SAFETY DATA SHEET

Advancion Corporation

Product name : CORRGUARD™ FS

Revision Date: 07/24/2024
Date of last issue: 02/27/2024
Date of first issue: 08/02/2019

Advancion Corporation encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : CORRGUARD™ FS

Manufacturer or supplier's details

Company name of supplier : Advancion Corporation
Address : 1500 E. LAKE COOK ROAD
Buffalo Grove IL 60089-6553

Customer Information Number +1-847-808-3711

E-mail address NAR_CC@ADVANCIONSCIENCES.COM

Emergency telephone number **+1 800-424-9300 (24x7)**

Recommended use : Metal working fluid additive
Neutralizing agent.
For industrial use.
The Advancion Corporation recommends that you use this product in a manner consistent with the listed use. If your intended use is not consistent with the stated use, please contact the Customer Information Group (see Section 1 of this data sheet).

2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity (Oral) : Category 4

Skin corrosion : Category 1

Serious eye damage : Category 1

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.

Precautionary statements :

Prevention:

P264 Wash 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.

Response:

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P363 Wash contaminated clothing before reuse.

Storage:

P405 Store locked up.

Disposal:

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

Other hazards

None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
2-Amino-2-methyl-1-propanol	124-68-5 1-Propanol, 2-amino-2-methyl- (8CI, 9CI)	>= 58 - <= 69.7
2-Amino-1-butanol	96-20-8	>= 20 - <= 21
	7732-18-5	>= 7.1 - <= 9.2

Water		
2-Methylamino-2-methyl-1-propanol	27646-80-6 1-Propanol, 2-methyl-2-(methylamino)-(8CI, 9CI)	<= 2.3
2-Amino-2-ethyl-1,3-propanediol	115-70-8	>= 3.4 - <= 5

Component CAS# 96-20-8 may also be described by CAS# 13054-87-0 for regulatory purposes.

4. FIRST AID MEASURES

General advice	:	Move out of dangerous area. Consult a physician. Show this safety data sheet to the doctor in attendance. Do not leave the victim unattended.
If inhaled	:	If unconscious place in recovery position and seek medical advice. If symptoms persist, call a physician. Move to fresh air. Consult a physician after significant exposure.
In case of skin contact	:	Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.
In case of eye contact	:	Small amounts splashed into eyes can cause irreversible tissue damage and blindness. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Continue rinsing eyes during transport to hospital. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing.
If swallowed	:	Clean mouth with water and drink afterwards plenty of water. Do NOT induce vomiting. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. Take victim immediately to hospital.
Most important symptoms and effects, both acute and delayed	:	Harmful if swallowed. Causes serious eye damage. Causes severe burns.

5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	:	High volume water jet
Specific hazards during firefighting	:	Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

Hazardous combustion products	:	During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon dioxide. Carbon monoxide. Nitrogen oxides (NOx)
Further information	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Special protective equipment for firefighters	:	In the event of fire, wear self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment. Ensure adequate ventilation. Evacuate personnel to safe areas.
Environmental precautions	:	Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	:	Neutralise with acid. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Advice on protection against fire and explosion	:	Normal measures for preventive fire protection.
Advice on safe handling	:	Do not breathe vapours/dust. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. To avoid spills during handling keep bottle on a metal tray. Dispose of rinse water in accordance with local and national regulations.
Conditions for safe storage	:	Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.
Further information on storage stability	:	No decomposition if stored and applied as directed.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection	:	In the case of vapour formation use a respirator with an approved filter.
Hand protection		
Remarks	:	The suitability for a specific workplace should be discussed with the producers of the protective gloves. Polyvinyl alcohol or nitrile- butyl-rubber gloves The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it. Before removing gloves clean them with soap and water.
Eye protection	:	Eye wash bottle with pure water Tightly fitting safety goggles Wear face-shield and protective suit for abnormal processing problems.
Skin and body protection	:	Impervious clothing Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Hygiene measures	:	When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Colour	:	colorless to pale yellow
Odour	:	Amine, mild
pH	:	10.8 Method: Measured 1% Aqueous solution
Freezing point	:	< -26 °F / -32 °C
Flash point	:	> 230 °F / 110 °C Method: closed cup
Solubility(ies)		
Water solubility	:	1,000 g/l completely soluble
Viscosity		
Viscosity, dynamic	:	87 mPa.s (77 °F / 25 °C)
Particle size	:	No data available

10. STABILITY AND REACTIVITY

Reactivity	:	Stable under recommended storage conditions.
Chemical stability	:	No decomposition if stored and applied as directed.
Possibility of hazardous reactions	:	Stable under recommended storage conditions. No decomposition if used as directed.
Conditions to avoid	:	No data available
Hazardous decomposition products	:	Thermal decomposition may yield the following: Carbon dioxide (CO2), carbon monoxide (CO), oxides of nitrogen (NOx), dense black smoke.

11. TOXICOLOGICAL INFORMATION

Toxicological information on this product or its components appear in this section when such data is available.

Acute toxicity

Harmful if swallowed.

Product:

Acute oral toxicity	:	Acute toxicity estimate: 1,457 mg/kg Method: Calculation method
Acute dermal toxicity	:	Acute toxicity estimate: > 5,000 mg/kg Method: Calculation method

Skin corrosion/irritation

Causes severe burns.

Product:

Remarks	:	Extremely corrosive and destructive to tissue.

Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Remarks	:	May cause irreversible eye damage.

Respiratory or skin sensitisation

Skin sensitisation

Not classified due to lack of data.

Respiratory sensitisation

Not classified due to lack of data.

Product:

Remarks	:	No data available

Germ cell mutagenicity

Not classified due to lack of data.

Carcinogenicity

Not classified due to lack of data.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Teratogenicity

Components:

2-Amino-2-methyl-1-propanol
In a screening study in rats, 2-amino-2-methyl-1-propanol hydrochloride salt was toxic to the fetus when administered at high oral doses. However, this material did not cause birth defects or any other effects on the fetus when high doses were administered dermally, the most likely route of exposure, in a definitive rat developmental toxicity study.

2-Amino-1-butanol
2-Aminobutanol hydrochloride salt caused maternal toxicity leading to death of embryos when administered orally to pregnant rats in a reproductive screening study. No developmental effects were observed in this study.

2-Amino-2-ethyl-1,3-propanediol
Did not cause birth defects or any other fetal effects in laboratory animals.

Mutagenicity

Components:

2-Amino-2-methyl-1-propanol
Animal genetic toxicity studies were negative.
In vitro genetic toxicity studies were negative.

2-Amino-1-butanol
In vitro genetic toxicity studies were negative.

2-Amino-2-ethyl-1,3-propanediol
In vitro genetic toxicity studies were negative.

Reproductive toxicity

Not classified due to lack of data.

STOT - single exposure

Not classified due to lack of data.

Components:

2-Amino-2-methyl-1-propanol:

Assessment : Evaluation of available data suggests that this material is not an STOT-SE toxicant.

2-aminobutan-1-ol:

Assessment : Material is corrosive. Material is not classified as a respiratory irritant; however, upper respiratory tract irritation or corrosivity may be expected.

2-amino-2-ethylpropanediol:

Assessment : Evaluation of available data suggests that this material is not an STOT-SE toxicant.

STOT - repeated exposure

Not classified due to lack of data.

Repeated dose toxicity

Components:

2-Amino-2-methyl-1-propanol:

Remarks : In animals, effects have been reported on the following organs:
Liver.

2-aminobutan-1-ol:

Remarks : In animals, effects have been reported on the following organs:
Liver.

2-amino-2-ethylpropanediol:

Remarks : Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

Aspiration toxicity

Not classified due to lack of data.

Components:

2-Amino-2-methyl-1-propanol:

Based on physical properties, not likely to be an aspiration hazard.

2-aminobutan-1-ol:

Based on physical properties, not likely to be an aspiration hazard.

2-amino-2-ethylpropanediol:

Based on physical properties, not likely to be an aspiration hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

2-Amino-2-methyl-1-propanol:

Toxicity to fish : Remarks: Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).
May increase pH of aquatic systems to > pH 10 which may be toxic to aquatic organisms.

LC50 (Lepomis macrochirus (Bluegill sunfish)): 190 mg/l
Exposure time: 96.0 h

Test Type: static test
Method: OECD Test Guideline 203 or Equivalent

LC50 (European plaice (Pleuronectes platessa).): 184 mg/l
Exposure time: 96.0 h
Test Type: semi-static test
Method: OECD Test Guideline 203 or Equivalent

LC50 (Leuciscus idus (Golden orfe)): 331 mg/l
Exposure time: 48.0 h
Test Type: static test
Method: OECD Test Guideline 203 or Equivalent

Toxicity to daphnia and other aquatic invertebrates : LC50 (Crangon crangon (shrimp)): 179.00 mg/l
Exposure time: 96.0 h
Test Type: semi-static test
Method: OECD Test Guideline 202 or Equivalent

LC50 (Daphnia magna (Water flea)): 193.00 mg/l
Exposure time: 48.0 h
Test Type: static test
Method: OECD Test Guideline 202 or Equivalent

Toxicity to algae/aquatic plants : EyC50 (alga Scenedesmus sp.): 565.5 mg/l
End point: Biomass
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201 or Equivalent

Toxicity to microorganisms : EC50 (activated sludge): 342.9 mg/l
End point: Respiration rates.
Exposure time: 3 h
Test Type: static test
Method: OECD 209 Test

2-aminobutan-1-ol:

Toxicity to fish : Remarks: Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested).

LC50 (Leuciscus idus (Golden orfe)): 270 mg/l
Exposure time: 96.0 h
Test Type: static test
Method: OECD Test Guideline 203 or Equivalent

LC50 (Oncorhynchus mykiss (rainbow trout)): > 952 mg/l
Exposure time: 96.0 h
Test Type: static test
Method: OECD Test Guideline 203 or Equivalent

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 115.00 mg/l
Exposure time: 48.0 h
Test Type: static test
Method: OECD Test Guideline 202 or Equivalent

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): > 0.94 mg/l
End point: Growth rate inhibition

Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 201 or Equivalent

EyC50 (Pseudokirchneriella subcapitata (green algae)): 0.62 mg/l
End point: Cell yield inhibition
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 201 or Equivalent

M-Factor (Acute aquatic toxicity) : 1

Toxicity to microorganisms : EC50 (activated sludge): 329.2 mg/l
End point: Respiration rates.
Exposure time: 3 h
Test Type: static test
Method: OECD 209 Test

2-amino-2-ethylpropanediol:

Toxicity to fish : Remarks: Material is practically non-toxic to fish on an acute basis (LC50 > 100 mg/L).
May increase pH of aquatic systems to > pH 10 which may be toxic to aquatic organisms.

LC50 (Leuciscus idus (Golden orfe)): 460 mg/l
Exposure time: 96.0 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 668.00 mg/l
Exposure time: 48.0 h

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 548 mg/l
End point: Growth rate inhibition
Exposure time: 72 h

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 3.99 mg/l
End point: number of offspring
Exposure time: 21 d

LOEC (Daphnia magna (Water flea)): 8.61 mg/l
End point: number of offspring
Exposure time: 21 d

Toxicity to microorganisms : EC50 (Pseudomonas putida): 640 mg/l
End point: Growth rate
Exposure time: 16 h

Persistence and degradability

Components:

2-Amino-2-methyl-1-propanol:

Biodegradability : Remarks: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

Result: Readily biodegradable.

Biodegradation: 89.3 %
Exposure time: 28 d
Method: OECD Test Guideline 301F or Equivalent
Remarks: 10-day Window: Pass

Chemical Oxygen Demand (COD) : 2.410 mg/mg
Method: Estimated.

ThOD : 2.690 mg/mg
Method: Estimated.

Photodegradation : Sensitiser: OH radicals
Concentration: 1,500,000 1/cm3
Rate constant: 2.55E-11 cm3/s
Method: Estimated.

2-aminobutan-1-ol:

Biodegradability : Result: Readily biodegradable.
Remarks: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

Biodegradation: 93 %
Exposure time: 28 d
Method: OECD Test Guideline 301F or Equivalent
Remarks: 10-day Window: Pass

ThOD : 2.690 mg/mg
Method: Calculated.

Photodegradation : Sensitiser: OH radicals
Concentration: 1,500,000 1/cm3
Rate constant: 5.38E-11 cm3/s
Method: Estimated.

2-amino-2-ethylpropanediol:

Biodegradability : Remarks: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.
Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).

Biodegradation: > 90 %
Exposure time: 28 d
Method: OECD Test Guideline 302B or Equivalent
Remarks: 10-day Window: Not applicable

Biodegradation: < 6 %
Exposure time: 28 d
Method: OECD Test Guideline 301D or Equivalent
Remarks: 10-day Window: Fail

Bioaccumulative potential

Components:

2-Amino-2-methyl-1-propanol:

Bioaccumulation : Species: Fish

Bioconcentration factor (BCF): < 1
Method: Measured

Partition coefficient: n-octanol/water : log Pow: -0.63
Method: OECD Test Guideline 107 or Equivalent
Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

2-aminobutan-1-ol:

Partition coefficient: n-octanol/water : log Pow: -0.45
Method: Measured
Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

2-amino-2-ethylpropanediol:

Partition coefficient: n-octanol/water : log Pow: -1.02
Method: OECD Test Guideline 107 or Equivalent
Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Mobility in soil

Components:

2-Amino-2-methyl-1-propanol:

Distribution among environmental compartments : Koc: 18
Method: Estimated.
Remarks: Potential for mobility in soil is very high (Koc between 0 and 50).

2-amino-2-ethylpropanediol:

Distribution among environmental compartments : Koc: 922
Method: Estimated.
Remarks: Potential for mobility in soil is low (Koc between 500 and 2000).

Other adverse effects

Components:

2-Amino-2-methyl-1-propanol:

Results of PBT and vPvB assessment : This substance is readily biodegradable and thus is not considered persistent or very persistent (P or vP). This substance has a low potential to bioaccumulate due to low affinity for octanol and high water solubility so is not considered bioaccumulative or very bioaccumulative (B or vB). This substance is not classified as mutagenic, carcinogenic or reproductive toxicant to mammalian species, and the values are much higher than the threshold for toxicity to aquatic species; thus is not considered toxic (T). Methanol.

2-aminobutan-1-ol:

Results of PBT and vPvB assessment : Non-classified vPvB substance Non-classified PBT substance

Ozone-Depletion Potential : Remarks: This substance is not in Annex I of Regulation (EC)

No 1005/2009 on substances that deplete the ozone layer.

2-amino-2-ethylpropanediol:

Results of PBT and vPvB assessment	:	This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).
Ozone-Depletion Potential	:	Remarks: This substance is not in Annex I of Regulation (EC) No 1005/2009 on substances that deplete the ozone layer.

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.
Contaminated packaging	:	Empty remaining contents. Dispose of as unused product. Do not re-use empty containers.

14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN/ID No.	:	UN 3267
Proper shipping name	:	Corrosive liquid, basic, organic, n.o.s. (2-Amino-1-butanol)
Class	:	8
Packing group	:	III
Labels	:	8 Corrosives
Packing instruction (cargo aircraft)	:	856
Packing instruction (passenger aircraft)	:	852

IMDG-Code

UN number	:	UN 3267
Proper shipping name	:	CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (2-Amino-1-butanol)
Class	:	8
Packing group	:	III
Labels	:	8
EmS Code	:	F-A, S-B
Marine pollutant	:	no
Remarks	:	Stowage category AAlkalis

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

Not applicable for product as supplied.

National Regulations

49 CFR

UN/ID/NA number	:	UN 3267
Proper shipping name	:	Corrosive liquid, basic, organic, n.o.s. (2-Amino-1-butanol)
Class	:	8
Packing group	:	III
Labels	:	CORROSIVE
ERG Code	:	153
Marine pollutant	:	no

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

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

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards	:	Acute toxicity (any route of exposure) Serious eye damage or eye irritation Skin corrosion or irritation
SARA 313	:	This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.
This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.
This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307
This product does not contain any priority pollutants related to the U.S. Clean Water Act

US State Regulations

Massachusetts Right To Know

2-Amino-2-methyl-1-propanol	124-68-5
2-aminobutan-1-ol	96-20-8

Pennsylvania Right To Know

2-Amino-2-methyl-1-propanol	124-68-5
2-aminobutan-1-ol	96-20-8
water	7732-18-5
2-amino-2-ethylpropanediol	115-70-8

Maine Chemicals of High Concern

Product does not contain any listed chemicals

Vermont Chemicals of High Concern

Product does not contain any listed chemicals

Washington Chemicals of High Concern

Product does not contain any listed chemicals

New Jersey Right To Know

2-Amino-2-methyl-1-propanol	124-68-5
2-aminobutan-1-ol	96-20-8
water	7732-18-5
2-Methylamino-2-methyl-1-propanol	27646-80-6

The components of this product are reported in the following inventories:

TSCA : All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

TSCA list

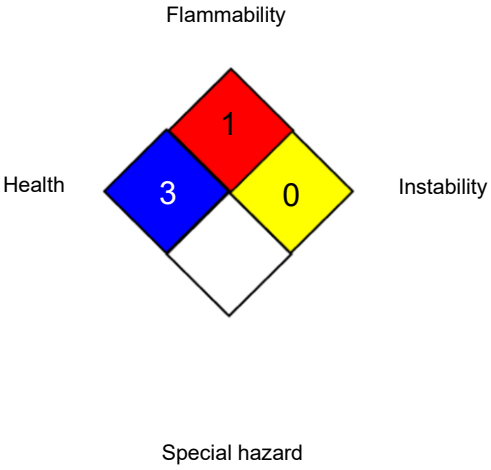
No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

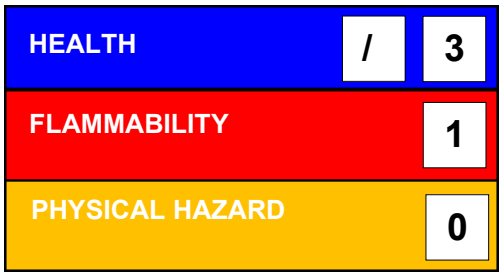
16. OTHER INFORMATION

Further information

NFPA 704:



HMIS® IV:



HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Full text of other abbreviations

AIIC - 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

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