

# SAFETY DATA SHEET

## JEFFTREAT® MS-205

### Section 1. Identification


**GHS product identifier** : JEFFTREAT® MS-205  
**Product code** : 00033878  
**Other means of identification** : Not available.  
**Product type** : Liquid.  
**Material uses** : Gas treating  
**Supplier's details** : Huntsman International LLC  
P.O. Box 4980  
The Woodlands, TX 77387  
  
Technical Information: (281) 719-7780  
  
**e-mail address of person responsible for this SDS** : MSDS@huntsman.com  
  
**Emergency telephone number (24h/7day)** : Chemtrec: (800) 424-9300 or (703) 527-3887

### Section 2. Hazards identification

**OSHA/HCS status** : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

**Classification of the substance or mixture** : ACUTE TOXICITY: ORAL - Category 4  
ACUTE TOXICITY: INHALATION - Category 4  
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2B

**GHS label elements**

**Hazard pictograms** : 

**Signal word** : Warning

**Hazard statements** : Harmful if swallowed or if inhaled.  
Causes eye irritation.

**Precautionary statements** : Wear eye or face protection. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention. Dispose of contents and container in accordance with all local, regional, national and international regulations.

**Other hazards which do not result in classification** : None known.

## Section 3. Composition/information on ingredients

**Substance/mixture** : Mixture

Ingredient name	%	CAS number
Diethanolamine	30 - 60	111-42-2
Methyldiethanolamine	30 - 60	105-59-9

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

Occupational exposure limits, if available, are listed in Section 8.

## Section 4. First aid measures

### Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. If irritation persists, get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

- Eye contact** : Causes eye irritation.
- Inhalation** : Harmful if inhaled. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : Harmful if swallowed. May be irritating to mouth, throat and stomach.

### Over-exposure signs/symptoms

## Section 4. First aid measures

- Eye contact** : Adverse symptoms may include the following:  
irritation  
watering  
redness
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

### Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : No specific treatment. Treat symptomatically. Call medical doctor or poison control center immediately if large quantities have been ingested.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

- Flash point** : Closed cup: >115.5°C (>239.9°F)

### Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

- Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide  
nitrogen oxides

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** :

## Section 6. Accidental release measures

If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- Methods and materials for containment and cleaning up** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from acids. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Separate from acids. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
Diethanolamine	<b>ACGIH TLV (United States, 2/2010). Absorbed through skin.</b> TWA: 1 mg/m <sup>3</sup> 8 hours. Form: Inhalable fraction and vapor

## Section 8. Exposure controls/personal protection

- Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.
- Individual protection measures**
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Thermal hazards** : Not available.

## Section 9. Physical and chemical properties

### Appearance

- Physical state** : Liquid.
- Color** : Pale color.
- Odor** : Amine-like.
- Odor threshold** : Not available.
- pH** : 11.5
- Melting point/Freezing point** : Not available.
- Boiling/condensation point** : >246.1°C (>475°F)
- Flash point** : Closed cup: >115.5°C (>239.9°F)
- Evaporation rate** : Not available.

## Section 9. Physical and chemical properties

<b>Flammability (solid, gas)</b>	: Not available.
<b>Lower and upper explosive (flammable) limits</b>	: Not available.
<b>Vapor pressure</b>	: Not available.
<b>Vapor density</b>	: 4 [Air = 1]
<b>Relative density</b>	: 1.06
<b>Solubility in water</b>	: Not available.
<b>Partition coefficient: n-octanol/water</b>	: Not available.
<b>Auto-ignition temperature</b>	: Not available.
<b>Decomposition temperature</b>	: Not available.
<b>Viscosity</b>	: Kinematic (room temperature): >0.37 cm <sup>2</sup> /s (>37 cSt)

## Section 10. Stability and reactivity

<b>Reactivity</b>	: No specific test data related to reactivity available for this product or its ingredients.
<b>Chemical stability</b>	: The product is stable.
<b>Possibility of hazardous reactions</b>	: Under normal conditions of storage and use, hazardous reactions will not occur.
<b>Conditions to avoid</b>	: No specific data.
<b>Incompatible materials</b>	: Reactive or incompatible with the following materials: acids
<b>Hazardous decomposition products</b>	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Test	Endpoint	Species	Result
Diethanolamine	OECD 403 Acute Inhalation Toxicity	LC0 Inhalation Vapor	Rat - Male, Female	0.2 mg/l
	OECD 401 Acute Oral Toxicity	LD50 Oral	Rat - Male, Female	1600 mg/kg
Methyldiethanolamine	-	LC50 Inhalation Dusts and mists	Rat - Male, Female	>6.5 mg/m <sup>3</sup>
	OECD 402 Acute Dermal Toxicity	LD50 Dermal	Rabbit - Male	10244 mg/kg
	OECD 402 Acute Dermal Toxicity	LD50 Dermal	Rabbit - Female	11336 mg/kg
	OECD 401 Acute Oral Toxicity	LD50 Oral	Rat - Male, Female	4680 mg/kg

#### Irritation/Corrosion

## Section 11. Toxicological information

Product/ingredient name	Test	Species	Result
Diethanolamine	OECD 404 Acute Dermal Irritation/Corrosion	Rabbit	Skin - Irritant
	OECD 405 Acute Eye Irritation/Corrosion	Rabbit	Eyes - Severe irritant
Methyldiethanolamine	-	Rabbit	Eyes - Severe irritant
	-	Rabbit	Skin - Moderate irritant

### Conclusion/Summary

**Skin** : Diethanolamine Irritating to skin.  
Methyldiethanolamine Irritating to skin.

**Eyes** : Diethanolamine Severely irritating to eyes.  
Methyldiethanolamine Severely irritating to eyes.

### Sensitization

Product/ingredient name	Test	Route of exposure	Species	Result
Diethanolamine	OECD 406 Skin Sensitization	skin	Guinea pig	Not sensitizing
Methyldiethanolamine	-	skin	Guinea pig	Not sensitizing

### Mutagenicity

Product/ingredient name	Test	Result
Diethanolamine	Experiment: In vitro Subject: Bacteria Metabolic activation: +/-	Negative
	Experiment: In vitro Subject: Bacteria Metabolic activation: +/-	Negative
	Experiment: In vitro Subject: Mammalian-Animal Metabolic activation: +/-	Negative
	Experiment: In vitro Subject: Mammalian-Animal Metabolic activation: +/-	Negative
	Experiment: In vitro Subject: Mammalian-Animal Metabolic activation: +/-	Negative
	Experiment: In vivo Subject: Mammalian-Animal	Negative
Methyldiethanolamine	Experiment: In vitro Subject: Bacteria Metabolic activation: +/-	Negative
	Experiment: In vitro Subject: Mammalian-Animal Metabolic activation: +/-	Negative
	Experiment: In vivo Subject: Mammalian-Animal	Negative

**Conclusion/Summary** : Diethanolamine Not mutagenic in a standard battery of genetic toxicological tests.

## Section 11. Toxicological information

### Carcinogenicity

Product/ingredient name	Test	Species	Dose	Exposure	Result/Result type
Diethanolamine	OECD 451 Carcinogenicity Studies	Mouse - Male, Female	40 to 160 mg/ kg	103 weeks; 5 days per week	Negative - Dermal - LOAEL
	OECD 451 Carcinogenicity Studies	Rat - Male, Female	32 to 64 mg/kg	103 weeks; 5 days per week	Negative - Dermal - NOAEL

### Conclusion/Summary :

Diethanolamine

Causes tumors in rodents. Research has shown that the mechanism of carcinogenicity is not relevant to humans.

### Carcinogenic class

Product/ingredient name	IARC	OSHA
Diethanolamine	2B	-

### Reproductive toxicity

Product/ingredient name	Test	Species	Maternal toxicity	Fertility	Developmental effects
Diethanolamine	OECD 416 Two- Generation Reproduction Toxicity Study	Rat - Male, Female	Negative	-	-

### Teratogenicity

Product/ingredient name	Test	Species	Result/Result type
Diethanolamine	OECD 414 Prenatal Developmental Toxicity Study	Rat - Female	Negative - Dermal
	OECD 414 Prenatal Developmental Toxicity Study	Rabbit - Female	Negative - Dermal
	No official guidelines OECD 414 Prenatal Developmental Toxicity Study	Rat Rat - Female	Negative - Oral Negative - Inhalation
Methyldiethanolamine	-	Rat - Male, Female	Negative - Dermal

### Specific target organ toxicity (single exposure)

Not available.

### Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
Diethanolamine	Category 2	Oral	blood system, kidneys, liver and testes

### Aspiration hazard

Not available.



## Section 11. Toxicological information

**Information on the likely routes of exposure** : Not available.

### Potential acute health effects

- Eye contact** : Causes eye irritation.
- Inhalation** : Harmful if inhaled. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : Harmful if swallowed. May be irritating to mouth, throat and stomach.

### Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:  
irritation  
watering  
redness
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### Short term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

#### Long term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

### Potential chronic health effects

Product/ingredient name	Test	Endpoint	Species	Result
Diethanolamine	OECD 408 Repeated Dose 90-Day Oral Toxicity Study in Rodents	Sub-chronic LOAEL Oral	Rat - Male, Female	14 to 25 mg/kg/d
	OECD 451 Carcinogenicity Studies	Chronic LOAEL Dermal	Rat - Male, Female	8 mg/kg
	OECD 413 Subchronic Inhalation Toxicity: 90-day Study	Sub-chronic NOEC Inhalation Dusts and mists	Rat - Male, Female	3 mg/m <sup>3</sup>
Methyldiethanolamine	EPA CFR	Sub-chronic NOAEL Dermal	Rat - Male, Female	750 mg/kg

- General** : No known significant effects or critical hazards.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : No known significant effects or critical hazards.

## Section 11. Toxicological information

**Developmental effects** : No known significant effects or critical hazards.

**Fertility effects** : No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Not available.

**Other information** : Not available.

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Test	Endpoint	Exposure	Species	Result
Diethanolamine	OECD 201 Alga, Growth Inhibition Test	Acute EC50	96 hours Semi-static	Algae	2.2 mg/l
	OECD 209 Activated Sludge, Respiration Inhibition Test	Acute EC50	30 minutes	Bacteria	>1000 mg/l
	EPA OPPTS	Acute EC50	48 hours Static	Daphnia	55 mg/l
	ASTM	Acute LC50	96 hours Static	Fish	1460 mg/l
	No official guidelines	Chronic NOEC	21 days Semi-static	Daphnia	0.78 mg/l
Methyldiethanolamine	DIN DIN 38412 Part 8 EU	Acute EC50	17 hours	Bacteria	413.8 mg/l
		Acute EC50	48 hours Static	Daphnia	233 mg/l
	DIN DIN 38412 part 9	Acute ErC50 (growth rate)	72 hours	Algae	176 mg/l
	DIN DIN 38412 Part 15	Acute LC50	96 hours Static	Fish	1000 to 2200 mg/l

### Persistence and degradability

Product/ingredient name	Test	Period	Result
Diethanolamine	OECD 301F Ready Biodegradability - Manometric Respirometry Test	28 days	93 %
Methyldiethanolamine	OECD 301A Ready Biodegradability - DOC Die-Away Test	18 days	96 %

**Conclusion/Summary** : Diethanolamine Readily biodegradable

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Diethanolamine	-	< 28 day(s)	Readily
Methyldiethanolamine	-	-	Readily

### Bioaccumulative potential

## Section 12. Ecological information

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Diethanolamine	-2.18	3.16	low
Methyldiethanolamine	-1.08	3.16	low

### Mobility in soil

Not available.

**Other adverse effects** : No known significant effects or critical hazards.

### Other ecological information

**BOD5** : Not determined.

**COD** : Not determined.

**TOC** : Not determined.

## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

## Section 14. Transport information

### Proper shipping name

**DOT** : Environmentally hazardous substance, liquid, n.o.s. (DIETHANOLAMINE)


**TDG** : Not regulated.

**IMDG** : Not regulated.

**IATA** : Not regulated.

Regulatory information	UN number	Classes	PG*	Label	Additional information

## Section 14. Transport information

<b>DOT Classification</b>	UN3082	9	III		<b>Reportable quantity</b> 169.53 lbs / 76.969 kg [19.182 gal / 72.612 L] Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.
<b>TDG Classification</b>	Not regulated.	-	-		-
<b>IMDG Classification</b>	Not regulated.	-	-		-
<b>IATA Classification</b>	Not regulated.	-	-		-

PG\* : Packing group

## Section 15. Regulatory information

### Safety, health and environmental regulations specific for the product

#### United States Regulations

**TSCA 8(b) inventory** : All components are listed or exempted.

**TSCA 5(a)2 final significant new use rule (SNUR)** : No ingredients listed.

**TSCA 5(e) substance consent order** : No ingredients listed.

**TSCA 12(b) export notification** : No ingredients listed.

**SARA 311/312** : Immediate (acute) health hazard

	<u>Product name</u>	<u>Concentration %</u>
<b>Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)</b>	: Diethanolamine	58.985

**Clean Air Act - Ozone Depleting Substances (ODS)** : This product does not contain nor is it manufactured with ozone depleting substances.

	<u>Product name</u>	<u>Concentration %</u>
<b>SARA 313 Form R - Reporting requirements</b>	: Diethanolamine	58.1 - 58.985

## Section 15. Regulatory information

<u>Ingredient name</u>	<u>%</u>	<u>Section 304 CERCLA Hazardous Substance</u>	<u>CERCLA Reportable Quantity (Lbs)</u>	<u>Product Reportable Quantity (Lbs)</u>	
<b>CERCLA Hazardous substances</b> :	Diethanolamine	58.985	Listed	100	170
	Ethylene oxide	0.0000015	Listed	10	666666667
	Propylene oxide	0.0000015	Listed	100	666666667

### State regulations

**PENNSYLVANIA - RTK** : Diethanolamine

**California Prop 65** : **WARNING:** This product contains a chemical known to the State of California to cause cancer.  
**WARNING:** This product contains less than 1% of a chemical known to the State of California to cause birth defects or other reproductive harm.

<u>Ingredient name</u>	<u>Cancer</u>	<u>Reproductive</u>
Diethanolamine	Yes.	No.
Ethylene oxide	Yes.	Yes.
Propylene oxide	Yes.	No.

### Canadian regulations

**CEPA DSL** : All components are listed or exempted.

**WHMIS Classes** : Class D-2A: Material causing other toxic effects (Very toxic).  
Class D-2B: Material causing other toxic effects (Toxic).  
Class E: Corrosive material

**This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.**

### Brazil Regulations

**Classification system used** : Norma ABNT-NBR 14725-2:2012

### International lists

**Australia inventory (AICS):** All components are listed or exempted.  
**China inventory (IECSC):** All components are listed or exempted.  
**Japan inventory:** All components are listed or exempted.  
**Korea inventory:** All components are listed or exempted.  
**Malaysia Inventory (EHS Register):** Not determined.  
**New Zealand Inventory of Chemicals (NZIoC):** All components are listed or exempted.  
**Philippines inventory (PICCS):** All components are listed or exempted.  
**Taiwan inventory (CSNN):** Not determined.

## Section 16. Other information

**Hazardous Material  
Information System (U.S.A.)** :

<b>Health</b>	*	2
<b>Flammability</b>		1
<b>Physical hazards</b>		0
<b>Personal protection</b>		

**The customer is responsible for determining the PPE code for this material.**

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

**National Fire Protection  
Association (U.S.A.)** :



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**Date of previous issue** : No previous validation.  
**Version** : 1

▣ Indicates information that has changed from previously issued version.

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**IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.**

**THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.**

## Section 16. Other information

*Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.*

**NO PERSON OR ORGANIZATION EXCEPT A DULY AUTHORIZED HUNTSMAN EMPLOYEE IS AUTHORIZED TO PROVIDE OR MAKE AVAILABLE DATA SHEETS FOR HUNTSMAN PRODUCTS. DATA SHEETS FROM UNAUTHORIZED SOURCES MAY CONTAIN INFORMATION THAT IS NO LONGER CURRENT OR ACCURATE. NO PART OF THIS DATA SHEET MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM, OR BY ANY MEANS, WITHOUT PERMISSION IN WRITING FROM HUNTSMAN. ALL REQUESTS FOR PERMISSION TO REPRODUCE MATERIAL FROM THIS DATA SHEET SHOULD BE DIRECTED TO HUNTSMAN, MANAGER, PRODUCT SAFETY AT THE ABOVE ADDRESS.**