INTERNATIONAL_GASES_AND_CHEMICALS_LTD

MATERIAL SAFETY DATA SHEETS
DATE: 12/15/00

SUPPLIER ADDRESS: SPEEDWELL RD
PARKHOUSE EAST
NEWCASTLE-U-LYME
EMERGENCY PHONE NUMBER: (178) 256-5556

1. CHEMICAL PRODUCT

PRODUCT NAME: SILICON TETRACHLORIDE SYNONYMS: Silicon Chloride, Tetrachlorosilane

2. COMPOSITION, INFORMATION ON INGREDIENTS

				Exposure Limits (PPM)			
				ACGIH	OSHA		Other
Ingredient Name	Formula	CAS#	Concentration	TLV	PEL	MAC	STEL
SILICON TETRACHLORIDE	SiCl4	10026-04-7	99+%	NE *	NE *	NE *	NE

* Recommend using 5ppm ceilimit for hydrogechloride

Note: NE = NONE ESTABLISHED

3. HAZARD IDENTIFICATION

*** EMERGENCY OVERVIEW ***

Corrosive liquid.
May cause liver damage.
Can cause eye, skin, and respiratory tract burns.

POTENTIAL HEALTH EFFECTS

ROUTES OF ENTRY: Inhalation , Ingestion , Skin

ACUTE EFFECTS: Inhalation of vapors may cause pulmonary edema, circulatory collapse, damage to upper respiratory tract, coughing, difficulty breathing and choking. It is severly irritating and corrosive to the eyes, mucous membranes and upper respiratory tract. Can cause eye and skin burns.

CHRONIC EFFECTS: None known

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: None known

OTHER EFFECTS OF OVEREXPOSURE: Laryngo spasms or pulmonary edema can result from severe exposure. Repeated or prolonged exposure may cause erosion of the teeth.

CARCINOGENICITY (US Only):
NTP - No
IARC MONOGRAPHS - No
OSHA REGULATED - No

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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: Immediately flush with copious amounts of water for at least 15 minutes.

SKIN CONTACT: Immediately flush with copious amounts of water for at least 15 minutes while removing contaminated clothing.

INGESTION: None

IN EVENT OF EXPOSURE, CONSULT A PHYSICIAN

NOTE TO PHYSICIAN: Signs and symptoms of pulmonary edema can be delayed for several hours.

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. Do not use water.

SPECIAL FIRE FIGHTING INSTRUCTION AND EQUIPMENT: Wear self-contained breathing apparatus and full protective clothing. Reacts vigorously with water or the moisture in the air liberating heat and yielding hydrogen chloride and clear gelatinous siloxane.

HAZARDOUS COMBUSTION PRODUCTS: None

UNUSUAL FIRE AND EXPLOSION HAZARDS: Water hydrolyzes material liberating acidic gas which in contact with metal surfaces can generate flammable and/or explosive hydrogen gas. Emits toxic fumes under fire conditions. Cylinder rupture may occur under fire conditions.

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. Use a self-contained breathing apparatus in case of emergency or non-routine use. If in liquid form: Absorb with sand or vermiculite and place in closed containers for disposal.

SPECIALIZED EQUIPMENT: Small leaks can be detected with concentrated NH4OH by giving off white fumes. Neutralize spills with soda ash or lime.

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. No part of cylinder should be exposed to temperatures above 52 degrees celsius.

PRECAUTIONS TO BE TAKEN IN STORAGE: Store in well ventilated areas. Store away from heat, flame, and sparks. Keep valve protection cap on cylinders when not in use.

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

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

PERSONAL PROTECTION

EYE/FACE PROTECTION: Goggles.

SKIN PROTECTION: Protective gloves.

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: Pungent
PHYSICAL STATE: Liquid
VAPOR PRESSURE: @ 20 deg.C: 194 mm Hg
VAPOR DENSITY (AIR=1): 5.8
BOILING POINT (C): 57.6
SOLUBILITY IN WATER: Reacts with water
SPECIFIC GRAVITY (H2O=1): 1.48
EVAPORATION RATE: N/Av
ODOR THRESHOLD: 1 to 5 ppm

10. STABILITY AND REACTIVITY

STABILITY: Stable under normal storage conditions.

CONDITIONS TO AVOID: Storage in poorly ventilated areas.

MATERIALS TO AVOID: Alcohols, strong acids, strong bases, and water. Avoid contact with metals. Reacts violently with potassium and sodium.

HAZARDOUS POLYMERIZATION: Will not occur.

HAZARDOUS DECOMPOSITION: Hydrogen chloride gas, silicon oxide.

11. TOXICOLOGICAL INFORMATION

LETHAL CONCENTRATION (LC50): 750 ppm, rat 1 hour.
LETHAL DOSE 50 (LD50): N/Ap
TERATOGENICITY: N/Ap
REPRODUCTIVE EFFECTS: N/Ap
MUTAGENICITY: N/Ap

12. ECOLOGICAL INFORMATION

No adverse ecological effects are expected.

13. DISPOSAL CONSIDERATIONS

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.

14. TRANSPORT INFORMATION

CONCENTRATION: 99+%
DOT DESCRIPTION (US ONLY):
PROPER SHIPPING NAME: Silicon tetrachloride
HAZARD CLASS: 8 (corrosive), Packing Group II
IDENTIFICATION NUMBER: UN1818
REPORTABLE QUANTITIES: None
LABELING: CORROSIVE

ADR/RID (EU Only): Class 8, 12(b)

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

15. REGULATORY INFORMATION

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: 233-054-0

NUMBER IN ANNEX 1 OF DIR 67/548: Material is listed in annex 1.

EU CLASSIFICATION: N/Av

R: 14-36/37/38

S: 7/8-26

16. OTHER INFORMATION

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/Ap - Not Applicable

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