



SAFETY DATA SHEET

Classified in accordance with 29 CFR 1910.1200

1. Identification

Product Identifier AFS-682

Trade Name(s): AFSNA702

Product Name: Hydraulic Assembly Lubricant

Product Code:

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

Recommended use: Oil Additive

Details of the supplier of the safety data sheet

Manufacturer	TBM, INC. 8506 Herrington Court Pevely, MO 63070 United States fsptbm.com
Telephone (General)	800-825-1128
Fax	314-721-4519
Emergency telephone number	
Manufacturer	800-424-9300 – CHEMTREC 49-6151-18-4342 – Germany 33-3-88-73-60-00 – France 01-613-996-6666 – Canada (Canutec)

2. Hazard(s) identification

Hazard Classification

Environmental Hazards

Chronic hazards to the aquatic environment	Category 3
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Label Elements

Hazard Symbol:	No symbol
Signal Word:	No signal word.
Hazard Statement:	Harmful to aquatic life with long lasting effects.

Precautionary

Statements

Prevention: Avoid release to the environment.

Disposal: Dispose of contents/ container to an approved facility in accordance with local, regional, national and international regulations.

Hazard(s) not otherwise classified (HNOC): None.

3. Composition/information on ingredients

Mixtures

Chemical Identity	Common name and synonyms	CAS number	Content in percent (%) [*]
distillates (petroleum), solvent-dewaxed heavy paraffinic; baseoil unspecified		64742-65-0	0 - 30.0%
distillates (petroleum), solvent-dewaxed light paraffinic; baseoil - unspecified		64742-56-9	0 - 30.0%
distillates (petroleum), solvent-dewaxed heavy paraffinic; baseoil unspecified		64742-65-0	10.0 - 30.0%
distillates (petroleum), solvent-dewaxed light paraffinic; baseoil - unspecified		64742-56-9	7.0 - 13.0%
isodecyl methacrylate		29964-84-9	0.25 - <2.5%

^{*} All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

Composition Comments: Oil solution of an acrylic polymer

The exact concentration has been withheld as a trade secret.

4. First-aid measures

Description of first aid measures

General information: First aider needs to protect himself. Medical treatment is necessary if symptoms occur which are obviously caused by skin or eye contact with the product or by inhalation of its vapours.

Inhalation: If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If unconscious, evaluate the need for artificial respiration. Get immediate medical attention.

Skin Contact: Immediately wash skin with soap and plenty of water. Remove contaminated clothing. Obtain medical attention immediately if symptoms occur. Wash clothing before reuse.

Eye contact: In case of contact, immediately flush eyes with plenty of water. Obtain medical attention if irritation develops.

Ingestion: Do not induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs. Get medical attention.

Personal Protection for First-aid Responders: First Aid responders should pay attention to self-protection and use the recommended protective clothing

Most important symptoms and effects, both acute and delayed

Symptoms: May cause skin and eye irritation.

Hazards: Product has dermal defatting effect Aspiration in the lungs might cause a chemical pneumonia.

Indication of immediate medical attention and special treatment needed

Treatment: Treat symptomatically.

5. Fire-fighting measures

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Use water spray or fog, foam, dry chemical or CO2.

Unsuitable extinguishing media: Do not use a solid water stream as it may scatter and spread fire.

Special hazards arising from the substance or mixture: In the case of fire, the following hazardous smoke fumes may be produced: carbon monoxide, carbon dioxide.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: Evacuate area and fight fire from a safe distance. Keep people away from and upwind of spill/leak. Containers can build up pressure if exposed to heat (fire). Cool with water spray. When heated above the flash point and/or during spraying (atomizing), ignitable mixtures may form in air. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Special protective equipment for fire-fighters: Use a self-contained breathing apparatus. Wear full protection suit.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Remove all sources of ignition. Ventilate the area. Wear a self-contained breathing apparatus and appropriate personal protective equipment. (See EXPOSURE CONTROLS/PERSONAL PROTECTION.) Immediately remove contaminated clothing.

Accidental release measures: Avoid release to the environment. Remove sources of ignition.

For emergency responders: Isolate defective containers immediately, if possible and safe to do. Shut off leak, if possible and safe to do.

Methods and material for containment and cleaning up:

Floor may be slippery; use care to avoid falling. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

Environmental Precautions:

Obey relevant local, state, provincial and federal laws and regulations. Do not contaminate any lakes, streams, rivers, groundwater or soil.

7. Handling and storage

Handling

Technical measures:

Ensure there is good room ventilation.

Local/Total ventilation:

Ensure suitable suction/aeration at the work place and with operational machinery.

Safe handling advice:

Avoid contact with eyes, skin and clothing. Assure appropriate ventilation. Do not inhale vapor or mist. Follow the instructions on the SDS label even if the container is empty, because there still might be residual product left inside the container. Wash thoroughly after work. Keep container tightly closed. Facilities storing or utilizing this material should be equipped with an eyewash facility. When heated above the flash point and/or during spraying (atomizing), ignitable mixtures may form in air.

Contact avoidance measures:

Wear appropriate personal protective equipment.

Storage

Safe storage conditions:

Keep container tightly closed and in a well-ventilated place. Do not store at temperatures above 100 °C. Low temperature storage can cause handling problems. Viscosity of material will increase.

Safe packaging materials:

No data available.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

Chemical Identity	Type	Exposure Limit Values	Source
distillates (petroleum), solvent-dewaxed heavy paraffinic; baseoil unspecified - Inhalable fraction.	TWA	5 mg/m3	ACGIH (03 2016)
distillates (petroleum), solvent-dewaxed heavy paraffinic; baseoil unspecified - Mist.	REL	5 mg/m3	NIOSH (2010)
	STEL	10 mg/m3	NIOSH (2010)
distillates (petroleum), solvent-dewaxed heavy paraffinic; baseoil unspecified	Ceiling	1,800 mg/m3	NIOSH (2010)

	REL		350 mg/m3	NIOSH (2010)
	PEL	500 ppm	2,000 mg/m3	OSHA Z1 (03 2016)
distillates (petroleum), solvent-dewaxed heavy paraffinic; baseoil unspecified - Mist.	PEL		5 mg/m3	OSHA Z1 (03 2016)
distillates (petroleum), solvent-dewaxed light paraffinic; baseoil - unspecified - Inhalable fraction.	TWA		5 mg/m3	ACGIH (03 2016)
distillates (petroleum), solvent-dewaxed light paraffinic; baseoil - unspecified - Mist.	REL		5 mg/m3	NIOSH (2010)
	STEL		10 mg/m3	NIOSH (2010)
	PEL		5 mg/m3	OSHA Z1 (03 2016)
distillates (petroleum), solvent-dewaxed heavy paraffinic; baseoil unspecified - Inhalable fraction.	TWA		5 mg/m3	ACGIH (03 2016)
distillates (petroleum), solvent-dewaxed heavy paraffinic; baseoil unspecified - Mist.	REL		5 mg/m3	NIOSH (2010)
	STEL		10 mg/m3	NIOSH (2010)
distillates (petroleum), solvent-dewaxed heavy paraffinic; baseoil unspecified	Ceil_Time		1,800 mg/m3	NIOSH (2010)
	REL		350 mg/m3	NIOSH (2010)
	PEL	500 ppm	2,000 mg/m3	OSHA Z1 (03 2016)
distillates (petroleum), solvent-dewaxed heavy paraffinic; baseoil unspecified - Mist.	PEL		5 mg/m3	OSHA Z1 (03 2016)

Please refer to the latest edition of the appropriate source text and consult an industrial hygienist or similar professional, or local agencies, for further information.

Biological Limit Values

No biological exposure limits noted for the ingredient(s).

Appropriate Engineering Controls

Ensure there is good room ventilation.

Individual protection measures, such as personal protective equipment

Eye/face protection:

Use safety glasses (ANSI Z87.1 or approved equivalent).

Skin Protection

Hand Protection:

Additional Information: The glove(s) listed below may provide protection against permeation. Gloves of other chemically resistant materials may not provide adequate protection: nitrile rubber gloves, butyl rubber gloves, Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough.

Skin and Body Protection:	Use chemically resistant apron or other impervious clothing to avoid prolonged or repeated skin contact.
Respiratory Protection:	Up to 10 times the TWA/TLV: Wear a MSHA/NIOSH approved (or equivalent) half-mask, air-purifying respirator. A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 or applicable federal/provincial requirements must be followed whenever workplace conditions warrant respirator use. NIOSH's "Respirator Decision Logic" may be useful in determining the suitability of various types of respirators. Where misting may occur, wear a MSHA/NIOSH approved (or equivalent) half mask, dust/mist air purifying respirator.
Hygiene measures:	Immediately remove contaminated clothing. Follow the usual good standards of occupational hygiene. Store work clothing separately. Use skin protective preparation as preventive skin protection. Cloths contaminated with product should not be kept in trouser pockets.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance

Physical state:	liquid
Form:	liquid
Color:	yellow to amber
Odor:	Sweet
Odor Threshold:	No data available.
Freezing point:	No data available.
Boiling Point:	No data available.
Flammability:	No data available.
Upper/lower limit on flammability or explosive limits	
Explosive limit - upper:	No data available.
Explosive limit - lower:	No data available.
Flash Point:	> 248 °F/> 120 °C Method: ASTM D 3278
Auto-ignition temperature:	No data available.
Decomposition Temperature:	This material is considered stable under specified conditions of storage, shipment and/or use.
pH:	Not applicable

Viscosity

Dynamic viscosity:	No data available.
Kinematic viscosity:	Approximate 1200 mm ² /s at 212 °F/100 °C , Method: ASTM D 445

Flow Time:	No data available.
Solubility(ies)	
Solubility in Water:	Practically Insoluble
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Vapor pressure:	< 1 hPa at 68 °F/20 °C
Relative density:	No data available.
Density:	0.90 g/cm ³ at 59 °F/15 °C Method: ASTM D 4052
	0.85 g/cm ³ at 212 °F/100 °C Method: calculated
Bulk density:	Not applicable
Relative vapor density:	> 1 at 68 °F/20 °C
Other information	
Self-ignition:	No data available.
Evaporation Rate:	No data available.
VOC Content:	< 0.3 % calculated (2010/75/EU)

10. Stability and reactivity

Reactivity:	see section "Possibility of hazardous reactions".
Chemical Stability:	This material is considered stable under specified conditions of storage, shipment and/or use.
Possibility of hazardous reactions:	No dangerous reactions known.
Conditions to avoid:	Avoid high temperatures and sources of ignition. Depolymerization begins at 200 °C / 392 °F.
Incompatible Materials:	Avoid contact with strong oxidants.
Hazardous Decomposition Products:	None when used as directed. Under conditions of thermal decomposition: Methacrylates When overheated: oil vapours

11. Toxicological information

General information:	No toxicological tests have been conducted with the product itself.
Information on likely routes of exposure	
Inhalation:	If handled correctly, not a relevant route of exposure. Information on effects are given below.
Skin Contact:	Relevant route of exposure. Information on effects are given below.
Eye contact:	Relevant route of exposure. Information on effects are given below.

Ingestion: If handled correctly, not a relevant route of exposure. Information on effects are given below.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation: If handled correctly, not a relevant route of exposure. Information on effects are given below.

Skin Contact: May cause skin irritation.

Eye contact: May cause temporary eye irritation.

Ingestion: If handled correctly, not a relevant route of exposure. Information on effects are given below.

Acute toxicity (list all possible routes of exposure)

Oral

Product: Not classified for acute toxicity based on available data.

Dermal

Product: Not classified for acute toxicity based on available data.

Inhalation

Product: Not classified for acute toxicity based on available data.

Repeated dose toxicity

Product: No data available.

Skin Corrosion/Irritation

Product: If contact with skin is prolonged and/or frequent, irritations cannot be excluded., The product has a degreasing effect on skin. Based on available data, the classification criteria are not met.

Serious Eye Damage/Eye Irritation

Product: Contact with eyes may cause irritation. Based on available data, the classification criteria are not met.

Respiratory or Skin Sensitization

Product: No data available.

Components:

distillates (petroleum), solvent-dewaxed heavy paraffinic; baseoil unspecified

OECD 406, Not a skin sensitizer.

distillates (petroleum), solvent-dewaxed light paraffinic; baseoil - unspecified

OECD 406, Guinea Pig, Not a skin sensitizer.

distillates (petroleum), solvent-dewaxed heavy paraffinic; baseoil unspecified

OECD 406, Not a skin sensitizer.

distillates (petroleum), solvent-dewaxed light paraffinic; baseoil - unspecified

OECD 406, Guinea Pig, Not a skin sensitizer.

isodecyl methacrylate

Local Lymph Node Assay (LLNA), OECD 429, Mouse, Not a skin sensitizer.

Carcinogenicity

Product: Not classified

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

No carcinogens present or none present in regulated quantities

ACGIH: US.ACGIH Threshold Limit Values:

No carcinogens present or none present in regulated quantities

US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogens present or none present in regulated quantities

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053), as amended:

No carcinogens present or none present in regulated quantities

Germ Cell Mutagenicity

In vitro

Product: No data available.

In vivo

Product: No data available.

Reproductive toxicity

Product: No data available.

Components:

distillates (petroleum), Not classified

solvent-dewaxed light

paraffinic; baseoil -

unspecified

distillates (petroleum), Not classified

solvent-dewaxed heavy

paraffinic; baseoil

unspecified

distillates (petroleum), Not classified

solvent-dewaxed light

paraffinic; baseoil -

unspecified

isodecyl methacrylate Not classified

Specific Target Organ Toxicity - Single Exposure

Product: No data available.

Components:

distillates (petroleum), Not classified

solvent-dewaxed heavy

paraffinic; baseoil

unspecified

distillates (petroleum), Not classified

solvent-dewaxed light

paraffinic; baseoil -

unspecified

distillates (petroleum), Not classified

solvent-dewaxed heavy

paraffinic; baseoil

unspecified

distillates (petroleum), Not classified

solvent-dewaxed light

paraffinic; baseoil -

unspecified

isodecyl methacrylate Not classified, no evidence for hazardous properties

Specific Target Organ Toxicity - Repeated Exposure

Product:	No data available.
Components:	
distillates (petroleum), solvent-dewaxed heavy paraffinic; baseoil unspecified	Not classified
distillates (petroleum), solvent-dewaxed light paraffinic; baseoil - unspecified	Not classified
distillates (petroleum), solvent-dewaxed heavy paraffinic; baseoil unspecified	Not classified
distillates (petroleum), solvent-dewaxed light paraffinic; baseoil - unspecified	Not classified
isodecyl methacrylate	Not classified, no evidence for hazardous properties (structure-activity-relationships) (analogy)

Aspiration Hazard

Product: No aspiration toxicity classification

Information on health hazards

Other hazards

Product: Avoid contact with the skin and eyes and inhalation of the product vapours.;

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product:	No data available.
Components:	
distillates (petroleum), solvent-dewaxed heavy paraffinic; baseoil unspecified	LL 50, Pimephales promelas, 96 h, > 100 mg/l
distillates (petroleum), solvent-dewaxed light paraffinic; baseoil - unspecified	LL 50, Pimephales promelas, 96 h, > 100 mg/IOECD 203, WAF
distillates (petroleum), solvent-dewaxed heavy paraffinic; baseoil unspecified	LL 50, Pimephales promelas, 96 h, > 100 mg/l
distillates (petroleum), solvent-dewaxed light paraffinic; baseoil - unspecified	LL 50, Pimephales promelas, 96 h, > 100 mg/IOECD 203, WAF
isodecyl methacrylate	LC 50, Leuciscus idus (Golden orfe), 48 h, > 100 mg/IDIN 38412 part 12,

In the range of water solubility not toxic under test conditions.
LC 50, Danio rerio, 96 h, > 10,000 mg/l

Aquatic Invertebrates

Product:

No data available.

Components:

distillates (petroleum),
solvent-dewaxed heavy
paraffinic; baseoil
unspecified

EC 50, Daphnia magna, 48 h, > 100 mg/l, WAF

distillates (petroleum),
solvent-dewaxed light
paraffinic; baseoil -
unspecified

EC 50, Daphnia magna, 48 h, > 10,000 mg/IOECD 202, WAF

distillates (petroleum),
solvent-dewaxed heavy
paraffinic; baseoil
unspecified

EC 50, Daphnia magna, 48 h, > 100 mg/l, WAF

distillates (petroleum),
solvent-dewaxed light
paraffinic; baseoil -
unspecified

EC 50, Daphnia magna, 48 h, > 10,000 mg/IOECD 202, WAF

Toxicity to Aquatic Plants

Product:

No data available.

Components:

distillates (petroleum),
solvent-dewaxed heavy
paraffinic; baseoil
unspecified

EC 50, Algae (Pseudokirchneriella subcapitata), 72 h, > 100 mg/l, WAF

distillates (petroleum),
solvent-dewaxed light
paraffinic; baseoil -
unspecified

EC 50, Algae (Pseudokirchneriella subcapitata), 72 h, > 100 mg/l, WAF

distillates (petroleum),
solvent-dewaxed heavy
paraffinic; baseoil
unspecified

distillates (petroleum),
solvent-dewaxed light
paraffinic; baseoil -
unspecified

isodecyl methacrylate

EC 50, Desmodesmus subspicatus (green algae), 72 h, > 16.9 µg/l,
OECD 201, No toxicity at the limit of solubility

Toxicity to microorganisms

Product:

No data available.

Components:

isodecyl methacrylate

EC0, activated sludge, 5 d, > 500 mg/l, OECD 209

Chronic hazards to the aquatic environment:

Fish

Product:

No data available.

Aquatic Invertebrates

Product:

No data available.

Components:

distillates (petroleum),
solvent-dewaxed heavy

NOEC, Daphnia magna, 21 d, 10 mg/l, WAF

paraffinic; baseoil unspecified distillates (petroleum), solvent-dewaxed light paraffinic; baseoil - unspecified	NOEC, Daphnia magna, 21 d, > 10 mg/l, OECD 211, WAF
distillates (petroleum), solvent-dewaxed heavy paraffinic; baseoil unspecified	NOEC, Daphnia magna, 21 d, 10 mg/l, WAF
distillates (petroleum), solvent-dewaxed light paraffinic; baseoil - unspecified	NOEC, Daphnia magna, 21 d, > 10 mg/l, OECD 211, WAF
isodecyl methacrylate	NOEC, Daphnia magna, 21 d, 54.2 µg/l, OECD 211

Toxicity to microorganisms

Product:	No data available.
Components: isodecyl methacrylate	EC0, activated sludge, 5 d, > 500 mg/l, OECD 209

Persistence and Degradability

Biodegradation

Product:	No data available.
Components: distillates (petroleum), solvent-dewaxed heavy paraffinic; baseoil unspecified	Inherently biodegradable
isodecyl methacrylate	62 %, 28 d, OECD 310, 10-day window test failed Readily biodegradable 88 %, 28 d, OECD 301 B, 10-day window test failed Readily biodegradable

BOD/COD Ratio

Product:	No data available.
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Bioaccumulative potential

Bioconcentration Factor (BCF)

Product:	No data available.
Components: isodecyl methacrylate	no specific test data available no evidence for hazardous properties (structure-activity-relationships) (analogy)

Partition Coefficient n-octanol / water (log Kow)

Product:	, No data available.
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Mobility in soil:

Product:	The product is insoluble and floats on water.
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Results of PBT and vPvB assessment:

Product:	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
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Other adverse effects:

Other hazards

Product: Prevent substance from entering soil, natural bodies of water and sewer systems.

13. Disposal considerations

Disposal methods: Incinerate liquid and contaminated solids in accordance with local, state and federal regulations.

Contaminated Packaging: Contaminated packaging should ideally be emptied; it can then be recycled after having been decontaminated. Packaging that cannot be cleaned should be disposed of professionally. Uncontaminated packaging may be taken for recycling.

14. Transport information

Domestic regulation

49 CFR

Not regulated as a dangerous good

International Regulations

UNRTDG

Not regulated as a dangerous good

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

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

Not applicable for product as supplied.

15. Regulatory information

US Federal Regulations

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

None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

US. Toxic Substances Control Act (TSCA) Section 5(a)(2) Final Significant New Use Rules (SNURs) (40 CFR 721, Subpt E)

None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053), as amended

None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

CERCLA Hazardous Substance List (40 CFR 302.4):

None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Not classified

US. EPCRA (SARA Title III) Section 304 Extremely Hazardous Substances Reporting Quantities and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Hazardous Substances

None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

US. EPCRA (SARA Title III Section 313 Toxic Chemical Release Inventory (TRI) Reporting

None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

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

None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

US State Regulations

US. California Proposition 65

No ingredient requiring a warning under CA Prop 65.

Inventory Status:

Registration, Evaluation and Authorisation of Chemicals (REACH):	Compliant with REACH. All components have been registered or are exempt from REACH. EU-REACH compliant for Operations GmbH and its affiliates as EU manufacturer/EU importer.
US TSCA Inventory:	On or in compliance with the inventory Commercial Status: Active
Canada DSL Inventory List:	On or in compliance with the inventory
Australia Industrial Chem. Act (AIC):	On or in compliance with the inventory
Japan (ENCS) List:	On or in compliance with the inventory
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Philippines PICCS:	On or in compliance with the inventory
China Inv. Existing Chemical Substances:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	On or in compliance with the inventory HSR002605, Lubricants (Low Hazard) Group Standard 2006
Taiwan Chemical Substance Inventory:	On or in compliance with the inventory Pre-registration is requested for specific importer.

16. Other information, including date of preparation or last revision

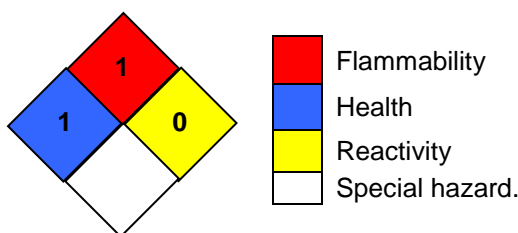
HMIS Hazard ID

Health	1
Flammability	1
Physical Hazards	0
PERSONAL PROTECTION	
B	

B - Safety Glasses & Gloves

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible; *Chronic health effect

NFPA Hazard ID



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible

Version #: 2.0
Generation date: 03/20/2024
Date of first report version: 03/26/2019

Abbreviations and acronyms:

- ACGIH: US. ACGIH Threshold Limit Values, as amended
- NIOSH/GUIDE: US. NIOSH: Pocket Guide to Chemical Hazards, as amended
- OSHA_TRANS: US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended
- ACGIH / TWA: Time Weighted Average (TWA):
- NIOSH/GUIDE / Ceil_Time: Ceiling Limit Value and Time Period (if specified):
- NIOSH/GUIDE / REL: Recommended exposure limit (REL):
- NIOSH/GUIDE / STEL: Short Term Exposure Limit (STEL):
- OSHA_TRANS / PEL: Permissible exposure limit:

AIIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 -

Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Further Information: none

Revision Information Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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