

**HONG KONG SPECIALTY GASES CO., LTD.**

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MATERIAL  
SAFETY  
DATA SHEET

<b>PRODUCT NAME</b> Krypton	<b>CAS#</b> 7439-90-9
<b>TRADE NAME AND SYNONYMS</b> Krypton	<b>DOT I.D. NO.</b> UN 1056
<b>CHEMICAL NAME AND SYNONYMS</b> Krypton	<b>DOT HAZARD CLASS</b> Division 2.2
<b>ISSUE DATE AND REVISIONS</b> Revised March 2000	<b>FORMULA</b> Kr
	<b>CHEMICAL FAMILY</b> Inert Gas

**HEALTH HAZARD DATA**

<b>TIME WEIGHTED AVERAGE EXPOSURE LIMIT</b> <p>Krypton is defined as a simple asphyxiant. Oxygen levels should be maintained at greater than 18 molar percent at normal atmospheric pressure, which is equivalent to a partial pressure of 135 mm Hg (ACGIH 1990-1991). OSHA 1989 does not list a TWA for Krypton.</p>
<b>SYMPTOMS OF EXPOSURE</b> <p>Effects of exposure to high concentrations so as to displace the oxygen in the air necessary for life are headache, dizziness, labored breathing and eventual unconsciousness.</p>
<b>TOXICOLOGICAL PROPERTIES</b> <p>Krypton is nontoxic but the liberation of a large amount in a confined area could displace the amount of oxygen in air necessary to support life.</p> <p>Krypton is not listed in the IARC, NTP or by OSHA as a carcinogen or potential carcinogen.</p> <p>Persons in ill health where such illness would be aggravated by exposure to Krypton should not be allowed to work with or handle this product.</p>
<b>RECOMMENDED FIRSTAID TREATMENT</b> <p><b>PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO KRYPTON. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS.</b></p> <p><u>Inhalation:</u> Conscious persons should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. Unconscious persons should be moved to an uncontaminated area, given assisted respiration and supplemental oxygen. Further treatment should be symptomatic and supportive.</p>

## HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES

None

## PHYSICAL DATA

<b>BOILING POINT</b> -153.35°C	<b>CRITICAL TEMPERATURE</b> -63.75 °C
<b>HEAT CAPACITY (25°C, 1 bar abs)</b> 247J/kgK	<b>CRITICAL PRESSURE</b> 55.02 bar abs
<b>SOLUBILITY IN WATER</b> Negligible	<b>SPECIFIC VOLUME</b> 4.6ft <sup>3</sup> /lb. at 70°F
<b>EVAPORATION RATE</b> N/A	<b>SPECIFIC GRAVITY (AIR=1)</b> 2.899 at 70°F
<b>APPEARANCE AND ODOR</b> Colorless, odorless gas	

## FIRE AND EXPLOSION HAZARD DATA

<b>FLASH POINT (Method used)</b> N/A	<b>AUTO IGNITION TEMPERATURE</b> N/A	<b>FLAMMABLE LIMITS % BY VOLUME</b> LEL N/A UEL N/A	
<b>EXTINGUISHING MEDIA</b> Nonflammable, inert gas		<b>ELECTRICAL CLASSIFICATION</b> Nonhazardous	
<b>SPECIAL FIRE FIGHTING PROCEDURES</b> N/A			
<b>UNUSUAL FIRE AND EXPLOSION HAZARDS</b> If cylinders are involved in a fire, safely relocate or keep cool with water spray.			

## REACTIVITY DATA

<b>STABILITY</b>		<b>CONDITIONS TO AVOID</b>
Unstable		N/A
Stable	X	
<b>INCOMPATIBILITY (Materials to avoid)</b> None		
<b>HAZARDOUS DECOMPOSITION PRODUCTS</b> None		
<b>HAZARDOUS POLYMERIZATION</b>		<b>CONDITIONS TO AVOID</b>
May Occur		N/A
Will Not Occur	X	

## SPECIAL PROTECTION INFORMATION

<b>RESPIRTORY PROTECTION (Specify type)</b> Positive pressure air line with mask or self-contained breathing apparatus should be available for emergency use.	
<b>VENTILATION</b> See Local Exhaust	<b>SPECIAL</b> N/A
<b>MECHANICAL (Gen.)</b> N/A	<b>OTHER</b> N/A
<b>LOCAL EXHAUST</b> To prevent accumulation of high concentrations so as to reduce the oxygen level in the air to less than 18 molar percent.	
<b>PROTECTIVE GLOVES</b> Any material	
<b>EYE PROTECTION</b> Safety goggles or glasses	
<b>OTHER PROTECTIVE EQUIPMENT</b> Safety shoes	

**SPILL OR LEAK PROCEDURES**

<p><b>STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED</b></p> <p>Evacuate all personnel from affected area. Use appropriate protective equipment. If leak is in container or container valve, contact HSG for special advice.</p>
<p><b>WASTE DISPOSAL METHOD</b></p> <p>Do not attempt to dispose of waste or unused quantities. Return in the shipping container properly labeled, with any valve outlet plugs or caps secured and valve protection cap in place to your supplier. For emergency disposal assistance, contact HSG for special advice.</p>

**SPECIAL PRECAUTIONS\***

<p><b>SPECIAL LABELING INFORMATION</b></p> <p>DOT Shipping Name: Krypton, Compressed                  DOT Shipping Label: Nonflammable Gas</p>	<p>DOT Hazard Class: Division 2.2                  I.D. No.: UN 1056</p>
<p><b>SPECIAL HANDLING RECOMMENDATIONS</b></p> <p>Use only in well-ventilated areas. Valve protection caps must remain in place unless container is secured with valve outlet piped to use point. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure reducing regulator when connecting cylinder to lower pressure (&lt;3,000 psig) piping or systems. Do not heat cylinder by any means to increase the discharge rate of product from the cylinder. Use a check valve or trap in the discharge line to prevent hazardous back flow into the cylinder.</p>	
<p><b>SPECIAL STORAGE RECOMMENDATIONS</b></p> <p>Protect cylinders from physical damage. Store in cool, dry, well-ventilated area away from heavily trafficked areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 125°F (52°C). Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Full and empty cylinders should be segregated. Use a "first in - first out" inventory system to prevent full cylinders being stored for excessive periods of time.</p>	
<p><b>SPECIAL PACKING RECOMMENDATIONS</b></p> <p>Krypton is noncorrosive and may be used with any common structural material.</p>	
<p><b>OTHER RECOMMENDATIONS OR PRECAUTIONS</b></p> <p>Compressed gas cylinders should not be refilled except by qualified producers of compressed gases. Shipment of a compressed gas cylinder which has not been filled by the owner or with his (written) consent is a violation of Law. Always secure cylinders in an upright position before transporting them. NEVER transport cylinders in trunks of vehicles, enclosed vans, truck cabs or in passenger compartments. Transport cylinders secured in open flatbed or in open pick-up type vehicles.</p>	

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