

INTERNATIONAL_GASES_AND_CHEMICALS_LTD

MATERIAL SAFETY DATA SHEETS

DATE: 1/26/01

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

EMERGENCY PHONE: (178) 256-5556
NUMBER

1. CHEMICAL PRODUCT

PRODUCT NAME: HYDROGEN FLUORIDE

SYNONYMS: Hydrofluoric acid, Fluoric acid, Fluohydric acid.

2. COMPOSITION, INFORMATION ON INGREDIENTS

| Ingredient Name | Formula | CAS# | Concentration | Exposure Limits (PPM) | | | |
|-------------------|---------|-----------|---------------|-----------------------|----------|-----|------------|
| | | | | ACGIH TLV | OSHA PEL | MAC | Other STEL |
| HYDROGEN FLUORIDE | FH | 7664-39-3 | 99+% | NE | 3.0 | NE | 3.0 |

Note: NE = NONE ESTABLISHED

3. HAZARD IDENTIFICATION

*** EMERGENCY OVERVIEW ***

Corrosive, poisonous, nonflammable liquid and vapor.

May be fatal if inhaled.

Can cause eye and skin damage.

Can cause irritation to nose, throat, and respiratory tract.

POTENTIAL HEALTH EFFECTS

ROUTES OF ENTRY: Inhalation , Ingestion , Skin

ACUTE EFFECTS: Can be absorbed through the skin. Inhalation may cause irritation to the respiratory tract, nose, and throat. Ingestion of the liquid causes gastrointestinal irritation. Eye contact will cause local irritation, burning sensations, and possible damage. Corrosive and irritating to the eyes, skin and all living tissue. May cause severe burns when exposed to tissue. Symptoms include lacrimation, cough, labored breathing and excessive salivary and sputum formation.

CHRONIC EFFECTS: Bronchitis. Over exposure may lead to Fluorosis, an abnormal calcification pattern of the skeletal system.

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: Kidney disease, and impaired pulmonary function.

OTHER EFFECTS OF OVEREXPOSURE: None

CARCINOGENICITY (US Only):

NTP - No

IARC MONOGRAPHS - No

OSHA REGULATED - No

Continued ...

_4._FIRST_AID_MEASURES

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

EYE CONTACT: Immediately flush eyes, including under the eyelids, gently but thoroughly with plenty of running water for at least 15 minutes.

SKIN CONTACT: Immediately flush with copious amounts of water for at least 15 minutes while removing contaminated clothing. Continue washing for 2-4 hours with water or preferably, soak in iced sephiran (13%), epsom salt or 70% denatured ethyl alcohol solution for 1-4 hours depending on severity of burns.

INGESTION: Never give anything by mouth to an unconscious person. Contact a poison control center. If ingested have conscious person drink 2 to 3 glasses of milk or water. Do not induce vomiting.

IN EVENT OF EXPOSURE, CONSULT A PHYSICIAN

NOTE TO PHYSICIAN: None

_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. Stay upwind.

HAZARDOUS COMBUSTION PRODUCTS: Highly corrosive fluoride fumes.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Emits toxic fumes under fire conditions.

_6._ACCIDENTAL_RELEASE_MEASURES

CLEAN UP PROCEDURES: Evacuate and ventilate area. Remove all sources of ignition. Prevent release of material to surface water or sewers. Spills should be covered with lime to form a slurry.

SPECIALIZED EQUIPMENT: Vapor should be passed through a packed tower scrubber.

_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.

PRECAUTIONS TO BE TAKEN IN STORAGE: Store in well ventilated areas. 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 maintain concentration below exposure limits.

PERSONAL PROTECTION

EYE/FACE PROTECTION: Goggles. A safety shower and eyewash station should be readily available.

SKIN PROTECTION: Impervious gloves, coveralls, boots, and/or other resistant protective clothing.

RESPIRATORY PROTECTION: Use a self-contained breathing apparatus in case of emergency or non-routine use.

OTHER PROTECTIVE EQUIPMENT: Safety shoes when handling cylinders.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Colorless

ODOR: Irritating pungent odor.

PHYSICAL STATE: Liquid

VAPOR PRESSURE: @20 deg. C: 110 mm Hg

VAPOR DENSITY (AIR=1): 1.858

BOILING POINT (C): @1 atm: 19.4

Continued ...

SOLUBILITY IN WATER: Complete
SPECIFIC GRAVITY (H2O=1): @0/4 deg. C:
.957
EVAPORATION RATE: N/Av
ODOR THRESHOLD: 5 ppm

10. STABILITY AND REACTIVITY

STABILITY: Stable under normal storage conditions.

CONDITIONS TO AVOID: Contact with water.

MATERIALS TO AVOID: Avoid contact with metals. Water, organic materials, cyanides, sulfides, and silica.

HAZARDOUS POLYMERIZATION: Will not occur.

HAZARDOUS DECOMPOSITION: Hydrogen and toxic fluoride components.

11. TOXICOLOGICAL INFORMATION

LETHAL CONCENTRATION (LC50): 1276 ppm, rat 1 hour.

LETHAL DOSE 50 (LD50): N/Av

TERATOGENICITY: N/Av

REPRODUCTIVE EFFECTS: N/Av

MUTAGENICITY: N/Av

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: Hydrogen fluoride, anhydrous

HAZARD CLASS: 8 (corrosive), Packing group I.

IDENTIFICATION NUMBER: UN1052
REPORTABLE QUANTITIES: 100 lbs
LABELING: CORROSIVE, POISON.

ADR/RID (EU Only): Class 8, 6

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 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 this material is 100 lbs.

EU NUMBER: N/Av

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

EU CLASSIFICATION: N/Av

R: N/Av

S: N/Av

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/Av - Not Applicable

N/Av - Not Available

SA - Simple Asphyxiant

NE - None Established

DISCLAIMER: Information included in this document is given to the best of our knowledge, however, no warranty is made that the information is accurate or complete. We do not accept any responsibility for damages by the use of the document.