

INTERNATIONAL\_GASES\_AND\_CHEMICALS\_LTD

## MATERIAL SAFETY DATA SHEETS

DATE: 10/14/97

SUPPLIER ADDRESS: SPEEDWELL RD  
PARKHOUSE EAST  
NEWCASTLE-U-LYME

EMERGENCY PHONE: (178) 256-5556  
NUMBER

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1. CHEMICAL PRODUCT

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PRODUCT NAME: KRYPTON

SYNONYMS: None

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2. COMPOSITION, INFORMATION ON INGREDIENTS

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Ingredient Name	Formula	CAS#	Concentration	Exposure Limits (PPM)			
				ACGIH TLV	OSHA PEL	MAC	Other STEL
KRYPTON	Kr	7439-90-9	99+%	S/A	S/A	NE	S/A

Note: S/A = SIMPLE ASPHYXIANT  
NE = NONE ESTABLISHED

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3. HAZARD IDENTIFICATION

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\*\*\* EMERGENCY OVERVIEW \*\*\*  
High pressure gas.  
Can cause rapid suffocation.

POTENTIAL HEALTH EFFECTS

ROUTES OF ENTRY: Inhalation

ACUTE EFFECTS: Material acts as a simple asphyxiant by displacing air necessary for life. Symptoms include rapid respiration, muscular incoordination, fatigue, dizziness, nausea, vomiting, unconsciousness, and death.

CHRONIC EFFECTS: None known

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: None known

OTHER EFFECTS OF OVEREXPOSURE: None

CARCINOGENICITY (US Only):

NTP - No  
IARC MONOGRAPHS - No  
OSHA REGULATED - No

Continued ...

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#### 4. FIRST AID MEASURES

INHALATION: Immediately remove victim to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen.

EYE CONTACT: None

SKIN CONTACT: None

INGESTION: None

IN EVENT OF EXPOSURE, CONSULT A PHYSICIAN

NOTE TO PHYSICIAN: None

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#### 5. FIRE FIGHTING MEASURES

FLASH POINT: Nonflammable

AUTOIGNITION TEMPERATURE: N/Ap

FLAMMABLE LIMITS: Nonflammable

LOWER:

UPPER:

EXTINGUISHING MEDIA: Use what is appropriate for surrounding fire.

SPECIAL FIRE FIGHTING INSTRUCTION AND EQUIPMENT: Wear self-contained breathing apparatus and full protective clothing. Keep fire exposed cylinders cool with water spray. Move container from fire area if possible.

HAZARDOUS COMBUSTION PRODUCTS: None

UNUSUAL FIRE AND EXPLOSION HAZARDS: Cylinder rupture may occur under fire conditions.

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#### 6. ACCIDENTAL RELEASE MEASURES

CLEAN UP PROCEDURES: Evacuate and ventilate area. Remove leaking cylinder to exhaust hood or safe outdoor area. Shut off source if possible and remove source of heat.

SPECIALIZED EQUIPMENT: None

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#### 7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING: Secure cylinder when using to protect from falling. Use suitable hand truck to move cylinders. Use only in a well-ventilated area.

PRECAUTIONS TO BE TAKEN IN STORAGE: Store in well ventilated areas. Keep valve protection cap on cylinders when not in use.

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#### 8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

ENGINEERING CONTROLS: Provide adequate general and local exhaust ventilation to avoid asphyxiation.

#### PERSONAL PROTECTION

EYE/FACE PROTECTION: Safety glasses

SKIN PROTECTION: None

RESPIRATORY PROTECTION: In case of leakage, use self-contained breathing apparatus.

OTHER PROTECTIVE EQUIPMENT: Safety shoes when handling cylinders.

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#### 9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Colorless

ODOR: Odorless

PHYSICAL STATE: Gas

VAPOR PRESSURE: N/Ap

VAPOR DENSITY (AIR=1): 2.89

BOILING POINT (C): -153.3

SOLUBILITY IN WATER: Negligible

SPECIFIC GRAVITY (H<sub>2</sub>O=1): Gas

EVAPORATION RATE: Gas

ODOR THRESHOLD: None

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#### 10. STABILITY AND REACTIVITY

STABILITY: Stable under normal storage conditions.

CONDITIONS TO AVOID: Storage in poorly ventilated areas. Storage near a heat source.

MATERIALS TO AVOID: None

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HAZARDOUS POLYMERIZATION: Will not occur.

HAZARDOUS DECOMPOSITION: None

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## 11. TOXICOLOGICAL INFORMATION

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LETHAL CONCENTRATION (LC50): NONE ESTABLISHED  
LETHAL DOSE 50 (LD50): N/Av  
TERATOGENICITY: N/Av  
REPRODUCTIVE EFFECTS: N/Av  
MUTAGENICITY: N/Av

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## 12. ECOLOGICAL INFORMATION

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No adverse ecological effects are expected.

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## 13. DISPOSAL CONSIDERATIONS

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WASTE DISPOSAL METHOD: Dispose of non-refillable cylinders in accordance with federal, state and local regulations. Allow gas to vent slowly to atmosphere in an unconfined area or exhaust hood. If the cylinders are the refillable type, return cylinders to supplier with any valve outlet plugs or caps secured and valve protection caps in place.

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## 14. TRANSPORT INFORMATION

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CONCENTRATION: 99+%  
DOT DESCRIPTION (US ONLY):  
    PROPER SHIPPING NAME: Krypton  
    HAZARD CLASS: 2.2 (nonflammable)  
    IDENTIFICATION NUMBER: UN1056  
    REPORTABLE QUANTITIES: None  
    LABELING: NONFLAMMABLE GAS

ADR/RID (EU Only): Class 2, 1A

SPECIAL PRECAUTIONS: Cylinders should be transported in a secure upright position in a well ventilated truck.

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## 15. REGULATORY INFORMATION

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OSHA: Process Safety Management:  
Material is not listed in appendix A of 29 CFR 1910.119 as highly hazardous chemical.

TSCA: Material is listed in TSCA inventory.

SARA: The threshold planning quantity for material is 10,000 lbs.

EU NUMBER: 231-098-5

NUMBER IN ANNEX 1 OF DIR 67/548: Not listed in annex 1.

EU CLASSIFICATION: N/Av

R: As

S: 9,23

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## 16. OTHER INFORMATION

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OTHER PRECAUTIONS: Protect containers from physical damage. Do not deface cylinders or labels. Cylinders should be refilled by qualified producers of compressed gas. Shipment of a compressed gas cylinder which has not been filled by the owner or with his written consent is a violation of federal law (49 CFR).

### ABBREVIATIONS:

N/Av - Not Applicable  
N/Av - Not Available  
SA - Simple Asphyxiant  
NE - None Established

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