SAFETY DATA SHEET
Anhydrous Ammonia

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifier

Product name: Anhydrous Ammonia
Product code(s): Anhydrous Ammonia
Synonym(s): Ammonia; Ammonia gas; Free ammonia; Ammonia, anhydrous
REACH Registration Number: No data available

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

General use: Fertilizer
Uses advised against: No uses advised against

1.3 Details of the supplier and of the safety data sheet

Distributor
Trammo, Inc., Commodities Division
3000 Bayport Drive, Suite 100
Tampa, FL 33607-8403 USA
+1-813-261-0600

1.4 Emergency telephone number

Chemtrec: +1-800-424-9300

SECTION 2 - HAZARDS IDENTIFICATION

2.1 Classification of substance or mixture

Product definition: Substance
Classification in accordance with 28 CFR 1910 (OSHA HCS) and Regulation EC No 1272/2008
Flammable Gas - Category 2 [H221]
Gases Under Pressure - Liquefied Gas [H280]
Skin Corrosion - Category 1B [H314]
Acute Toxicity, Inhalation - Category 3 [H331]
Aquatic Acute - Category 1 [H400]

2.2 Label elements

Hazard symbol(s):

GHS04 GHS05 GHS06 GHS09

Signal word: Danger

Hazard statement(s):
H221 - Flammable gas
H280 - Contains gas under pressure; may explode if heated
H314 - Causes severe skin burns and eye damage
H331 - Toxic if inhaled
H400 - Very toxic to aquatic life

Precautionary Statements:

[Prevention]
P210 - Keep away from heat, open flames and hot surfaces. No smoking.
P233 - Keep container tightly closed.
P260 - Do not breathe fumes or vapor.
P264 - Wash hands and other skin areas exposed to material thoroughly after handling.
P271 - Use only outdoors or in a well-ventilated area.
P273 - Avoid release to the environment.
P280 - Wear protective gloves, protective clothing, eye protection and face protection.

[Response]
P377 - Leaking gas fire: Do not extinguish unless leak can be stopped safely.
P381 - Eliminate all ignition sources if safe to do so.
P301 + P330 + P331 + P310 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor.
P303 + P361 + P350 - IF ON SKIN: Remove immediately all contaminated clothing. Rinse skin with water or shower.
P304 + P340 + P310 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or 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 or doctor.
P363 - Wash contaminated clothing before reuse.
P321 + P310 - Specific treatment: Immediately call a POISON CENTER or doctor. Refer to Section 4 of this SDS.
P391 - Collect spillage.

[Storage]
P410 + P 405 + P403 + P233 - Protect from sunlight. Store locked up in a well-ventilated place. Keep container tightly closed.

[Disposal]
P501 - Dispose of contents in accordance with national and local regulations.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

% by Weight	Ingredient	CAS Number	EC Number	Index Number	GHS Classification
99 - 100	Anhydrous Ammonia	7664-41-7	231-635-3	007-001-00-5	H221, H280, H314, H331, H400

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to the health or the environment and hence require reporting in this section.

3.2 Mixtures

Not applicable

SECTION 4 - FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation: Wear proper personal protective equipment described in Section 8 and move the exposed person to fresh air immediately. If breathing is difficult or irregular, administer oxygen; if respiratory arrest occurs, start artificial respiration by trained personnel. Do not use mouth-to-mouth method if victim inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If unconscious, maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Immediately contact a doctor, paramedical personnel or POISON CENTER for instructions. Symptoms may be delayed.

Eyes: Immediately flush eyes with large amounts of water (preferable warm water) for at least 30 minutes, occasionally lifting the upper and lower lids. Remove contact lenses, if present and easy to do, after first 2 minutes and continue rinsing. Seek immediate medical advice, preferably from an ophthalmologist. Do not put any ointment, oils or medication in the victim's eyes without specific instructions from medical personnel.

Skin: Flush skin with large amounts of water. Contact with rapidly expanding gas may cause frostbite and may freeze clothing to skin. Remove contaminated clothing, but only after carefully flushing skin with water and warming it to prevent clothing from sticking to skin during removal and tearing off large sections of skin. Continue rinsing for at lease 30 minutes or longer, depending on the amount and duration of exposure to the chemical. Get medical attention if irritation develops or persists. Do not apply salves or ointments to affected areas unless directed to do so by medical personnel. Warm up the frozen tissues and immediately get medical attention. Wash clothes and shoes thoroughly before use.

Ingestion: Ingestion is not a likely route of exposure. Refer to first aid measures for inhalation.

4.2 Most important symptoms and effects, both acute and delayed

Potential health symptoms and effects

Eyes: Severely corrosive to eyes and surrounding tissue. Causes severe irritation, burns, permanent eye damage and blindness. Direct contact with liquefied gas can freeze the eye or cause frostbite.

Skin: Corrosive to skin. Symptoms include redness, pain, swelling, blistering, severe burns and frostbite. Skin damage depends upon the length and concentration of exposure and can range from mild irritation, to a darkened freeze-dry burn, to tissue destruction. Permanent scarring can result. Direct contact with liquefied gas can chill or freeze the skin (frostbite). Symptoms of more severe frostbite include a burning sensation and stiffness. The skin may become a waxy white or yellow color. Blistering, tissue death and infection may develop in severe cases. Ammonia may cause liquefaction necrosis.

Inhalation: Toxic if inhaled. Severely irritating and corrosive to the respiratory system. Ammonia is severely irritating to the nose, throat and lungs. Symptoms may include burning sensation, coughing, wheezing, shortness of breath, headache and nausea. Symptoms may develop hours after exposure and are made worse by physical effort. Long-term damage may result from short-term damage. Overexposure may cause central nervous system effects including unconsciousness and convulsions. Upper airway damage is more likely and can result in bronchospasm (closing of the airway). Vocal chords are particularly vulnerable to corrosive effects of high ammonia concentrations. Lower airway damage can result in pulmonary edema and hemorrhage. Death has occurred following a 5 minute exposure to 5,000 ppm of ammonia.

Ingestion: Ingestion is not a likely route of exposure.

Chronic: Repeated skin exposure can cause dermatitis. Chronic exposure can damage the lungs, respiratory tract, skin and eyes. May cause permanent eye damage and blindness.

4.3 Indication of any immediate medical attention and special treatment needed

Advice to doctor and hospital personnel: Treat symptomatically and supportively. Acute respiratory effects, including pulmonary edema, may be delayed. Pneumonitis should be expected after inhalation or ingestion. If severe exposure is expected, observe for 48 - 72 hours for delayed pulmonary edema.

SECTION 5 - FIRE FIGHTING MEASURES

5.1 Extinguishable media

Suitable methods of extinction: Use extinguishing media suitable for surrounding fire.

Unsuitable methods of extinction: None known

5.2 Special hazards arising from the substance or mixture

Flammable gas. Ammonia vapor in high concentrations (15 - 28% by weight) will burn. It is unlikely that such concentrations will occur except in confined spaces or in the proximity of large spills. Ammonia can decompose at high temperatures forming extremely flammable hydrogen gas. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products. Containers may explode if exposed to fire. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Symptoms of overexposure to these gases may not be apparent. Seek immediate medical advice.

Explosion hazards: Ammonia vapor in high concentrations in confined spaces can explode on contact with an ignition source.

5.3 Advice for firefighters

Firefighters must wear full bunker gear including NIOSH-approved positive pressure self-contained breathing apparatus to protect against potential hazardous combustion or decomposition products and oxygen deficiencies. Evacuate area and fight fire from a maximum distance or use unmanned hose holders or monitor nozzles. Ruptured containers release large amounts of gas. Containers can explode due to pressure build-up and explode if exposed to radiant heat. Cylinders may rocket. Cool adjacent containers with flooding quantities of water until well after the fire is

out. Withdraw immediately from the area if there is a rising sound from a venting safety device or discoloration of cylinders, vessels, tanks or pipelines.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Evacuate and isolate the area immediately. Keep unprotected and non-essential personnel out of the area. Wear appropriate protective clothing, including respiratory protection, designated in Section 8.2. Eliminate all possible sources of ignition. NO SMOKING. Provide maximum explosion-proof ventilation to the area, or move leaking cylinders or containers to a well-ventilated and secure area if it is safe to do so.

6.2 Environmental precautions

Avoid dispersal of spilled material or run-off and prevent contact with soil and entry into drains, sewers or waterways.

6.3 Methods and materials for containment and cleaning up

Knock down gas with water fog or fine water spray. Do not direct water at spill or source. If possible, turn leaking container so gas escapes rather than liquefied gas. Dike spill to prevent runoff. Runoff from controlling ammonia vapors may be contaminated and therefore, should be contained and not released to drains or the environment.

6.4 Reference to other sections

See Section 8.2 for information on appropriate personal protective equipment.

SECTION 7 - HANDLING AND STORAGE

7.1 Precautions for safe handling

Wear all appropriate personal protective equipment specified in Section 8.2. Do not get in eyes or on skin or clothing. Do not breathe fumes or vapor. If normal use of material presents a respiratory hazard, use only adequate ventilation or wear an appropriate respirator. Spills should be cleaned up promptly. Wash contaminated clothing and shoes thoroughly before reuse.

Use only approved pressure vessels with appropriate safety devices. Avoid copper or copper containing alloys such as brass, for tanks, vessels, pipes or valves. Use iron or steel tanks and piping, and valves especially designed for ammonia service. All equipment used to handle, store, transfer or apply anhydrous ammonia must be properly engineered, constructed and maintained in compliance with all applicable regulations and standards. Refer to 29 CFR 1910.111 Storage and Handling of Anhydrous Ammonia, 29 CFR 1910.119 Process Safety Management of Highly Hazardous Materials, and the current ANSI standard K61.1, Safety Requirements for the Storage and Handling of Anhydrous Ammonia, for additional information.

Advice on protection against fire and explosion

Ammonia vapor in high concentrations in confined spaces can explode on contact with an ignition source. Containers can explode due to pressure buildup when exposed to radiant heat as in fire situations. Ruptured containers release large volumes of potentially flammable gas.

7.2 Conditions for safe storage, including any incompatibilities

Store in dry, cool, well-ventilated areas away from incompatible materials (refer toSection 10.5), food and drink. Use only approved pressure vessels with appropriate safety devices (refer to Section 7.1). Zinc, copper, silver, cadmium and their alloys should not be used in ammonia systems due to their potential for rapid corrosion when exposed to ammonia. Keep away from oxidizers and combustible materials. Protect from high temperatures and sources of ignition. Keep locked up and out of reach of children.

7.3 Specific end uses

Apart from the uses mentioned in Section 1.2, no other specific uses are stipulated.

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Occupational exposure limit values

CAS Number	Ingredient	OSHA	ACGIH	NIOSH
7664-41-7	Anhydrous Ammonia	50 ppm; 35 mg/m^3 TWA	25 ppm; 17 mg/m^3 TWA 35 ppm; 24 mg/m^3 STEL	25 ppm; 17 mg/m^3 TWA 35 ppm; 24 mg/m^3 STEL

8.2 Exposure controls

Engineering measures: Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. Use adequate ventilation. Local exhaust is preferable. Refer to Section 7.1 for additional data.

Individual protection measures: Wear protective clothing to prevent repeated or prolonged contact with product. Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the representative supplier.

Hygiene measures: Facilities storing or using this material should be equipped with an eyewash station and safety shower. Change contaminated clothing. Preventive skin protection is recommended. Wash hands thoroughly after use, before eating, drinking, smoking or using the lavatory.

Eye/face protection: Wear protective goggles having a vapor tight seal and a full face shield. Refer to 29 CFR 1910.133, ANSI Z87.4 or Standard EN 166.

Hand protection: Wear butyl rubber or neoprene gloves, or those recommended by glove supplier for protection against materials in Section 3. Gloves should be impermeable to chemicals and oil. Breakthrough time of gloves must be greater than the intended use period.

Other protective equipment: Protective clothing and boots. Wear a chemical protective, full-body suit and self-contained breathing apparatus (SCBA).

Respiratory protection: Wear an approved respirator when handling this product. Where risk assessment shows air-purifying respirators are appropriate use a full-faced respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Follow OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149.

Environmental exposure controls: Do not empty into drains.

PPE must not be considered a long-term solution to exposure control. PPE usage must be accompanied by employer programs to properly select, maintain, clean fit and use. Consult a competent industrial hygiene resource to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

*It is recommended that a full face shield be worn in addition to splash goggles when using this product.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Colorless gas under ambient conditions; liquid under pressure
Odor	Ammonia; sharp, pungent odor
Odor Threshold	25 ppm
Molecular Weight	17.03 g/mol
Chemical Formula	NH_3
pH	11.6 (1 N aqueous solution)
Freezing/Melting Point, Range	-77.8 °C (-108 °F)
Initial Boiling Point	-33.3 °C (-27.9 °F)
Evaporation Rate	No data available
Flammability (solid, gas)	Flammable gas
Flash Point	No data available
Autoignition Temperature	651 °C (1,204 °F), if catalyzed; 854.4 °C (1,570 °F), if uncatalyzed
Decomposition Temperature	No data available
Lower Explosive Limit (LEL)	15% (v)
Upper Explosive Limit (UEL)	28% (v)
Vapor Pressure	8.574 hPa @ 20 °C (68 °F)
Vapor Density	0.59 (Air = 1)
Specific Gravity of Gas	0.596 @ 0 °C (air = 1)
Specific Gravity of Liquid	0.682 @ -33.3 °C (water = 1)
Viscosity	No data available
Solubility in Water	47% @ 0°C
Partition Coefficient: n-octanol/water	log Pow = -1.14 @ 25 °C
Oxidizing Properties	Not applicable
Explosive Properties	Not applicable
Volatiles by Weight @ 21 ºC	100%

9.2 Other data

Critical Temperature	133 °C (271.4 °F)
Critical Pressure	111.5 atm

SECTION 10 - STABILITY AND REACTIVITY

10.1 Reactivity

Atmospheric ammonia reacts with ozone, hydroxyl radicals and atomic oxygen.

10.2 Chemical stability

This product is stable under recommended storage conditions, handling and use.

Hazardous polymerization does not occur.

10.3 Possibility of hazardous reactions

May react explosively or violently with interhalogens, strong oxidizers, nitric acid, fluorine and nitrogen oxide. Forms sensitive explosive mixtures with air, hydrocarbons, ethanol and chlorine. May form toxic gases with bleach. May form explosive compounds with mercury, gold, elemental silver and silver compounds and tellurium halides.

10.4 Conditions to avoid

Heat, sources of ignition and contact with incompatible materials.

10.5 Incompatible materials

Copper, silver, cadmium and zinc and their alloys; mercury, tin, acids, oxidizing agents, alcohols, halogens and aldehydes

10.6 Hazardous decomposition products

Thermal decomposition products include flammable hydrogen gas.

SECTION 11 - TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute oral toxicity

No data available

Acute inhalation toxicity

LC_{50}, rat: 5.1 mg/l - 1h; 2,000 ppm - 4 h

Acute dermal toxicity

No data available

Skin irritation/corrosion

Causes burns.

Eye irritation/corrosion
Causes severe eye irritation and burns, May cause serious and permanent eye damage and blindness.

Sensitization
No data available

Genotoxicity
No data available

Mutagenicity
No data available

Specific organ toxicity - single exposure
Toxic if inhaled. Causes respiratory irritation.

Specific organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

11.2 Further information

No component of this product is present at levels greater than or equal to the 0.1% threshold (de minimis) is identified as a probable, possible, potential or confirmed carcinogen by ACGIH, IARC, NTP or OSHA. No data is available regarding the mutagenicity or teratogenicity of this material, nor is there available data that indicates that it causes adverse developmental or fertility effects.

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12 - ECOLOGICAL INFORMATION

12.1 Toxicity

Acutely toxic for aquatic organisms. Harmful effect is due to pH shift.

Acute and prolonged toxicity to fish:	LC_{50} - Cyprinus carpio (Common Carp), 96 h: 0.44 mg/l
	LC_{50} - Lepomis macrochirus (Bluegill), 96 h: 0.26 - 4.6 mg/l
Acute toxicity to aquatic invertebrates:	EC_{50} - Daphnia magna (Water flea), 48 h: 3.61 mg/l

12.2 Persistence and degradability

Inorganic substances are not biodegradable. Methods for the determination of biodegradability are not applicable to inorganic substances.

12.3 Bioaccumulation potential

Substance is not expected to bioaccumulate.

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available.

12.6 Other adverse effects

Additional ecological information

Do not allow material to run into surface waters, wastewater or soil.

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

SECTION 13 - DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Methods of disposal: Recover ammonia if feasible. Otherwise, let ammonia evaporate if appropriate. Only personnel experienced in ammonia spills should add water to liquid ammonia. Consult local, state or federal regulatory agencies for acceptable disposal procedures and disposal locations. Dispose of surplus and non-recyclable product via a licensed waste disposal contractor. 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. Avoid dispersal of spilt material and runoff, and contact with soil, waterways, drains and sewers.

Hazardous waste: Anhydrous Ammonia is classified as hazardous waste under RCRA 40 CFR 261.32 - Corrosive, #D002. For Hazardous Waste Regulations call the RCRA Hotline at (800) 424-9346.

SECTION 14 - TRANSPORT INFORMATION

Note: Transportation information provided is for reference only. Customer is urged to consult 49 CFR 100 - 177, IMDG, IATA, EC, United Nations TDG and WHMIS (Canada) TDG information manuals for detailed regulations and exceptions covering specific container sizes, packaging materials and methods of shipping.

US DOT (Domestic Ground Transportation)

Proper Shipping Name:	Anhydrous Ammonia
Hazard Class:	2.2
UN/NA:	UN1005
Packing Group:	----------
NAERG:	Guide #125
Packaging Authorization:	Non-Bulk: 49 CFR 173.304; Bulk: 173.314
Packaging Exceptions:	None

IMO/IMDG (Water Transportation)

Proper Shipping Name:	Anhydrous Ammonia
Hazard Class:	2.3 (8)
UN/NA:	UN1005
Packing Group:	----------
Marine Pollutant:	No
EMS Number:	F-C, S-U

ICAO/IATA (Air Transportation)

Proper Shipping Name:	Anhydrous Ammonia
Hazard Class:	2.3 (8)
UN/NA:	UN1005
Packing Group:	----------
Quantity Limitations:	49 CFR 173.27 and 175.75 - Cargo Aircraft Only: Forbidden; Passenger Aircraft: Forbidden

RID/ADR (Rail Transportation)

Proper Shipping Name:	Anhydrous Ammonia
Hazard Class:	2.3 (8)
UN/NA:	UN1005
Packing Group:	----------

SECTION 15 - REGULATORY INFORMATION

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

U. S. Federal Regulations

OSHA Hazard Communication Standard: This material is classified as hazardous in accordance with OSHA 29 CRF 1910.1200.

OSHA Process Safety Management Standard: This substance is regulated under OSHA PSM Standard 29 CFR 1910.119.

EPA Risk Management Planning Standard: This substance is regulated under EPA RMP Standard (RMP) 40 CFR Part 68.

EPA Federal Insecticide, Fungicide and Rodenticide Act: This product is not a registered Pesticide under the FIFRA, 40 CFR Part 150.

Toxic Substance Control Act (TSCA) Inventory: This substance is listed on the TSCA Inventory. It is not subject to TSCA 12(b) Export Notification.

Drug Enforcement Administration (DEA) List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.4(f)(2)) and Chemical Code Number
Not listed

Drug Enforcement Administration (DEA) Lists 1 & 2, Exempt Chemical Mixtures (21 CFR 1310.12(c)) and Code Number: Not listed

Department of Homeland Security (DHS) Chemical Facility Anti-Terrorism Standards (CFATS) Chemicals
Ammonia, Anhydrous (CAS #7664-41-7) - Release: Minimum Concentration (%) = 1.0; Screening Threshold Quantities (in pounds) = 10,000

Superfund Amendments and Reauthorization Act (SARA)

SARA 313 Information: None of the chemicals in this product are subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986.

SARA Section 311/312 Hazard Categories: Sudden Release of Pressure Hazard, Acute Heath Hazard, Chronic Health Hazard

SARA 302/304 Extremely Hazardous Substance: Anhydrous Ammonia (CAS #7664-41-7) is subject to reporting requirements of these sections of Title III of SARA. TPQ = 227 kg (500 lbs)

SARA 302/304 Emergency Planning & Notification: Anhydrous Ammonia (CAS #7664-41-7) is subject to reporting requirements of these sections of Title III of SARA. EHS RQ = 45.36 kg (100 lbs)

Comprehensive Response Compensation and Liability Act (CERCLA): This product contains the following CERCLA reportable substance:
Anhydrous Ammonia (CAS #7664-41-7) - RQ = 45.36 kg (100 lbs)

Clean Air Act (CAA)
This product does not contain any chemicals that are listed as Hazardous Air Pollutants (HAPs) designated in CAA Section 112 (b).
This product does not contain any Class 1 Ozone depletors.
This product does not contain any Class 2 Ozone depletors.
Anhydrous Ammonia (CAS #7664-41-7) is on the list of Substances for Accidental Release Prevention, CAA Section 112(R).
RQ = 4,536 kg (10,000 lbs)

Clean Water Act (CWA)
Anhydrous Ammonia (CAS #7664-41-7) is listed as a Hazardous Substance under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

U.S. State Regulations

California Prop 65, Safe Drinking Water and Toxic Enforcement Act of 1986
None of the components in this product are known to the state of California to cause cancer, birth defects or other reproductive harm.

Other U.S. State Inventories
Anhydrous Ammonia (CAS #7664-41-7) is listed on the following State Hazardous Substance Inventories, Right-to-Know lists and/or Air Quality/ Air Pollutants lists: CA, DE, ID, ME, MA, MN, NC. NJ, NY, PA, RI, WA, WI.

Canada

WHMIS Hazard Classification
Extremely flammable gas
Contains gas under pressure; may explode if heated
Causes severe skin burns and eye damage
Toxic if inhaled
Causes severe damage to the respiratory tract

Canadian National Pollutant Release Inventory (NPRI): None of the substances in this product are listed on the NPRI.

European Economic Community

WGK, Germany (Water danger/protection): 2 (hazardous to waters)

Global Chemical Inventory Lists

Country	Inventory Name	Inventory Listing*
Canada	Domestic Substance List (DSL)	Yes
Canada	Non-Domestic Substance List (NDSL)	No
Europe	Inventory of New and Existing Chemicals (EINECS)	Yes
United States	Toxic Substance Control Act (TSCA)	Yes

*Yes - All components of this product are in compliance with the inventory requirements administered by the governing country.
No - One or more components of this product are not on the inventory or are exempt from listing.

Global Chemical Inventory Lists

Country	Inventory Name	Inventory Listing*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
New Zealand	New Zealand Inventory of Chemicals (NZIoC)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (KECI)	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes

*Yes - All components of this product are in compliance with the inventory requirements administered by the governing country.
No - One or more components of this product are not on the inventory or are exempt from listing.

15.2 Chemical safety assessment

A chemical safety assessment for this product has been carried out.

SECTION 16 - OTHER INFORMATION

Hazardous Material Information System (HMIS)

H = splash goggles, gloves, apron and a vapor respirator

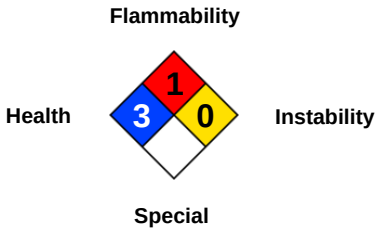
HMIS Hazard Rating Legend

0 = Minimal 1 = Slight 2 = Moderate 3 = Serious
4 = Severe * = Chronic Health Hazard

NFPA Hazard Rating Legend

0 = Insignificant 1 = Slight 2 = Moderate
3 = High 4 = Extreme

National Fire Protection Association (NFPA)



Abbreviation Key

ACGIH	American Conference of Governmental Industrial Hygienists
ADR	Accord Dangereux Routier (European regulations concerning the international transport of dangerous goods by road)
CAS	Chemical Abstract Services
CFR	Code of Federal Regulations
DOT	Department of Transportation
EC_{50}	Half Maximal Effective Concentration
EMS Guide	Emergency Response Procedures for Ships Carrying Dangerous Goods
EPA	Environmental Protection Agency
ErC_{50}	Reduction of Growth Rate
ERG	Emergency Response Guide Book
FDA	Food and Drug Administration
GHS	Globally Harmonized System of Classification and Labelling of Chemicals (GHS)
HCS	Hazard Communication Standard
IARC	International Agency for Research on Cancer
IATA	International Air Transportation
IC_{50}	Half Maximal Inhibitory Concentration
ICAO	International Civil Aviation Organization
IDLH	Immediately Dangerous to Life and Health
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
LC_{50}	50% Lethal Concentration
LD_{50}	50% Lethal Dose
LD_{Lo}	Lowest Lethal Dose
mppcf	Millions of Particles Per Cubic Foot
NA	North America
NAERG	North American Emergency Response Guide Book
NIOSH	National Institute for Occupational Safety
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
PBT	Persistent, Bioaccumulating and Toxic
PEL	Permissible Exposure Limit
PMCC	Pensky-Martens Closed Cup
ppm	Parts Per Million
RCRA	Resource Conservation and Recovery Act
RID	Dangerous Goods by Rail
RQ	Reportable Quantity
TCC/Tag	Tagliabue Closed Cup
TLV	Threshold Limit Value
TSCA	Toxic Substance Control Act
TWA	Time-Weighted Average
UN	United Nations
VOC	Volatile Organic Compounds

vPvB	Very Persistent and Very Bioaccumulating
WHMIS	Workplace Hazardous Materials Information System

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