# **SAFETY DATA SHEET**



Nonflammable Gas Mixture: Hydrogen / Hydrogen Cyanide / Nitrogen

## Section 1. Identification

GHS product identifier	: Nonflammable Gas Mixture: Hydrogen / Hydrogen Cyanide / Nitrogen
Other means of identification	: Not available.
Product use	: Synthetic/Analytical chemistry.
SDS #	: 016474
Supplier's details	: Airgas USA, LLC and its affiliates 259 North Radnor-Chester Road Suite 100 Radnor, PA 19087-5283 1-610-687-5253
Emergency telephone number (with hours of	: 1-866-734-3438

operation)

### 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	: GASES UNDER PRESSURE - Compressed gas ACUTE TOXICITY (inhalation) - Category 4 AQUATIC HAZARD (ACUTE) - Category 3 AQUATIC HAZARD (LONG-TERM) - Category 3
GHS label elements	
Hazard pictograms	
Signal word	: Warning
Hazard statements	: Contains gas under pressure; may explode if heated. May displace oxygen and cause rapid suffocation. Harmful if inhaled. Harmful to aquatic life with long lasting effects.
Precautionary statements	
General	: Read and follow all Safety Data Sheets (SDS'S) before use. Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand. Close valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open valve until connected to equipment prepared for use. Use a back flow preventative device in the piping. Use only equipment of compatible materials of construction.
Prevention	: Use only outdoors or in a well-ventilated area. Avoid release to the environment. Avoid breathing gas.
Response	: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.
Storage	: Protect from sunlight when ambient temperature exceeds 52°C/125°F. Store in a well- ventilated place.
Disposal	: Dispose of contents and container in accordance with all local, regional, national and international regulations.
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### Section 2. Hazards identification

Hazards not otherwise<br/>classified: In addition to any other important health or physical hazards, this product may displace<br/>oxygen and cause rapid suffocation.

### Section 3. Composition/information on ingredients

Substance/mixture	:	Mixture
Other means of	:	Not available.
identification		

CAS number/other identifiers	
CAS number :	Not applicable.
Product code :	016474

Ingredient name	%	CAS number
hydrogen cyanide	96.5 - 99 1 - 2.49 0.0001 - 0.9999	7727-37-9 74-90-8 1333-74-0

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

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

### Section 4. First aid measures

#### Description of necessary first aid measures

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, is fireathing 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. Inforce medical acute health effects         Ingestion       : As this product is a gas, refer to the inhalation section.         Most important symptoms/effects, acute and delayed       Potential acute health effects         Eye contact       : Contact with rapidly expanding gas may cause burns or frostbite.         Inhalation       : Harmful if inhaled.         Skin contact       : Contact with rapidly expanding gas may cause burns or frostbite.         Inhalation       : As this product is a gas, refer to the inhalation section.         Over-exposure signs/symptoms       : As this product is a gas, re	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. Get medical attention if irritation occurs.
shoes. Get medical attention if symptoms occur. Wash clothing before reuse.         Ingestion       : As this product is a gas, refer to the inhalation section.         Most important symptoms/effects, acute and delayed         Potential acute health effects         Eye contact       : Contact with rapidly expanding gas may cause burns or frostbite.         Inhalation       : Harmful if inhaled.         Skin contact       : Contact with rapidly expanding gas may cause burns or frostbite.         Frostbite       : Try to warm up the frozen tissues and seek medical attention.         Ingestion       : As this product is a gas, refer to the inhalation section.         Over-exposure signs/symptoms       : No specific data.	Inhalation	:	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
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Potential acute health effectsEye contact: Contact with rapidly expanding gas may cause burns or frostbite.Inhalation: Harmful if inhaled.Skin contact: Contact with rapidly expanding gas may cause burns or frostbite.Frostbite: Try to warm up the frozen tissues and seek medical attention.Ingestion: As this product is a gas, refer to the inhalation section.Over-exposure signs/symptomsEye contact: No specific data.	Ingestion	:	As this product is a gas, refer to the inhalation section.
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Skin contact       : Contact with rapidly expanding gas may cause burns or frostbite.         Frostbite       : Try to warm up the frozen tissues and seek medical attention.         Ingestion       : As this product is a gas, refer to the inhalation section.         Over-exposure signs/symptoms       Eye contact         Eye contact       : No specific data.	Eye contact	:	Contact with rapidly expanding gas may cause burns or frostbite.
Frostbite       : Try to warm up the frozen tissues and seek medical attention.         Ingestion       : As this product is a gas, refer to the inhalation section.         Over-exposure signs/symptoms         Eye contact       : No specific data.	Inhalation	:	Harmful if inhaled.
Ingestion       : As this product is a gas, refer to the inhalation section.         Over-exposure signs/symptoms         Eye contact       : No specific data.	Skin contact	:	Contact with rapidly expanding gas may cause burns or frostbite.
Over-exposure signs/symptoms         Eye contact       : No specific data.	Frostbite	:	Try to warm up the frozen tissues and seek medical attention.
Eye contact : No specific data.	Ingestion	:	As this product is a gas, refer to the inhalation section.
	Over-exposure signs/sympt	on	<u>15</u>
Date of issue/Date of revision       : 1/6/2016       Date of previous issue       : No previous validation       Version       : 1       2/13	Eye contact	:	No specific data.
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### Section 4. First aid measures

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	<ul> <li>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.</li> </ul>
Specific treatments	: No specific treatment.
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

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	: Contains gas under pressure. In a fire or if heated, a pressure increase will occur and the container may burst or explode. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
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. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
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, protect	tiv	e 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. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For emergency responders	:	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".

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### Section 6. Accidental release measures

Environmental precautions	: Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

#### Methods and materials for containment and cleaning up

Small spill	: Immediately contact emergency personnel. Stop leak if without risk.
Large spill	: Immediately contact emergency personnel. Stop leak if without risk. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

### Section 7. Handling and storage

Precautions for safe handling	1	
Protective measures	:	Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Avoid contact with eyes, skin and clothing. Avoid breathing gas. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.
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 a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Keep container tightly closed and sealed until ready for use. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F).

### Section 8. Exposure controls/personal protection

#### **Control parameters**

**Occupational exposure limits** 

Ingredient name			Exposure limits
hydrogen cyanide			ACGIH TLV (United States, 3/2012).
			Absorbed through skin. Notes: Measured
			as CN
			C: 5 mg/m <sup>3</sup> , (measured as CN)
			C: 4.7 ppm, (measured as CN)
			OSHA PEL (United States, 6/2010).
			Absorbed through skin.
			TWA: 11 mg/m <sup>3</sup> 8 hours.
			TWA: 10 ppm 8 hours.
			OSHA PEL 1989 (United States, 3/1989).
			Absorbed through skin.
			STEL: 5 mg/m <sup>3</sup> 15 minutes.
			STEL: 4.7 ppm 15 minutes.
			NIOSH REL (United States, 1/2013).
			Absorbed through skin.
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### Section 8. Exposure controls/personal protection

STEL: 4.7 ppm 15 minutes. STEL: 5 mg/m <sup>3</sup> 15 minutes.

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 measu	<u>es</u>
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: safety glasses with side-shields.
Skin protection	
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.

### Section 9. Physical and chemical properties

<u>Appearance</u>	
Physical state	: Gas.
Color	: Not available.
Melting/freezing point	: -210.01°C (-346°F) This is based on data for the following ingredient: nitrogen.
Critical temperature	: Lowest known value: -146.95°C (-232.5°F) (nitrogen).
Odor	: Not available.
Odor threshold	: Not available.
рН	: Not available.
Flash point	: Not available.

### Section 9. Physical and chemical properties

-	
Burning time	: Not applicable.
Burning rate	: Not applicable.
Evaporation rate	: Not available.
Flammability (solid, gas)	: Not available.
Lower and upper explosive (flammable) limits	: Not available.
Vapor pressure	: Not available.
Vapor density	: Highest known value: 0.97 (Air = 1) (nitrogen).
Gas Density (lb/ft <sup>3</sup> )	: Weighted average: 0.07
Relative density	: Not applicable.
Solubility	: Not available.
Solubility in water	: Not available.
Partition coefficient: n- octanol/water	: Not available.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
SADT	: Not available.
Viscosity	: Not applicable.

### 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	: No specific data.
Incompatibility with various substances	: Not considered to be reactive according to our database.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

### Section 11. Toxicological information

### Information on toxicological effects

**Acute toxicity** 

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hydrogen cyanide LC50 Inhalation Gas. Rat	140 ppm	1 hours

#### Irritation/Corrosion

Not available.

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### Section 11. Toxicological information

#### **Sensitization**

Not available.

#### **Mutagenicity**

Not available.

### Carcinogenicity

Not available.

#### **Reproductive toxicity**

Not available.

#### **Teratogenicity**

Not available.

#### Specific target organ toxicity (single exposure)

Not available.

#### Specific target organ toxicity (repeated exposure)

Not available.

#### Aspiration hazard

Not available.

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

#### Potential acute health effects

Eye contact	: Contact with rapidly expanding gas may cause burns or frostbite.
Inhalation	: Harmful if inhaled.
Skin contact	: Contact with rapidly expanding gas may cause burns or frostbite.
Ingestion	: As this product is a gas, refer to the inhalation section.

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

Eye contact	: No specific data.
Inhalation	: No specific data.
Skin contact	: No specific data.
Ingestion	: No specific data.

Delayed and immediate effect	<u>cts and</u>	also ch	ronic effects from sh	nort and long t	erm exposure	2	
<u>Short term exposure</u>							
Potential immediate effects	: No	t availab	le.				
Potential delayed effects	: No	t availab	le.				
Long term exposure							
Potential immediate effects	: No	t availab	le.				
Potential delayed effects	: No	t availabl	le.				
Potential chronic health eff	ects						
Not available.							
General	: No	known s	significant effects or cr	itical hazards.			
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### Section 11. Toxicological information

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Carcinogenicity	: No known significant effects or critical hazards.	
Mutagenicity	: No known significant effects or critical hazards.	
Teratogenicity	: No known significant effects or critical hazards.	
<b>Developmental effects</b>	: 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		
Inhalatio	n (gases)	2881.2 ppm		

### Section 12. Ecological information

Product/ingredient name	Result	Species	Exposure
hydrogen cyanide	Acute LC50 28 to 35 µg/l Fresh water	Fish - Oncorhynchus mykiss - Juvenile (Fledgling, Hatchling, Weanling)	96 hours

#### Persistence and degradability

Not available.

Toxioity

#### **Bioaccumulative potential**

Product/ingredient name	LogPow	BCF	Potential
Nitrogen	0.67	-	low
hydrogen cyanide	-0.25	-	low

#### Mobility in soil

Soil/water partition : Not available. coefficient (Koc)

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 should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Empty Airgas-owned pressure vessels should be returned to Airgas. 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. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.
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United States - RCRA Acute hazardous waste "P" List

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### Section 13. Disposal considerations

Ingredient	CAS #	Status	Reference number
Hydrogen cyanide; Hydrocyanic acid	74-90-8	Listed	P063

### Section 14. Transport information

	DOT	TDG	Mexico	IMDG	IATA
UN number	UN1956	UN1956	UN1956	UN1956	UN1956
UN proper shipping name	COMPRESSED GAS, N.O.S. (nitrogen, hydrogen)	COMPRESSED GAS, N.O.S. (nitrogen, hydrogen)	COMPRESSED GAS, N.O.S. (nitrogen, hydrogen)	COMPRESSED GAS, N.O.S. (nitrogen, hydrogen)	COMPRESSED GAS N.O.S. (nitrogen, hydrogen)
Transport hazard class(es)	2.2	2.2	2.2	2.2	2.2
Packing group	-	-	-	-	-
Environment	No.	No.	No.	No.	No.
Additional information	<b>Reportable quantity</b> 401.61 lbs / 182.33 kg Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.	Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.13-2.17 (Class 2). Explosive Limit and Limited Quantity Index 0.125 Passenger Carrying Road or Rail Index 75	-	-	-

"Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product."

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.

Transport in bulk according : Not available. to Annex II of MARPOL 73/78 and the IBC Code

### Section 15. Regulatory information

U.S. Federal regulations	: TSCA 8(a) CDR Exempt/Partial exemption: Not determined		
	United States inventory (TSCA 8b): All components are listed or exempted.		
	Clean Water Act (CWA) 307: Hydrogen cyanide		
	Clean Water Act (CWA) 311: Hydrogen cyanide		

Clean Air Act (CAA) 112 regulated toxic substances: Hydrogen cyanide

### Section 15. Regulatory information

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)	: Listed
Clean Air Act Section 602 Class I Substances	: Not listed
Clean Air Act Section 602 Class II Substances	: Not listed
DEA List I Chemicals (Precursor Chemicals)	: Not listed
DEA List II Chemicals (Essential Chemicals)	: Not listed

#### SARA 302/304

**Composition/information on ingredients** 

			SARA 302 TPQ		SARA 304 RQ	
Name	%	EHS	(lbs)	(gallons)	(lbs)	(gallons)
hydrogen cyanide	1 - 2.49	Yes.	100	169	10	16.9

#### SARA 304 RQ

: 401.6 lbs / 182.3 kg

#### SARA 311/312

**Classification** 

: Sudden release of pressure

Immediate (acute) health hazard

#### Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Nitrogen hydrogen cyanide hydrogen	96.5 - 99 1 - 2.49 0.0001 - 0. 9999	No. Yes. Yes.	Yes. No. Yes.	No. No. No.	No. Yes. No.	No. No. No.

#### <u>SARA 313</u>

	Product name	CAS number	%
Form R - Reporting requirements	Hydrogen cyanide	74-90-8	1 - 2.49
Supplier notification	Hydrogen cyanide	74-90-8	1 - 2.49

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: NITROGEN; HYDROGEN CYANIDE
New York	: The following components are listed: Hydrocyanic acid
New Jersey	<ul> <li>The following components are listed: NITROGEN; HYDROGEN CYANIDE; HYDROCYANIC ACID</li> </ul>
Pennsylvania	: The following components are listed: NITROGEN; HYDROCYANIC ACID
Canada inventory	: All components are listed or exempted.
International regulations	

### Section 15. Regulatory information

International lists	<ul> <li>Australia inventory (AICS): All components are listed or exempted.</li> <li>China inventory (IECSC): All components are listed or exempted.</li> <li>Japan inventory: Not determined.</li> <li>Korea inventory: All components are listed or exempted.</li> <li>Malaysia Inventory (EHS Register): Not determined.</li> <li>New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.</li> </ul>
	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.

Chemical Weapon Convention List Schedules I, II & III Chemicals

Ingredient name	List name	Status
Hydrogen cyanide	Schedule III	Listed

#### Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

#### Rotterdam Convention on Prior Inform Consent (PIC)

Not listed.

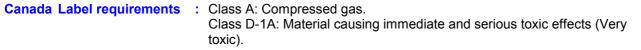
#### **UNECE Aarhus Protocol on POPs and Heavy Metals**

Not listed.

#### Canada

 WHMIS (Canada)
 Class A: Compressed gas. Class D-1A: Material causing immediate and serious toxic effects (Very toxic).
 CEPA Toxic substances: None of the components are listed. Canadian ARET: None of the components are listed. Canadian NPRI: The following components are listed: Hydrogen cyanide Alberta Designated Substances: None of the components are listed. Ontario Designated Substances: None of the components are listed. Quebec Designated Substances: None of the components are listed.

### Section 16. Other information



#### Hazardous Material Information System (U.S.A.)



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.

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

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

### Section 16. Other information



Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

<u>History</u>	
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Key to abbreviations	<ul> <li>ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) UN = United NationsACGIH – American Conference of Governmental Industrial Hygienists AIHA – American Industrial Hygiene Association CAS – Chemical Abstract Services CEPA – Canadian Environmental Protection Act CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act (EPA)</li> <li>CFR – United States Code of Federal Regulations CPR – Controlled Products Regulations DSL – Domestic Substances List GWP – Global Warming Potential IARC – International Agency for Research on Cancer ICAO – International Civil Aviation Organisation Inh – Inhalation LC – Lethal concentration LD – Lethal dosage NDSL – Non-Domestic Substances List NIOSH – National Institute for Occupational Safety and Health TDG – Canadian Transportation of Dangerous Goods Act and Regulations TLV – Threshold Limit Value TSCA – Toxic Substances Control Act WEEL – Workplace Environmental Exposure Level WHMIS – Canadian Workplace Hazardous Material Information System</li> </ul>
References	: Not available.
	at has changed from previously issued version.

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### Section 16. Other information

#### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.