

Section 4. First aid measures

- Eye contact** : Adverse symptoms may include the following:
irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
- Skin contact** : No specific data.
- Ingestion** : No specific data. May cause irritation of the digestive tract with accompanying nausea, vomiting and diarrhea.

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

- Notes to physician** : 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.

- Specific treatments** : No specific treatment. Treat symptomatically.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. Depending on the situation, the rescuer should wear an appropriate mask, gloves, protective clothing and a respirator or self-contained breathing apparatus. Mouth-to-mouth resuscitation of oral exposure patients is not recommended. First-aiders with contaminated clothing should be properly decontaminated.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

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 : No specific fire or explosion hazard. The substance will not burn. Undergoes thermal decomposition at elevated temperatures to release toxic and flammable gases.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
nitrogen oxides
sulfur 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.

Remark : Contain and collect the water used to fight the fire for later treatment and disposal.

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. Keep unnecessary and unprotected personnel from entering. Avoid breathing dust. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized 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".

Section 6. Accidental release measures

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Will dissolve and disperse in water. Reclaiming material may not be possible. If possible, recover spilled product and place in suitable containers for recycle, reuse, or disposal. Product will promote algae growth and may degrade water quality and taste. Notify downstream water users. Inform the relevant authorities if the product has caused adverse impacts (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Small spill** : Move containers from spill area. Avoid dust generation. Recycle, if possible.
or
Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Avoid creating dusty conditions and prevent wind dispersal. Recycle to process, if possible.
or
Place spilled material in an appropriate container for disposal. Dispose of via a licensed waste disposal contractor. 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 dust.

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. May form steep piles that can collapse without warning when stored in bulk. Avoid forming steep slopes when removing product. Ensure that bulk bags or smaller packaged products stored in tiers are stacked, racked, blocked, interlocked, or otherwise secured to prevent sliding, rolling, or collapse. Use caution when opening truck or railcar doors as product may have shifted during transport.

Must be stored in a dry location. Absorbs moisture on long-term storage under high humidity conditions. Store away from incompatible materials (see Section 10). When product is stored in sealable containers, keep container tightly closed and sealed until ready for use. Sealable 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. Refer to NFPA 400 Hazardous Materials Code for further information on the safe storage and handling of hazardous materials.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Potassium magnesium sulfate	OSHA (United States): Particulates not otherwise regulated (PNOR) TWA (8 hours), Total dust: 15 mg/m ³ ; Respirable fraction: 5 mg/m ³ .
Potassium nitrate	OSHA (United States): Particulates not otherwise regulated (PNOR) TWA (8 hours), Total dust: 15 mg/m ³ ; Respirable fraction: 5 mg/m ³ .
Calcium sulfate, dihydrate	ACGIH TLV (United States, 4/2014). TWA: 10 mg/m ³ 8 hours. Form: Inhalable fraction
Ammonium dihydrogen orthophosphate	OSHA (United States): Particulates not otherwise regulated (PNOR)

Section 8. Exposure controls/personal protection

Limestone	TWA (8 hours), Total dust: 15 mg/m ³ ; Respirable fraction: 5 mg/m ³ . OSHA (United States): Particulates not otherwise regulated (PNOR) TWA (8 hours), Total dust: 15 mg/m ³ ; Respirable fraction: 5 mg/m ³ .
Ammonium sulfate	OSHA (United States): Particulates not otherwise regulated (PNOR) TWA (8 hours), Total dust: 15 mg/m ³ ; Respirable fraction: 5 mg/m ³ .
Ammonium nitrate	OSHA (United States): Particulates not otherwise regulated (PNOR) TWA (8 hours), Total dust: 15 mg/m ³ ; Respirable fraction: 5 mg/m ³ .
Sodium nitrate	OSHA (United States): Particulates not otherwise regulated (PNOR) TWA (8 hours), Total dust: 15 mg/m ³ ; Respirable fraction: 5 mg/m ³ .

Appropriate engineering controls : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, 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. Wash contaminated clothing before reusing.

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: safety glasses with side-shields. If operating conditions cause high dust concentrations to be produced, use dust goggles.

Skin protection

Hand protection : The personal protective equipment required varies, depending upon your risk assessment. No special protection is required. For prolonged or repeated handling, use the following type of gloves: leather work gloves

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. Cotton or cotton/synthetic overalls or coveralls are normally suitable.

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. No special measures are typically indicated.

Respiratory protection : A respirator is not needed under normal and intended conditions of product use. Use a properly fitted, particulate filter 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. Contact your personal protective equipment manufacturer to verify the compatibility of the equipment for the intended purpose. For U.S. work sites where respiratory protection is required, ensure that a respiratory protection program meeting 29 CFR 1910.134 requirements is in place.

Section 9. Physical and chemical properties

Appearance

Physical state	: Granular solid.
Color	: Gray.
Odor	: Odorless.
Odor threshold	: Not applicable.
pH	: 6 [Conc. (% w/w): 10%]
Melting point	: Not available.
Boiling point	: Decomposes.
Flash point	: [Product does not sustain combustion.]
Evaporation rate	: Not applicable.
Flammability (solid, gas)	: Not applicable. The substance will not burn. Undergoes thermal decomposition at elevated temperatures to release toxic and flammable gases.
Lower and upper explosive (flammable) limits	: Not applicable.
Vapor pressure	: Not applicable.
Vapor density	: Not applicable.
Relative density	: Not available.
Solubility	: Easily soluble in the following materials: hot water. Soluble in the following materials: cold water.
Solubility in water	: Water soluble.
Partition coefficient: n-octanol/water	: Not available.
Auto-ignition temperature	: Not applicable.
Decomposition temperature	: Not available.
Viscosity	: Not applicable.

Aerosol product

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: Absorbs moisture on long-term storage under high humidity conditions. Store in a well-ventilated, dry place. Protect from moisture.
Incompatible materials	: Incompatible with halogens. Incompatible with copper alloys. Contact your sales representative or a metallurgical specialist to ensure compatibility with your equipment.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Section 11. Toxicological information

Product/ingredient name	Result	Species	Dose	Exposure
Potassium magnesium sulfate	LD50 Oral	Rat	3 g/kg	-
Potassium nitrate	LD50 Oral	Rat	3540 mg/kg	-
	LD50 Oral	Rat	3750 mg/kg	-
Calcium sulfate, dihydrate	LC50 Inhalation Dusts and mists	Rat - Male, Female	>3.26 mg/l CaSO4.2H2O	4 hours
	LD50 Oral	Rat - Male, Female	1581 mg/kg	-
Ammonium dihydrogen orthophosphate	LD50 Oral	Rat - Male, Female	>2000 mg/kg	-
Ammonium sulfate	LD50 Oral	Mouse - Male, Female	3040 mg/kg	-
	LD50 Oral	Rat	2840 mg/kg	-
	LD50 Oral	Rat - Male, Female	>2000 mg/kg	-
Ammonium nitrate	LD50 Oral	Rat	2217 mg/kg	-
	LD50 Oral	Rat - Male, Female	2950 mg/kg	-
Sodium nitrate	LD50 Oral	Rat	1267 mg/kg	-

Conclusion/Summary : Very low toxicity to humans or animals. No known significant effects or critical hazards.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Ammonium sulfate	Skin	Rabbit	0	20 hours	24 hours
	Eyes	Rabbit	0	-	72 hours
Ammonium nitrate	Skin	Rabbit	0	-	72 hours
	Eyes - Edema of the conjunctivae	Rabbit	3	-	3 days

Conclusion/Summary

Skin : No known significant effects or critical hazards.

Eyes : Causes eye irritation.

Respiratory : No known significant effects or critical hazards.

Sensitization

Product/ingredient name	Route of exposure	Species	Result
Ammonium sulfate	skin	Guinea pig	Not sensitizing
Calcium sulfate, dihydrate	skin	Guinea pig	Not sensitizing
Ammonium nitrate	skin	Mouse	Not sensitizing

Conclusion/Summary

Skin : Non-sensitizer.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Product/ingredient name	Test	Experiment	Result
Potassium nitrate	OECD 471 Bacterial Reverse Mutation Test	Experiment: In vitro Subject: Bacteria	Negative
	OECD 479 Genetic Toxicology: <i>In vitro</i> Sister Chromatid Exchange Assay in Mammalian Cells	Experiment: In vitro Subject: Mammalian-Animal	Negative
Calcium sulfate, dihydrate	OECD 476 <i>In vitro</i> Mammalian Cell Gene Mutation Test	Experiment: In vitro Subject: Mammalian-Animal Cell: Germ	Negative
Ammonium sulfate	OECD 476	Experiment: In vitro Subject: Mammalian-Animal Cell: Somatic	Negative
	OECD 473	Experiment: In vitro Subject: Mammalian-Animal Cell: Germ	Negative
Ammonium nitrate	OECD 471 Bacterial Reverse Mutation Test	Experiment: In vitro Subject: Bacteria	Negative

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	OECD 476 <i>In vitro</i> Mammalian Cell Gene Mutation Test	Experiment: <i>In vitro</i> Subject: Mammalian-Animal	Negative
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Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Ammonium sulfate	Negative - Oral - TCLO	Rat - Male, Female	1288 mg/kg	2 years; 7 days per week

Conclusion/Summary : Potential for nitrosamine formation if ingested. Do not ingest.

Classification

Product/ingredient name	OSHA	IARC	NTP
Ammonium sulfate	None.	-	-

Reproductive toxicity

Product/ingredient name	Maternal toxicity	Fertility	Developmental toxin	Species	Dose	Exposure
Potassium nitrate	Negative	Negative	Negative	Rat - Male, Female	Oral: 1500 mg/ kg	-
Calcium sulfate, dihydrate Ammonium sulfate	Negative Negative	Negative Negative	Negative -	Rat - Male, Female Mouse - Male, Female	Oral Oral: 5000 mg/ kg	- -

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Ammonium sulfate	Negative - Oral	Rat - Male, Female	1500 mg/kg	-

Conclusion/Summary : No known significant effects or critical hazards.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Routes of entry anticipated: Inhalation.

Potential acute health effects

- Eye contact** : Causes eye irritation.
- Inhalation** : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : May cause irritation of the digestive tract with accompanying nausea, vomiting and diarrhea.

Symptoms related to the physical, chemical and toxicological characteristics

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

Section 11. Toxicological information

Ingestion : No specific data. May cause irritation of the digestive tract with accompanying nausea, vomiting and diarrhea.

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

Short term exposure

Potential immediate effects : May interfere with the oxygen carrying capacity of the blood if ingested in large quantities or over a prolonged period of time. Persons with anemia, bowel diseases, or infants, are more likely to develop effects. Over-exposure by ingestion is unlikely under normal working conditions.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Potential for nitrosamine formation if ingested. Do not ingest.

Potential chronic health effects

Product/ingredient name	Result	Species	Dose	Exposure
Ammonium sulfate	Chronic NOAEL Oral	Rat - Male, Female	256 mg/kg	52 weeks; 7 days per week
Ammonium nitrate	Chronic NOAEL Oral	Rat - Male, Female	256 mg/kg	-

Conclusion/Summary : No known significant effects or critical hazards.

General : No known significant effects or critical hazards.

Carcinogenicity : Potential for nitrosamine formation if ingested. Do not ingest.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

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

Route	ATE value
Oral Inhalation (dusts and mists)	2608.8 mg/kg 17.24 mg/l

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Potassium nitrate	Acute LC50 120 to 140 mg/l Marine water	Crustaceans - Portunus pelagicus - Juvenile (Fledgling, Hatchling, Weanling)	48 hours
Calcium sulfate, dihydrate	Acute LC50 490 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 1200000 µg/l Fresh water	Fish - Lepomis macrochirus	96 hours
	Acute LC50 191000 µg/l Fresh water	Fish - Poecilia reticulata - Fry	96 hours
	Acute LC50 22500 µg/l Fresh water	Fish - Gambusia affinis - Adult	96 hours
	EC50 >79 mg/l	Algae	72 hours
	EC50 >79 mg/l	Daphnia	48 hours
Ammonium sulfate	EC50 >790 mg/l	Micro-organism	3 hours
	Acute LC50 >1970 mg/l	Fish	96 hours
	Acute LC50 2.6 mg/l Fresh water	Crustaceans - Ceriodaphnia dubia - Young	48 hours
Ammonium nitrate	Acute LC50 14000 µg/l Fresh water	Daphnia - Daphnia magna - Young	48 hours
	Acute LC50 68 µg/l Fresh water	Fish - Oncorhynchus gorbuscha - Alevin	96 hours
	Acute LC50 53 mg/l	Fish - Oncorhynchus mykiss	96 hours
Ammonium nitrate	Chronic NOEC 6 to 12 mg/l Fresh water	Crustaceans - Cladocera	21 days

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Sodium nitrate	Acute EC50 522 mg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute LC50 161 mg/l Fresh water	Crustaceans - Hyalella azteca - Adult	48 hours
	Acute LC50 323 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Chronic NOEC 1.6 mg/l Fresh water	Fish - Coregonus clupeaformis - Embryo	120 days

Conclusion/Summary : Excessive nutrient runoff to a body of water may result in eutrophication.

Persistence and degradability

Not available.

Bioaccumulative potential

Not available.

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Mobility : Not available.

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

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 packaging should be recycled. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	ADR/RID	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-	-	-
Transport hazard class(es)	-	-	-	-	-	-
Packing group	-	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.	No.
Additional information	-	-	-	-	-	-

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15. Regulatory information

U.S. Federal Regulations: : TSCA 8(a) CDR Exempt/Partial exemption: Not determined
TSCA 8(b) Active inventory:: All components are listed or exempted.

Clean Air Act Section 112 : Not listed

(b) Hazardous Air Pollutants (HAPs)

Clean Air Act Section 602 : Not listed

Class I Substances

Clean Air Act Section 602 : Not listed

Class II Substances

DEA List I Chemicals : Not listed

(Precursor Chemicals)

DEA List II Chemicals : Not listed

(Essential Chemicals)

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Immediate (acute) health hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard.
Potassium nitrate	19 - 21	Yes.	No.	No.	No.	Yes.
Ammonium nitrate	3 - 5	Yes.	No.	No.	Yes.	No.
Sodium nitrate	1	Yes.	No.	No.	Yes.	No.

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	Potassium nitrate	7757-79-1	21
	Ammonium dihydrogen orthophosphate	7722-76-1	8 - 11
	Ammonium sulfate	7783-20-2	0 - 8
	Ammonium nitrate	6484-52-2	3
	Sodium nitrate	7631-99-4	1
Supplier notification	Potassium nitrate	7757-79-1	21
	Ammonium dihydrogen orthophosphate	7722-76-1	8 - 11
	Ammonium sulfate	7783-20-2	0 - 8
	Ammonium nitrate	6484-52-2	3
	Sodium nitrate	7631-99-4	1

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts : The following components are listed: Potassium nitrate; Ammonium sulfate; Calcium carbonate; Sodium nitrate; Ammonium nitrate

New York : None of the components are listed.

New Jersey : The following components are listed: Potassium nitrate; Nitric acid, potassium salt; Calcium carbonate; limestone; Sodium nitrate; Nitric acid, sodium salt; Ammonium nitrate; Nitric acid, ammonium salt

Pennsylvania : The following components are listed: Nitric acid, potassium salt; Sulfuric acid diammonium salt; Nitric acid, ammonium salt; Limestone; Nitric acid, sodium salt

California Prop. 65

Not applicable – This product is not registered for sale into the State of California and has not been evaluated for Prop 65 notification requirements.

International regulations

International lists

National inventory

Canada : All components are listed or exempted.

Europe : Not determined.

Section 16. Other information

History

Date of issue/Date of revision : 12/22/2021

Date of previous issue : 5/6/2019

Version : 2.2

Key to abbreviations

: ATE = Acute Toxicity Estimate
 BCF = Bioconcentration Factor
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals
 IATA = International Air Transport Association
 IBC = Intermediate Bulk Container
 IMDG = International Maritime Dangerous Goods
 LogPow = logarithm of the octanol/water partition coefficient
 MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
 UN = United Nations

References

: Transportation of Dangerous Goods Act and Clear Language Regulations, current edition at time of SDS preparation, Transport Canada;
 Hazardous Products Act and Regulations, current revision at time of SDS preparation, Health Canada;
 Domestic Substances List, current revision at time of SDS preparation, Environment Canada;
 29 CFR Part 1910, current revision at time of SDS preparation, U.S. Occupational Safety and Health Administration;
 40 CFR Parts 1-799, current revision at time of SDS preparation, U.S. Environmental Protection Agency;
 49 CFR Parts 1-199, current revision at time of SDS preparation, U.S. Department of Transport;
 Mexican Official Standard NOM-018-STPS-2015, Harmonised System for the Identification and Communication of Hazards and Risks by Hazardous Chemicals in the Workplace;
 NORMA Oficial Mexicana NOM-010-STPS-2014, Agentes químicos contaminantes del ambiente laboral-Reconocimiento, evaluación y control.
 Mexican Official Standard NOM-002-SCT / 2011, List of the most commonly transported hazardous substances and materials;
 Threshold Limit Values for Chemical Substances, current edition at time of SDS preparation, American Conference of Governmental Industrial Hygienists;
 NFPA 400, National Fire Codes, National Fire Protection Association, current edition at time of SDS preparation;
 NFPA 704, National Fire Codes, National Fire Protection Association, current edition at time of SDS preparation;
 Corrosion Data Survey, Sixth Edition, 1985, National Association of Corrosion Engineers;
 ERG 2016, Emergency Response Guidebook, U.S. Department of Transport, Transport Canada, and the Secretariat of Transportation and Communications of Mexico
 Hazardous Substances Data Bank, current revision at time of SDS preparation, National Library of Medicine, Bethesda, Maryland
 Integrated Risk Information System, current revision at time of SDS preparation, U.S. Environmental Protection Agency, Washington, D.C.
 Pocket Guide to Chemical Hazards, current revision at time of SDS preparation, National Institute for Occupational Safety and Health, Cincinnati, Ohio ;
 Agency for Toxic Substances and Disease Registry Databank, current revision at time of SDS preparation, U.S. Department of Health and Human Services, Atlanta, Georgia
 National Toxicology Program, Report on Carcinogens, Division of the National Institute of Environmental Health Sciences, Research Triangle Park, North Carolina.
 Registry of Toxic Effects of Chemical Substances. National Institute for Occupational Safety and Health, Cincinnati, Ohio
 California Code of Regulations, Title 27, Div 4, Chapter 1, Proposition 65 Aug 30, 2018 rev and current updates

 Indicates information that has changed from previously issued version.

Notice to reader

Section 16. Other information

The information and recommendations contained in this Safety Data Sheet ("SDS") relate only to the specific material referred to herein (the "Material") and do not relate to the use of such Material in combination with any other material or process. The information and recommendations contained herein are believed to be current and correct as of the date of this SDS. HOWEVER, THE INFORMATION AND RECOMMENDATIONS ARE PRESENTED WITHOUT WARRANTY, REPRESENTATION OR LICENSE OF ANY KIND, EXPRESS OR IMPLIED, WITH RESPECT TO THEIR ACCURACY, CORRECTNESS OR COMPLETENESS, AND THE SELLER, SUPPLIER AND MANUFACTURER OF THE MATERIAL AND THEIR RESPECTIVE AFFILIATES (COLLECTIVELY, THE "SUPPLIER") DISCLAIM ALL LIABILITY FOR RELIANCE ON SUCH INFORMATION AND RECOMMENDATIONS. This SDS is not a guarantee of safety. A buyer or user of the Material (a "Recipient") is responsible for ensuring that it has all current information necessary to safely use the Material for its specific purpose. FURTHERMORE, THE RECIPIENT ASSUMES ALL RISK IN CONNECTION WITH THE USE OF THE MATERIAL. THE RECIPIENT ASSUMES ALL RESPONSIBILITY FOR ENSURING THE MATERIAL IS USED IN A SAFE MANNER IN COMPLIANCE WITH APPLICABLE ENVIRONMENTAL, HEALTH, SAFETY AND SECURITY LAWS, POLICIES AND GUIDELINES. THE SUPPLIER DOES NOT WARRANT THE MERCHANTABILITY OF THE MATERIAL OR THE FITNESS OF THE MATERIAL FOR ANY PARTICULAR USE AND ASSUMES NO RESPONSIBILITY FOR INJURY OR DAMAGE CAUSED DIRECTLY OR INDIRECTLY BY OR RELATED TO THE USE OF THE MATERIAL.