8/26/2025: File reviewed, more current MSDS/SDS not available. CAS

FREMONT C-312 Closed System Treatment

Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date: 04/01/2020 Supersedes: 02/01/2015

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name	:	FREMONT C-312 Closed System Treatment
Product form	:	Mixture
Other means of identification	:	Base

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

Use of the substance/mixture	:	Closed System Treatment

1.3. Details of the supplier of the safety data sheet

FREMONT INDUSTRIES, LLC
a Kurita company
4400 Valley Industrial Blvd. N.
P.O. Box 67
Shakopee, MN 55379-0067

1.4. Emergency telephone number

Emergency number	:	(952) 445-4121 CHEMTEL: (800) 255-3924

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Met. Corr. 1 H290
Skin Irrit. 2 H315
Eye Dam. 1 H318

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



GHS05

Signal word (GHS-US) : **Danger**

Hazard statements (GHS-US) :
H290 - May be corrosive to metals
H315 - Causes skin irritation
H318 - Causes serious eye damage

Precautionary statements (GHS-US) :
P234 - Keep only in original container
P264 - Wash hands, forearms and face thoroughly after handling
P280 - Wear eye protection, face shield, protective clothing, protective gloves
P302+P352 - If on skin: Wash with plenty of water
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a doctor, a POISON CENTER
P321 - Specific treatment (see first aid instructions on this label)
P332+P313 - If skin irritation occurs: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse
P390 - Absorb spillage to prevent material damage
P406 - Store in corrosive resistant container with a resistant inner liner

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%
Potassium hydroxide	(CAS No) 1310-58-3	1 - 5
Tolyltriazole, sodium salt	(CAS No) 64665-57-2	0.1 - 1
1-Hydroxyethane-1,1-diphosphonic acid	(CAS No) 2809-21-4	0.1 - 1
2-Butenedioic acid (Z)-, homopolymer	(CAS No) 26099-09-2	0.1 - 1
Sodium hydroxide	(CAS No) 1310-73-2	0.01 - 0.1
Maleic acid	(CAS No) 110-16-7	0.01 - 0.1
Phosphonic acid [H(P=O)(OH)2]	(CAS No) 13598-36-2	0.01 - 0.1

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : If exposed or concerned, get medical attention/advice. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before re-use. Never give anything to an unconscious person.

First-aid measures after inhalation : IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if breathing is affected. If breathing is difficult, supply oxygen.

First-aid measures after skin contact : IF ON SKIN (or clothing): Remove affected clothing and wash all exposed skin with water for at least 15 minutes. If irritation develops or persists, get medical attention.

First-aid measures after eye contact : IF IN EYES: Immediately flush with plenty of water for at least 15 minutes. Remove contact lenses if present and easy to do so. Get medical attention immediately. Continue rinsing.

First-aid measures after ingestion : IF SWALLOWED: rinse mouth thoroughly. Do not induce vomiting without advice from poison control center or medical professional. Get medical attention if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries : Causes skin irritation. Causes serious eye damage.

Symptoms/injuries after inhalation : May cause respiratory irritation.

Symptoms/injuries after skin contact : Causes skin irritation.

Symptoms/injuries after eye contact : Causes serious eye damage.

Symptoms/injuries after ingestion : May cause gastrointestinal irritation.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Carbon dioxide. Foam. Dry powder. Sand. Water spray.

5.2. Special hazards arising from the substance or mixture

Fire hazard : The product is not flammable.

Explosion hazard : Product is not explosive.

Reactivity : No data available.

5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Do not dispose of fire-fighting water in the environment. Prevent human exposure to fire, fumes, smoke and products of combustion.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Evacuate area. Keep upwind. Ventilate area. Spill should be handled by trained clean-up crews properly equipped with respiratory equipment and full chemical protective gear (see Section 8).

6.1.1. For non-emergency personnel

Protective equipment : Wear Protective equipment as described in Section 8.

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Wear suitable protective clothing, gloves and eye or face protection. Approved supplied-air respirator, in case of emergency.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Sweep or shovel spills into appropriate container for disposal.

Methods for cleaning up : Product may create slip hazard . Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Place in a suitable container for disposal in accordance with the waste regulations (see Section 13). Wash spill area thoroughly with plenty of soap and water. If slipperiness remains, apply additional dry-sweeping compound.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Do not handle until all safety precautions have been read and understood. Avoid contact with skin and eyes. Provide good ventilation in process area to prevent formation of vapour. Do not breathe vapors. Avoid spilling the product, as this might cause danger of slippage and falls. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in dry, well-ventilated area. Keep container closed when not in use.

Incompatible materials : Strong bases.

Storage temperature : room temperature

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Potassium hydroxide (1310-58-3)	
ACGIH Ceiling (mg/m³)	2
OSHA PEL (Ceiling) (mg/m³)	2 vacated
Sodium hydroxide (1310-73-2)	
ACGIH Ceiling (mg/m³)	2
OSHA PEL (TWA) (mg/m³)	2
OSHA PEL (Ceiling) (mg/m³)	2
Tolyltriazole, sodium salt (64665-57-2)	
Remark (ACGIH)	OELs not established
Remark (OSHA)	OELs not established
Maleic acid (110-16-7)	
Remark (ACGIH)	OELs not established
Remark (OSHA)	OELs not established
2-Butenedioic acid (Z)-, homopolymer (26099-09-2)	
Remark (ACGIH)	OELs not established
Remark (OSHA)	OELs not established
1-Hydroxyethane-1,1-diphosphonic acid (2809-21-4)	
Remark (ACGIH)	OELs not established
Remark (OSHA)	OELs not established
Phosphonic acid [H(P=O)(OH)2] (13598-36-2)	
Remark (ACGIH)	OELs not established
Remark (OSHA)	OELs not established

8.2. Exposure controls

Appropriate engineering controls : Provide adequate general and local exhaust ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof equipment with flammable materials. Ensure adequate ventilation, especially in confined areas.

Personal protective equipment : Gloves. Wear chemical goggles and face shield in combination. Protective clothing.



Hand protection	:	Use gloves chemically resistant to this material when prolonged or repeated contact could occur. Gloves should be classified under Standard EN 374 or ASTM F1296. Suggested glove materials are: Neoprene, Nitrile/butadiene rubber, Polyethylene, Ethyl vinyl alcohol laminate, PVC or vinyl. . Suitable gloves for this specific application can be recommended by the glove supplier.
Eye protection	:	Wear eye protection, including chemical splash goggles and a face shield when possibility exists for eye contact due to spraying liquid or airborne particles. Chemical goggles and face shield must be worn in combination.
Skin and body protection	:	Wear long sleeves, and chemically impervious PPE/coveralls to minimize bodily exposure.
Respiratory protection	:	Use NIOSH-approved dust/particulate respirator. Where vapor, mist, or dust exceed PELs or other applicable OELs, use NIOSH-approved respiratory protective equipment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Color	:	Amber.
Odor	:	Slight.
Odor Threshold	:	No data available
pH (10%)	:	11.9 – 12.9
Relative evaporation rate (butylacetate=1)	:	No data available
Melting point	:	No data available
Freezing point	:	No data available
Boiling point	:	100 °C (212 °F)
Flash point	:	Nonflammable (T.C.C.)
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Flammability (solid, gas)	:	No data available
Vapour pressure	:	No data available
Relative vapour density at 20 °C	:	No data available
Relative density	:	1.05 (H_2O = 1)
Solubility	:	Water: 100 %
Log Pow	:	No data available
Log Kow	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosive properties	:	No data available
Oxidising properties	:	No data available
Explosive limits	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available.

10.2. Chemical stability

Stable under recommended handling and storage conditions (see section 7).

10.3. Possibility of hazardous reactions

None known.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

Strong acids.

10.6. Hazardous decomposition products

Carbon oxides (CO, CO_2). Phosphorus oxides. Nitrogen oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Potassium hydroxide (1310-58-3)	
ATE CLP (oral)	500 mg/kg bodyweight
Sodium hydroxide (1310-73-2)	
LD50 dermal rabbit	1350 mg/kg
Tolyltriazole, sodium salt (64665-57-2)	
ATE CLP (oral)	640.000 mg/kg bodyweight
Maleic acid (110-16-7)	
LD50 oral rat	708 mg/kg
LD50 dermal rabbit	1560 mg/kg
LC50 inhalation rat (mg/l)	> 720 mg/m³ 1 h
ATE CLP (oral)	708.000 mg/kg bodyweight
1-Hydroxyethane-1,1-diphosphonic acid (2809-21-4)	
LD50 oral rat	2400 mg/kg
LD50 dermal rabbit	> 7940 mg/kg
Phosphonic acid [H(P=O)(OH)2] (13598-36-2)	
LD50 oral rat	1500 mg/kg

Skin corrosion/irritation : Causes skin irritation.

Serious eye damage/irritation : Causes serious eye damage.

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Symptoms/injuries after inhalation : May cause respiratory irritation.

Symptoms/injuries after skin contact : Causes skin irritation.

Symptoms/injuries after eye contact : Causes serious eye damage.

Symptoms/injuries after ingestion : May cause gastrointestinal irritation.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : No information available.

12.2. Persistence and degradability

FREMONT C-312 Closed System Treatment	
Persistence and degradability	No information available.

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Do not discharge to public wastewater systems without permit of pollution control authorities. No discharge to surface waters is allowed without an NPDES permit.

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Do not allow the product to be released into the environment.

SECTION 14: Transport information

In accordance with DOT

Transport document description : UN1814, POTASSIUM HYDROXIDE, SOLUTION, 8, PGIII

UN-No.(DOT) : 1814

DOT NA no.	:	UN1814
Proper Shipping Name (DOT)	:	Potassium hydroxide, solution
Department of Transportation (DOT) Hazard Classes	:	8 - Class 8 - Corrosive material 49 CFR 173.136
Hazard labels (DOT)	:	8 - Corrosive



Packing group (DOT)	:	III - Minor Danger
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	:	5 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	:	60 L
DOT Vessel Stowage Location	:	A - The material may be stowed ''on deck'' or ''under deck'' on a cargo vessel and on a passenger vessel.
DOT Vessel Stowage Other	:	52 - Stow ''separated from'' acids

Additional information

Other information : No supplementary information available.

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

FREMONT C-312 Closed System Treatment	
All chemical substances in this product are listed in the EPA (Environment Protection Agency) TSCA (Toxic Substances Control Act) Inventory	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard

Potassium hydroxide (1310-58-3)	
Listed on United States SARA Section 313	
RQ (Reportable quantity, section 304 of EPA's List of Lists) :	1000 lb
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard

Sodium hydroxide (1310-73-2)	
RQ (Reportable quantity, section 304 of EPA's List of Lists) :	1000 lb

Maleic acid (110-16-7)	
Listed on United States SARA Section 313	
RQ (Reportable quantity, section 304 of EPA's List of Lists) :	5000 lb Final

15.2. International regulations

No additional information available.

15.3. US State regulations

California Proposition 65

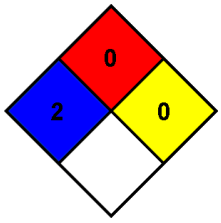
This product does not contain any substances known to the state of California to cause cancer and/or reproductive harm

Potassium hydroxide (1310-58-3)
U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

SECTION 16: Other information

Indication of changes	:	Revision 2.0: Updated supplier name, emergency contact and phone number, pH, & logo.
Revision date	:	04/01/2020
Other information	:	Author: BCS.
NFPA health hazard	:	2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.
NFPA fire hazard	:	0 - Materials that will not burn.

NFPA reactivity	:	0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health	:	2
Flammability	:	0
Physical	:	0
Personal Protection	:	

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