MATERIAL SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS, Australian WorkSafe, Japanese Industrial Standard JIS Z 7250:2000, and European Union REACH Regulations

PORTAGAS™

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

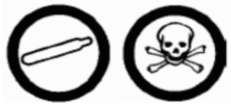
PRODUCT NAME:	**NON-FLAMMABLE GAS MIXTURE Containing Hydrogen Cyanide (< 2.8%) and Nitrogen (Balance)**
SYNONYMS:	Not Applicable
CHEMICAL FAMILY NAME:	Not Applicable
FORMULA:	Not Applicable
NOTE:	The Material Safety Data Sheet is for this gas supplied in cylinders with 33 cubic feet (935 liters) or less gas capacity (DOT – 39 cylinders).
PRODUCT USE:	For general analytical/synthetic chemical uses.
DOCUMENT NUMBER:	MSDS 1036
U.N. NUMBER:	UN 1956
U.N. DANGEROUS GOODS CLASS:	Class 2.2 (Non-Flammable Gas)
SUPPLIER/MANUFACTURER'S NAME:	**PortaGAS, Inc.**
ADDRESS:	1202 E. Sam Houston Pkwy S., Pasadena, TX 77503
EMERGENCY PHONE:	**TOLL-FREE in USA/Canada:** (800)255-3924
	International calls: 01 813 248 0585
	Australian Poison Control: 02 13 11 26
	Australian Fire Brigade: 000
BUSINESS PHONE:	(713) 928-6477 General MSDS Info
DATE OF PREPARATION:	December 2010
DATE OF LAST REVISION:	December 2010

SECTION 2 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: This non-flammable gas mixture is colorless with the odor of bitter almonds and can present significant health hazards, due to the presence of Hydrogen Cyanide (a chemical asphyxiant). Inhalation or skin contact overexposures can be harmful or fatal. This gas mixture can be irritating to the eyes. Hydrogen Cyanide can undergo polymerization. Emergency responders must wear adequate personal protective equipment during response situations. A cylinder rupture hazard exists when this gas mixture, which is under pressure, is subject to heat or flames.

US DOT SYMBOLS

CANADA (WHMIS) SYMBOLS



EUROPEAN and (GHS) HAZARD SYMBOLS

Signal Word: **Danger**

EU LABELING AND CLASSIFICATION:

Classification of the substance or mixture according to Regulation (EC) No1272/2008

Annex 1 Index #: EC# 200-821-6, 006-006-00-X

Annex 1 Index #: EC# 231-783-9, This substance is not listed in the Annex I of Regulation (EC) No 689/2008

Pressurized Gas
Flammable Category 1
Acute Toxicity Category 2
Aquatic Toxicity Category 1

Hazard Statement(s):

H280: Contains gas under pressure, may explode if heated
H331: Toxic if inhaled
H400: Very toxic to aquatic life

Precautionary Statement(s):

P260: Do not breathe dust/fume/gas/mist/vapors/spray
P281: Use personal protective equipment as required.
P314: Get medical advice/attention if you feel unwell
P403: Store in a well ventilated place.

Hazard Classification:

[T] Toxic; [Xn] Harmful;

Risk Phrases:
R12: Extremely flammable.
R26: Very Toxic by inhalation.
R50/53: Very toxic to aquatic organisms may cause long term effects in the aquatic environment.

Safety Phrases:
S9: Keep in well ventilated area.
S16: Keep away from sources of ignition.
S36/37/39: Wear suitable protective clothing, gloves, eye/face protection.
S45: In case of an accident or if you feel unwell, seek medical advice immediately.
S61: Avoid release to the environment.

HEALTH HAZARDS OR RISKS FROM EXPOSURE

ACUTE: Depending on the duration and concentration of Hydrogen Cyanide in this gas mixture, inhalation overexposures can cause cyanosis, headache, dizziness, unsteadiness of gait, a feeling of suffocation, nausea paralysis, unconsciousness, convulsions, and respiratory arrest. Inhalation overexposures can be fatal due to Hydrogen Cyanide toxicity and asphyxiation. Skin contact overexposure may be harmful or fatal. This gas mixture may be irritating to the eyes.

CHRONIC: Chronic, low level exposure to this gas mixture over long periods of time may lead to fatigue and weakness. Some evidence exists that low-level, long-term exposure to Hydrogen Cyanide (a component of this gas mixture) on the eyes will result in damage to the nerves of the eyes. Refer to Section 11 (Toxicological Information) for additional information

TARGET ORGANS: ACUTE: Respiratory system, skin, eyes, enzymes associated with oxidation CHRONIC: Respiratory system

SECTION 3 - COMPOSITION and INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENTS:	CAS #	EINECS #	ICSC #	WT %	HAZARD CLASSIFICATION; RISK PHRASES
Hydrogen Cyanide	74-90-8	200-821-6	0492	<2.8%	HAZARD CLASSIFICATION: [F] FLAMMABLE, [T] TOXIC, [N] DANGEROUS TO THE ENVIRONMENT RISK PHRASES: R12, R26, R50/53
Nitrogen	7727-37-9	231-783-9	1198	Balance	HAZARD CLASSIFICATION: NONE RISK PHRASES: NONE

None of the trace impurities in this product contribute significantly to the hazards associated with the product.

All hazard information pertinent to the product has been provided in this Material Safety Data sheet., per the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200) and State equivalent standards

NOTE: ALL WHMIS required information is included in appropriate sections based on the ANSI Z400.1-2004 format. This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR, EU Directives and the Japanese Industrial Standard *JIS Z 7250: 2000*.

SECTION 4 - FIRST-AID MEASURES

RESCUERS SHOULD NOT ATTEMPT TO RETRIEVE VICTIMS OF EXPOSURE TO THIS PRODUCT WITHOUT ADEQUATE PERSONAL PROTECTIVE EQUIPMENT:

NOTICE! Delayed onset of life-threatening symptoms is very likely to occur. **Victim(s) must be taken for immediate medical attention**. Remove victim(s) to fresh air, as quickly as possible. Only trained personnel should administer supplemental oxygen and/or cardio-pulmonary resuscitation, if necessary. A complete Cyanide Antidote Kit should be available near all areas of use. Personnel should be trained in the use of the kit to administer first-aid in advance of medical assistance. The kit should contain at least the following: Two boxes (2 dozen) of amyl nitrite pearls. Two ampoules of sterile sodium nitrite solution (10 mL of a 3% solution in each). Two ampoules of sterile sodium thiosulfate solution (50 mL of a 25% solution of each). Two 10 mL sterile syringes. Two 50 mL sterile syringes. Two sterile intravenous needles. One tourniquet. Twelve gauze pads. One bottle of 70% alcohol. One ampoule file.

SKIN EXPOSURE: If this gas contaminates the skin, immediately begin decontamination with running water. Minimum flushing is for 15 minutes. Victim must seek medical attention.

EYE EXPOSURE: If this gas contaminates the eyes, open victim's eyes while under gentle running water. Use sufficient force to open eyelids. Have victim "roll" eyes. Minimum flushing is for 15 minutes. Because of the special hazard of Cyanide compounds, special treatment procedures are administered to victims of exposure to Hydrogen Cyanide. Personnel should be trained to administer initial first-aid treatment to victims of Hydrogen Cyanide poisoning prior to response from medical professionals. If victim has difficulty breathing, is becoming confused and/or is losing consciousness, administer amyl nitrite. Crush one pearl of amyl nitrite onto a cloth and hold to the victim's nose 15 to 30 seconds of each minute. Use a new pearl every 5 minutes (0.3 mg size), or every 3 minutes (0.18 mg size). While amyl nitrite is being administered, if possible, monitor blood pressure. If blood pressure of the victim drops below 80/60, stop amyl nitrite treatment and obtain advice of professional medical personnel immediately. Administration of oxygen should only be done by trained personnel. If cardiac arrest occurs, begin CPR, again by trained personnel. While waiting for response by professional medical personnel, provide general supportive measures to victim such as keeping them warm and quiet. Take copy of label and MSDS to physician or other health professional with victim(s).

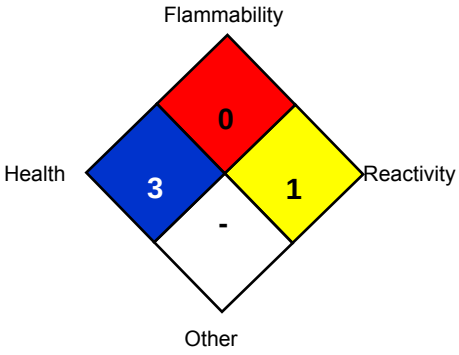
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing eye disorders, dermatitis and respiratory conditions may be aggravated by over-exposure to this gas mixture.

RECOMMENDATIONS TO PHYSICIANS: Treat symptoms; reduce or eliminate exposure.

SECTION 5 - FIRE-FIGHTING MEASURES

FLASH POINT: Not Applicable.
AUTOIGNITION TEMPERATURE: Not Applicable
FLAMMABLE LIMITS (in air by volume, %): Lower (LEL): Not Applicable Upper (UEL): Not Applicable
FIRE EXTINGUISHING MATERIALS: Non-flammable. Use extinguishing media appropriate for surrounding fire.
UNUSUAL FIRE AND EXPLOSION HAZARDS: This gas mixture contains a chemical asphyxiant; subsequently, it presents a significant health hazard to firefighters. This gas mixture does not burn; however, cylinders, when involved in a fire, may rupture or burst in the heat of the fire.
Explosion Sensitivity to Mechanical Impact: Not Sensitive.
Explosion Sensitivity to Static Discharge: Not Sensitive
SPECIAL FIRE-FIGHTING PROCEDURES: Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Fight fires in a protected location. Approach fire from an upwind direction to prevent overexposure to Nitric Oxide. If this product is involved in a fire, fire runoff water should be contained to prevent possible environmental damage. If cylinders are exposed to heat, the cylinder may rupture or burst and release the contents. It may be prudent to remove potentially heat-exposed cylinders from the area surrounding a fire if it is safe for firefighters to do so. Evacuation may be necessary. Refer to the North American Emergency Response Guidebook for additional information. If this product is involved in a fire, fire run-off water should be contained to prevent possible environmental damage.

NFPA RATING SYSTEM



HMIS RATING SYSTEM

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM

HEALTH HAZARD (BLUE)	3
FLAMMABILITY HAZARD (RED)	0
PHYSICAL HAZARD (YELLOW)	1

PROTECTIVE EQUIPMENT

EYES	RESPIRATORY	HANDS	BODY
	See Sect 8		See Sect 8

For Routine Industrial Use and Handling Applications

Hazard Scale: **0** = Minimal **1** = Slight **2** = Moderate **3** = Serious **4** = Severe * = Chronic hazard

SECTION 6 - ACCIDENTAL RELEASE MEASURES

LEAK RESPONSE: A colorimetric tube is available for Hydrogen Cyanide. Monitor the surrounding area for Hydrogen Cyanide and oxygen. The atmosphere must have less than 50% of the TLV of Hydrogen Cyanide (TLV = 4.7 ppm C) and at least 19.5% Oxygen before personnel can be allowed in the area without Self-Contained Breathing Apparatus. Attempt to close the main source valve prior to entering the area. If this does not stop the release (or it is not possible to reach the valve), allow the gas to release in place or remove it to a safe area and allow the gas to be released there. Due to the extreme toxicity of Hydrogen Cyanide, all contaminated clothing should be removed and placed in a sealed container for proper disposal. If gas is leaking incidentally from the cylinder or its valve, contact your supplier.

SECTION 7 - HANDLING and STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: Avoid all contact with this gas mixture. All employees who handle this material should be trained to handle it safely. Wash thoroughly after handling chemicals. Do not eat or drink while handling chemicals. All work practices should minimize the release of this gas mixture. Work with this gas mixture should never be done alone. Someone who is trained in the hazards and how to rescue victims must be in view of personnel using mixtures containing Hydrogen Cyanide at all times. This person must be equipped and ready to respond to an emergency.
STORAGE AND HANDLING PRACTICES: Compressed gases can present significant safety hazards. Store cylinders away from heavily trafficked areas and emergency exits. Cylinders should be stored upright (with valve protection cap in place) and firmly secured to prevent falling or being knocked over. Cylinders can be stored in the open, but in such cases, should be protected against extremes of weather and from the dampness of the ground to prevent rusting. Cylinders should be stored in dry, well-ventilated areas away from sources of heat, ignition, and direct sunlight. Keep storage area clear of materials that can burn. Do not allow area where cylinders are stored to exceed 52°C (125°F). Store containers away from heavily trafficked areas and emergency exits. Store away from process and gas production areas, elevators, building and room exits, or main aisles leading to exits. Protect cylinders against physical damage. Keep the smallest amount on-site as is necessary. Full and empty cylinders should be segregated. Use a first-in, first-out inventory system to prevent full containers from being stored for long periods of time. Use a check valve in the discharge line to prevent hazardous backflow. Never tamper with pressure relief devices in valves and cylinders.

WARNING! Do not refill DOT 39 cylinders. To do so may cause personal injury or property damage.

SPECIAL PRECAUTIONS FOR HANDLING GAS CYLINDERS: Compressed gases can present significant safety hazards. During cylinder use, use equipment designed for these specific cylinders. Ensure all lines and equipment are rated for proper service pressure.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain application equipment is locked and tagged-out safely. Always use product in areas where adequate ventilation is provided.

SECTION 8 - EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/GUIDELINES:

Chemical Name	CAS#	ACGIH TWA	OSHA TWA	SWA
Hydrogen Cyanide	74-90-8	Not Listed	10 ppm	10 ppm
Nitrogen	7727-37-9	SA	SA	SA

Nitrogen is a simple asphyxiant (SA).

Currently, International exposure limits are not established for the components of this product. Please check with competent authority in each country for the most recent limits in place.

VENTILATION AND ENGINEERING CONTROLS: All areas where gas mixtures containing Hydrogen Cyanide is used should be monitored with very sensitive gas detection instruments. Detection of concentrations below 50% of the TLV level of 4.7 ppm-C should trigger immediate response and corrective action. Detection of higher levels should initiate an alarm calling for evacuation of all personnel with the potential to be exposed. Use with adequate ventilation. A hood with forced ventilation is preferable. Because of the high hazard associated with Hydrogen Cyanide, stringent control measures such as a gas cabinet enclosure or isolation may be necessary. If appropriate, install automatic monitoring equipment to detect the level of Hydrogen Cyanide.

RESPIRATORY PROTECTION: Maintain exposure levels of Hydrogen Cyanide below the levels listed in Section 2 (Composition and Information on Ingredients) and oxygen levels above 19.5% in the workplace. Use supplied air respiratory protection if Hydrogen Cyanide levels exceed exposure limits or during emergency response to a release of this product. If respiratory protection is required, follow the requirements of the Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), or equivalent State standards.

EYE PROTECTION: Safety glasses. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or appropriate Canadian Standards.

HAND PROTECTION: Wear gloves when handling cylinders of this gas mixture. Wear PVC, Teflon®, Kel-F®, or Neoprene Rubber gloves for industrial use. Use triple gloves for spill response (see Section 6, Accidental Release Measures). If necessary, refer to U.S. OSHA 29 CFR 1910.138 or appropriate Standards of Canada.

BODY PROTECTION: Use appropriate body protection. Safety shoes are recommended when handling cylinders. If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in U.S. OSHA 29 CFR 1910.136.

SECTION 9 - PHYSICAL and CHEMICAL PROPERTIES

GAS DENSITY@32°F (0°C) and 1 atm: 0.072 lbs/cu ft (1.153 kg/m^3)

BOILING POINT: -195.8°C (-320.4°F)

FREEZING/MELTING POINT (@ 10 psig): -210°C (-345.8°F)

SPECIFIC GRAVITY (air = 1) @ 70°F (21.1°C): 0.90

pH: Not applicable.

SOLUBILITY IN WATER vol/vol at 32°F (0°C) and 1 atm: 0.023

MOLECULAR WEIGHT: 28.01

EVAPORATION RATE (nBuAc = 1): Not applicable.

EXPANSION RATIO: Not applicable.

ODOR THRESHOLD: Not applicable. Odorless

SPECIFIC VOLUME (ft^3/lb): 13.8

VAPOR PRESSURE @ 70°F (21.1°C) (psig): Not applicable.

COEFFICIENT WATER/OIL DISTRIBUTION: Not applicable.

ODOR THRESHOLD: 0.2-5.0 ppm (threshold odor); 2.0-5.0 ppm (recognition) [for Hydrogen Cyanide].

APPEARANCE, ODOR AND COLOR: This gas mixture is colorless with the odor of bitter almonds

HOW TO DETECT THIS SUBSTANCE (warning properties): The odor is not a reliable warning property as the gas causes rapid olfactory fatigue. Colorimetric tubes are available for Hydrogen Cyanide. In terms of leak detection, fittings and joints can be painted with a soap solution to detect leaks, which will be indicated by a bubble formation.

MATERIAL SAFETY DATA SHEET

SECTION 10 - STABILITY and REACTIVITY

STABILITY: Hydrogen Cyanide, a component of this gas mixture, is very unstable as it is sensitive to heat, light and moisture.

DECOMPOSITION PRODUCTS: When heated to combustion, Hydrogen Cyanide emits toxic fumes of carbon monoxide, carbon dioxide and nitrogen oxides. Nitrogen, the main component of this gas mixture does not decompose, per se, but may react with other compounds in the heat of a fire.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Due to the presence of Hydrogen Cyanide, this gas mixture will be incompatible with bases and strong acids. Hydrogen Cyanide will attack some forms of plastics and rubber.

HAZARDOUS POLYMERIZATION: Hydrogen Cyanide, a component of this product, can undergo polymerization

CONDITIONS TO AVOID: Contact with incompatible materials and exposure to heat, light and moisture. Avoid exposing cylinders to extremely high temperatures, which could cause the cylinders to rupture.

SECTION 11 - TOXICOLOGICAL INFORMATION

TOXICITY DATA: The following toxicology data are available for the components of this product:

HYDROGEN CYANIDE: Oral-Human LDLo: 570 µg/kg Inhalation-Man TCLo: 500 mg/m3/3 minutes C Human Toxicology. Inhalation-Human LCLo : 200 ppm/5 minutes Inhalation-Human LCLo: 120 mg/m3/1 hour Inhalation-Human LCLo: 200 mg/m3/10 Inhalation-Man LCLo: 400 mg/m3/2 minutes Subcutaneous-Human LDLo: 1 mg/kg Intravenous-Human LD_{50}: 1 mg/kg Intravenous-Man TDLo : 55 µg/kg: Pulmonary system effects Unreported-Man LDLo: 1471 µg/kg Intramuscular-Rabbit, adult LD50: 486 mg/kg Ocular-Rabbit, adult LD50: 1040 µg/kg Inhalation-Rat LC_{50}: 160 ppm/30 Intravenous-Rat LD_{50}: 810 µg/kg Oral-Mouse LD_{50}: 3700 µg/kg Inhalation-Mouse LC_{50}: 323 ppm/5 minutes Intraperitoneal-Mouse LD_{50}: 2990 µg/kg Subcutaneous-Mouse LDLo: 3 mg/kg Intravenous-Mouse LD_{50}: 990 µg/kg Intramuscular-Mouse LD50: 2700 µg/kg Oral-Dog, adult LDLo: 4 mg/kg Inhalation-Dog, adult LC_{50}: 616 mg/m3/1 minute Subcutaneous-Dog, adult LDLo: 1700 µg/kg Intravenous-Dog, adult LD_{50}: 1340 µg/kg Inhalation-Monkey LC_{50}: 1616 mg/m3/1 minutes

NITROGEN: There are no specific toxicology data for Nitrogen gas. Nitrogen is a simple asphyxiant (SA), which acts to displace oxygen in the environment.

SUSPECTED CANCER AGENT: The components of this gas mixture are not found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA, and IARC, and therefore are neither considered to be or suspected to be a cancer-causing agent by these agencies.

IRRITANCY OF PRODUCT: This gas mixture may be irritating to contaminated eyes.

SENSITIZATION OF PRODUCT: This gas mixture contains no known sensitizer.

REPRODUCTIVE TOXICITY INFORMATION: Listed below is information concerning the effects of this gas mixture and its components on the human reproductive system. Mutagenicity: This gas mixture is not expected to cause mutagenic effects in humans. Embryotoxicity: This gas mixture is not expected to cause embryotoxic effects in humans. Teratogenicity: This gas mixture is not expected to cause teratogenic effects in humans. Reproductive Toxicity: This gas mixture is not expected to cause adverse reproductive effects in humans.

BIOLOGICAL EXPOSURE INDICES (BEIs): Currently there are no ACGIH Biological Exposure Indices (BEIs) applicable for this gas mixture's components.

SECTION 12 - ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

ENVIRONMENTAL STABILITY: This gas mixture will be dissipated rapidly in well-ventilated areas.

EFFECT OF MATERIAL ON PLANTS or ANIMALS: Due to the presence of Hydrogen Cyanide, animals exposed to this gas may be killed. Hydrogen Cyanide is not known to bioaccumulate in any of the mammalian species that have been studied. This gas mixture may be harmful or fatal to contaminated plant life.

EFFECT OF CHEMICAL ON AQUATIC LIFE: Hydrogen Cyanide, a component of this gas mixture, is very soluble in water, and even low concentrations in water are detrimental to aquatic life. If a release this product occurs near a river or other body of water, the release has the potential to kill fish and other aquatic life.

SECTION 13 - DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, State, and local regulations, those of Canada, Australia, EU Member States and Japan. Cylinders with undesired residual product may be safely vented outdoors with the proper regulator. For further information, refer to Section 16 (Other Information).

SECTION 14 - TRANSPORTATION INFORMATION

US DOT, IATA, IMO, ADR:

THIS GAS IS HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.

PROPER SHIPPING NAME: Compressed gases, n.o.s. (Nitrogen, Hydrogen Cyanide)

HAZARD CLASS NUMBER and DESCRIPTION: 2.2 (Non-Flammable Gas)

UN IDENTIFICATION NUMBER: UN 1956

PACKING GROUP: Not applicable.
DOT LABEL(S) REQUIRED: Non-Flammable Gas
NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2000): 126

MARINE POLLUTANT: Hydrogen Cyanide is designated by the Department of Transportation to be a Marine Pollutant (49 CFR 172.101, Appendix B). However, the concentration of this component is below 10% and this material is not required to be marked per the requirements of 49 CFR 192.322.

SPECIAL SHIPPING INFORMATION: Cylinders should be transported in a secure position, in a well-ventilated vehicle. The transportation of compressed gas cylinders in automobiles or in closed-body vehicles can present serious safety hazards. If transporting these cylinders in vehicles, ensure these cylinders are not exposed to extremely high temperatures (as may occur in an enclosed vehicle on a hot day). Additionally, the vehicle should be well-ventilated during transportation.

NOTE: DOT 39 Cylinders ship in a strong outer carton (over pack). Pertinent shipping information goes on the outside of the over pack. DOT 39 Cylinders do not have transportation information on the cylinder itself.

U.S. DEPARTMENT OF TRANSPORTATION (DOT) SHIPPING REGULATIONS:
This product is classified as dangerous goods, per U.S. DOT regulations, under 49 CFR 172.101.

TRANSPORT CANADA, TRANSPORTATION OF DANGEROUS GOODS REGULATIONS:
This product is classified as Dangerous Goods, per regulations of Transport Canada.

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA):
This product is classified as Dangerous Goods, by rules of IATA:

INTERNATIONAL MARITIME ORGANIZATION (IMO) DESIGNATION:
This product is classified as Dangerous Goods by the International Maritime Organization.

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR):
This product is classified by the United Nations Economic Commission for Europe to be dangerous goods.

SECTION 15 - REGULATORY INFORMATION

UNITED STATES REGULATIONS

SARA REPORTING REQUIREMENTS: The components of this product are subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act, as follows: Hydrogen Cyanide SARA 302, SARA 304 & SARA 313

TSCA: All components in this product are listed on the US Toxic Substances Control Act (TSCA) inventory of chemicals.

SARA 311/312:

Acute Health: Yes Chronic Health: Yes Fire: No Reactivity: Yes

U.S. SARA THRESHOLD PLANNING QUANTITY: Hydrogen Cyanide = 100 pounds.

U.S. CERCLA REPORTABLE QUANTITY (RQ): Hydrogen Cyanide = 10 pounds (Extremely Hazardous Substance).

OTHER U.S. FEDERAL REGULATIONS: Hydrogen Cyanide (as Cyanide) is subject to the reporting requirements of CFR 29 1910.1000. Hydrogen Cyanide is listed on Table Z.1. Hydrogen Cyanide is subject to the reporting requirements of Section 112(r) of the Clean Air Act. The Threshold Quantity for this gas is 2,500 pounds. Depending on specific operations involving the use of Hydrogen Cyanide, the regulations of the Process Safety Management of Highly Hazardous Chemicals may be applicable (29 CFR 1910.119). Hydrogen Cyanide is listed in Appendix A of this regulation. The threshold quantity for Hydrogen Cyanide under this regulation is 1,000 pounds. This gas mixture does not contain any Class I or Class II ozone depleting chemicals (40 CFR part 82). Hydrogen Cyanide is listed under Table 1 as a Regulated Toxic Substance, per 40 CFR, Part 68, of the Risk Management for Chemical Release Prevention. The threshold quantity for Hydrogen Cyanide under this regulation is 2,500 pounds.

U.S. STATE REGULATORY INFORMATION: The components of this gas mixture are covered under the following specific State regulations:

Alaska - Designated Toxic and Hazardous Substances:	Hydrogen Cyanide.
California - Permissible Exposure Limits for Chemical Contaminants:	Hydrogen Cyanide, Nitrogen.
Florida - Substance List:	Hydrogen Cyanide.
Illinois - Toxic Substance List:	Hydrogen Cyanide.
Kansas - Section 302/313 List:	Hydrogen Cyanide.
Massachusetts - Substance List:	Hydrogen Cyanide.
Michigan - Critical Materials Register:	No.
Minnesota - List of Hazardous Substances:	Hydrogen Cyanide.
Missouri - Employer Information/Toxic Substance List:	Hydrogen Cyanide.
New Jersey - Right to Know Hazardous Substance List:	Hydrogen Cyanide, Nitrogen.
North Dakota - List of Hazardous Chemicals, Reportable Quantities:	Hydrogen Cyanide.
Pennsylvania - Hazardous Substance List:	Hydrogen Cyanide, Nitrogen.
Rhode Island - Hazardous Substance List:	Hydrogen Cyanide, Nitrogen.
Texas - Hazardous Substance List:	Hydrogen Cyanide.
West Virginia - Hazardous Substance List:	Hydrogen Cyanide.
Wisconsin - Toxic and Hazardous Substances:	Hydrogen Cyanide.

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): The components of this gas mixture are not on the California Proposition 65 lists.

CANADIAN REGULATIONS:

CANADIAN DSL/NDSL INVENTORY STATUS: All of the components of this product are on the DSL Inventory

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS: No component of this product is on the CEPA First Priorities Substance Lists.

CANADIAN WHMIS CLASSIFICATION and SYMBOLS: This gas mixture is categorized as a Controlled Product, Hazard Classes A and D1A, as per the Controlled Product Regulations.

EUROPEAN ECONOMIC COMMUNITY INFORMATION:

EU LABELING AND CLASSIFICATION: Classification of the substance or mixture according to Regulation (EC) No1272/2008. See section 2 for details.

AUSTRALIAN INFORMATION FOR PRODUCT:

AUSTRALIAN INVENTORY OF CHEMICAL SUBSTANCES (AICS) STATUS: All components of this product are listed on the AICS.

STANDARD FOR THE UNIFORM SCHEDULING OF DRUGS AND POISONS: Not applicable.

JAPANESE INFORMATION FOR PRODUCT:

JAPANESE MINISTER OF INTERNATIONAL TRADE AND INDUSTRY (MITI) STATUS: The components of this product are not listed as Class I Specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese MITI.

INTERNATIONAL CHEMICAL INVENTORIES:

Listing of the components on individual country Chemical Inventories is as follows:

Asia-Pac:	Listed
Australian Inventory of Chemical Substances (AICS):	Listed
Korean Existing Chemicals List (ECL):	Listed
Japanese Existing National Inventory of Chemical Substances (ENCS):	Listed
Philippines Inventory if Chemicals and Chemical Substances (PICCS):	Listed
Swiss Giftliste List of Toxic Substances:	Listed
U.S. TSCA:	Listed

SECTION 16 - OTHER INFORMATION

INFORMATION ABOUT DOT-39 NRC (Non-Refillable Cylinder) PRODUCTS: DOT 39 cylinders ship as hazardous materials when full. Once the cylinders are relieved of pressure (empty) they are not considered hazardous material or waste. Residual gas in this type of cylinder is not an issue because toxic gas mixtures are prohibited. Calibration gas mixture typically packaged in these cylinders are Nonflammable n.o.s., UN 1956. A small percentage of calibration gases packaged in DOT 39 cylinders are flammable or oxidizing gas mixtures. For disposal of used DOT-39 cylinders, it is acceptable to place them in a landfill if local laws permit. Their disposal is no different than that employed with other DOT containers such as spray paint cans, household aerosols, or disposable cylinders of propane (for camping, torch etc.). When feasible, we recommended recycling for scrap metal content.

MIXTURES: When two or more gases or liquefied gases are mixed, their hazardous properties may combine to create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an Industrial Hygienist or other trained person when you make your safety evaluation of the end product. Remember, gases and liquids have properties which can cause serious injury or death.

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