not established.				
methanol (67-56-1)				
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. Highly mobile in soil.			
Biochemical oxygen demand (BOD) 0.6 - 1.12 g O ₂ /g substance				
Chemical oxygen demand (COD) 1.42 g O ₂ /g substance				
ThOD	1.5 g O₂/g substance			
BOD (% of ThOD)	0.8 (Literature study)			
1,2-Dibromoethane (106-93-4)				
Persistence and degradability Non degradable in the soil. Not readily biodegradable in water.				

12.3. Bioaccumulative potential

1,2-Dibromoethane Standard		
Bioaccumulative potential Not established.		
methanol (67-56-1)		
BCF fish 1	< 10 (BCF; 72 h; Leuciscus idus)	
Log Pow	-0.77 (Experimental value; Other)	
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).	
1,2-Dibromoethane (106-93-4)		
BCF fish 1	1.6 - 14.9 (6 week(s), Cyprinus carpio, Literature study)	
Log Pow	1.93 (Experimental value, Equivalent or similar to OECD 107)	
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).	
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methanol (67-56-1)				
Surface tension	0.023 N/m (20 °C)			
Log Koc	Koc, PCKOCWIN v1.66; 1; Calculated value			
1,2-Dibromoethane (106-93-4)				
Surface tension	0.038 N/m (20 °C)			
Log Koc	0.314 (log Koc, OECD 121: Estimation of the Adsorption Coefficient (Koc) on Soil and on Sewage Sludge using High Performance Liquid Chromatography (HPLC), Experimental value, GLP)			
Ecology - soil	Highly mobile in soil.			

Other information

: Avoid release to the environment.

SECTION 13: Disposal considerations				
13.1. Disposal methods				
Product/Packaging disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations.			
Additional information	: Handle empty containers with care because residual vapors are flammable.			
Ecology - waste materials	: Avoid release to the environment. Hazardous waste due to toxicity.			
SECTION 14: Transport information				

Department of Transportation (DOT)

In accordance with DOT

Transport document description	: UN1992 Flammable liquids, toxic, n.o.s. (methanol ; ethylene dibromide), 3 (6.1), II
UN-No.(DOT)	: UN1992
Proper Shipping Name (DOT)	: Flammable liquids, toxic, n.o.s.
	methanol ; ethylene dibromide
Class (DOT)	: 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120
Packing group (DOT)	: II - Medium Danger
Subsidiary risk (DOT)	: 6.1 - Class 6.1 - Poisonous materials 49 CFR 173.132
Hazard labels (DOT)	: 3 - Flammable liquid 6.1 - Poison
	PLANMARKE LIQUID

DOT Packaging Non Bulk (49 CFR 173.xxx)

DOT Packaging Bulk (49 CFR 173.xxx)

DOT Symbols

- DOT Special Provisions (49 CFR 172.102)
- : G Identifies PSN requiring a technical name

TP13 - Self-contained breathing apparatus must be provided when this hazardous material is transported by sea.

DOT Packaging Exceptions (49 CFR 173.xxx) : 150

: 202 : 243

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DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 1	L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 6	50 L
DOT Vessel Stowage Location	p p p	B - (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a bassenger vessel carrying a number of passengers limited to not more than the larger of 25 bassengers, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" on bassenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.
DOT Vessel Stowage Other	: 4	0 - Stow "clear of living quarters"
Emergency Response Guide (ERG) Number	: 1	31
Other information	: N	No supplementary information available.
Transportation of Dangerous Goods		
Not applicable		
Transport by sea		
Transport document description (IMDG)	: U	JN 1992 FLAMMABLE LIQUID, TOXIC, N.O.S., 3 (6.1), II
UN-No. (IMDG)	: 1	992
Proper Shipping Name (IMDG)	: F	LAMMABLE LIQUID, TOXIC, N.O.S.
Class (IMDG)	: 3	3 - Flammable liquids
Packing group (IMDG)	: 11	I - substances presenting medium danger
Subsidiary risks (IMDG)	: 6	6.1 - Toxic substances
Air transport		
Transport document description (IATA)	: U	JN 1992 Flammable liquid, toxic, n.o.s., 3 (6.1), II
UN-No. (IATA)	: 1	992
Proper Shipping Name (IATA)	: F	Flammable liquid, toxic, n.o.s.
Class (IATA)	: 3	3 - Flammable Liquids
Packing group (IATA)	: 11	I - Medium Danger
Subsidiary risks (IATA)	: 6	6.1 - Toxic substances

SECTION 15: Regulatory information

15.1. US Federal regulations

methanol (67-56-1)			
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313			
Listed on EPA Hazardous Air Pollutant (HAPS)			
CERCLA RQ 5000 lb			
1,2-Dibromoethane (106-93-4)			
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313			
Listed on EPA Hazardous Air Pollutant (HAPS)			
CERCLA RQ 1 lb			

15.2. International regulations	
CANADA	
methanol (67-56-1)	
Listed on the Canadian DSL (Domestic Substances List)	
1,2-Dibromoethane (106-93-4)	
Listed on the Canadian DSL (Domestic Substances List)	
Listed on the Canadian DSL (Domestic Substances List) EU-Regulations	
No additional information available	
National regulations	

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methanol (67-56-1)

Listed on EPA Hazardous Air Pollutant (HAPS)

1,2-Dibromoethane (106-93-4)

Listed on IARC (International Agency for Research on Cancer) Listed as carcinogen on NTP (National Toxicology Program) Listed on EPA Hazardous Air Pollutant (HAPS)

15.3. US State regulations

methanol (67-56	5-1)					
U.S California - Proposition 65 - Carcinogens List	U.S California - Proposition 65 - Developmental Toxicity	U.S California - Proposition 65 - Reproductive Toxicity - Female	U.S California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)	
No	Yes	No	No		47000 µg/day (inhalation); 23,000 µg/day (oral)	
1,2-Dibromoeth	1,2-Dibromoethane (106-93-4)					
U.S California - Proposition 65 - Carcinogens List	U.S California - Proposition 65 - Developmental Toxicity	U.S California - Proposition 65 - Reproductive Toxicity - Female	U.S California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)	
Yes	Yes	No	Yes	0.2 μg/day		

SECTION 16: Other information			
Rev	ision date	: 04/23/2019	
Data	a sources	REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.	
Othe	er information	: None.	
Full	text of H-phrases:		
	H225	Highly flammable liquid and vapour	

H225	Highly flammable liquid and vapour	
H301	Toxic if swallowed	
H311	Toxic in contact with skin	
H350	May cause cancer	
H370	Causes damage to organs	

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