

Concorde Specialty Gases Inc.
Material Safety Data Sheet Krypton



1. IDENTIFICATION OF SUBSTANCE/ COMPANY INFORMATION

Product name: Krypton Concorde Specialty Gases Inc.
Chemical names: Krypton Eaton Rd Eatontown, NJ 07724
Chemical formula Kr Tel: 732 544-9899 Fax: 732 544-9894

Product Use: For general analytical / synthetical chemical uses
In Case of Emergency: Chemtrec 1-800-424-9300

2. COMPOSITION AND INFORMATION ON INGREDIENTS

Chemical name: Krypton
CAS # 7439-90-9 100
EEC # (from EINECS) 231-172-7
Mole % 100
Exposure Limits in Air

ACGIH	OSHA	IDLH	OTHER
TLV/STEL	PEL/STEL		
PPM/PPM	PPM/PPM	PPM	

There are no specific exposure limits for Krypton.
Krypton is a simple Asphyxiant (SA)
Oxygen levels should be maintained above 19.5%.

3. HAZARDS IDENTIFICATION

Physical state: Gas. (COLORLESS GAS; GAS CONDENSES TO A COLORLESS LIQUID)
Emergency overview: Warning!
CONTENTS UNDER PRESSURE.
Do not puncture or incinerate container.
Contact with rapidly expanding gases can cause frostbite.
Routes of entry: Inhalation
Potential acute health effects
Eyes: No known significant effects or critical hazards.
Skin: No known significant effects or critical hazards.
Inhalation: Acts as a simple asphyxiant.
Ingestion: Ingestion is not a normal route of exposure for gases.
Potential chronic health effects: CARCINOGENIC EFFECTS: Not available.
MUTAGENIC EFFECTS: Not available.
TERATOGENIC EFFECTS: Not available.

Medical conditions: Acute or chronic respiratory conditions, as well as disorders involving the "Target aggravated by overexposure Organs", as listed in Section 3 (Hazard Information), may be aggravated by overexposure to the components of this gas mixture.
See toxicological Information (section 11) Inhalation In high concentrations may cause asphyxiation. Symptoms may include loss of mobility or consciousness. Victim may not be aware of asphyxiation. In high concentrations may cause narcotic effects. Symptoms may include dizziness, drowsiness, nausea, vomiting, loss of co-ordination, and depression of all the senses. The skin of a victim may have a blue color. Under some circumstances, death may occur. The effects associated with various levels of oxygen are as follows:

Concentration of Oxygen

Symptoms of Exposure

12-16%	Breathing & pulse rate increased, muscle coordination disturbed
10-14%	Emotional upset, abnormal fatigue, disturbed respiration
6-10%	Nausea and vomiting, loss of consciousness
Below 6%	Convulsive movements, possible respiratory collapse, and death.

Other Potential Health effects: Contact with cryogenic liquid or rapidly expanding gases (which are released under high pressure may cause frostbite. Symptoms of frostbite include change in skin color to white or grayish-yellow. The pain after contact with liquid can quickly subside.

Chronic: There is currently no known adverse health effects linked with chronic exposure to Krypton.

Target Organs: Respiratory System.

4. FIRST AID MEASURES

Remove victim to uncontaminated area (fresh air) wearing self-contained breathing apparatus as quickly as possible. In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Keep victim warm and rested. Victim must be taken for medical attention.

No action shall be taken involving any personal risk or without suitable training. If fumes are still suspected to be present, the rescuer should wear an appropriate mask or a self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Eye contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.

Get medical attention if irritation occurs.

Skin contact: In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention. Frostbite: Try to warm up the frozen tissues and seek medical attention.

Ingestion: Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms appear.

ACCIDENTAL RELEASE MEASURES: Personal precautions Evacuate area. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Ensure adequate air ventilation. Environmental precautions: Try to stop release. Prevent from entering sewers, basements and work pits, or any place where its accumulation can be dangerous. Clean up methods Ventilate area.

5. FIRE-FIGHTING MEASURES

Flammability of the product: Non-flammable.

Fire fighting media and instructions: Use an extinguishing agent suitable for surrounding fires.

If involved in fire, shut off flow immediately if it can be done without risk. Apply water from a safe distance to cool container and protect surrounding area. No specific hazard.

Special protective equipment for Fire fighters: Fire fighters should wear appropriate protective equipment and self-contained breathing equipment for fire fighters apparatus (SCBA) with a full-face piece operated in positive pressure mode.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment (Section 8). Shut off gas supply if this can be done safely.

Isolate area until gas has dispersed.

Environmental precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

7. HANDLING AND STORAGE

Handling: Do not puncture or incinerate container. High-pressure gas. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Use only properly specified equipment, which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt.

Refer to supplier's container handling instructions.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits.

Personal protection Eyes: 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 or dusts.

Skin: 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.

Respiratory: 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. The applicable standards are (US) 29 CFR 1910.134 and (Canada) Z94.4-93.

Hands: Chemical-resistant, impervious gloves or gauntlets complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Personal protection in case of a large spill: A self-contained breathing apparatus should be used to avoid inhalation of the product. Ensure adequate ventilation. Consult local authorities for acceptable exposure limits.

9. PHYSICAL AND CHEMICAL PROPERTIES

Molecular Weight 83.8 g/mole	Gas Density (lb/ft ³) 0.2172	Boiling Point -153.4°C -244.0°F	Specific Volume (ft ³ /lb): 4.6	Vapor Pressure N/A Relative Density, liquid N/A	Appearance/Color Colorless gas Odor None
Critical Temp. 16.6° C 61.9° F	Specific Gravity (Air=1): 2.890	Freezing Point -157.0°C -251.3°F	Solubility in H2O v/v@ 20°C (68°F): 0.0594	Evaporation Rate (nBuAc=1): N/A	Expansion Ratio: 693.4 (cryogenic liquid)

There are not unusual warning properties associated with a release of Krypton. In terms of leak detection, fittings and joints can be painted with soap solution to detect leaks, which will be indicated by a bubble formation.

10. STABILITY AND REACTIVITY

Stability and reactivity: Stable under normal conditions.

11. TOXICOLOGICAL INFORMATION

General: No known toxicological effects from this product.

Carcinogenic effects: No known significant effects or critical hazards.

Mutagenic effects: No known significant effects or critical hazards.

Reproduction toxicity: No known significant effects or critical hazards.

12. ECOLOGICAL INFORMATION

General No known ecological damage caused by this product.

13. DISPOSAL CONSIDERATIONS

General To atmosphere in a well-ventilated place. Do not discharge into any place where its accumulation could be dangerous. Contact supplier if guidance is required.

UN number:	UN1056	UN1970
Proper shipping Name:	KRYPTON, COMPRESSED	KRYPTON, LIQUID
Packing group:	N/A	N/A
Label:	NON-FLAMMABLE GAS	NON-FLAMMABLE GAS
Class:	2.2 (Non Flammable Gas)	2.2 (Non Flammable Gas)

14. TRANSPORT INFORMATION

This material is hazardous as defined by 49 CFR 172.101 by the US Department of Transportation.
Regulatory Information: DOT Classification Limited

15. REGULATORY INFORMATION

U.S. Federal regulations: TSCA 8(b) inventory: krypton
SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: krypton
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: krypton:
Sudden Release of Pressure
Clean Water Act (CWA) 307: No products were found.
Clean Water Act (CWA) 311: No products were found.
Clean air act (CAA) 112 accidental release prevention: No products were found.
Clean air act (CAA) 112 regulated flammable substances: No products were found.
Clean air act (CAA) 112 regulated toxic substances: No products were found.

16. OTHER INFORMATION

Ensure all national/local regulations are observed. Asphyxiant in high concentrations. Keep container in well-ventilated place. Do not breathe the gas. The hazard of asphyxiation is often overlooked and must be stressed during operator training. Users of breathing apparatus must be trained. Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out. Details given in this document are believed to be correct at the time of going to press. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.

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