

FLUOROBORIC ACID

1040

October 1995

CAS No: 16872-11-0
 RTECS No: ED2685000
 UN No: 1775
 EC No: 009-010-00-X

Borofluoric acid
 Fluoboric acid
 Hydrogen tetrafluoroborate
 Hydrofluoboric acid
 HBF₄
 Molecular mass: 87.8

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/SYMPTOMS	PREVENTION	FIRST AID/FIRE FIGHTING
FIRE	Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION			

EXPOSURE		AVOID ALL CONTACT!	IN ALL CASES CONSULT A DOCTOR!
Inhalation	Corrosive. Burning sensation. Cough. Shortness of breath.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Half-upright position. Artificial respiration may be needed. Refer for medical attention.
Skin	Corrosive. Pain. Blisters.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
Eyes	Corrosive. Redness. Pain. Severe deep burns.	Face shield or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
Ingestion	Corrosive. Abdominal cramps. Burning sensation. Shock or collapse.	Do not eat, drink, or smoke during work.	Rinse mouth. Do NOT induce vomiting. Refer for medical attention.

SPILLAGE DISPOSAL	PACKAGING & LABELLING
Collect leaking liquid in sealable non-metallic containers. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Personal protection: complete protective clothing including self-contained breathing apparatus.	C Symbol R: 34 S: (1/2-)26-27-45 UN Hazard Class: 8 UN Pack Group: II Unbreakable packaging; put breakable packaging into closed unbreakable container. Do not transport with food and feedstuffs.

EMERGENCY RESPONSE	SAFE STORAGE
Transport Emergency Card: TEC (R)-80S1775 or 80GC1-II+III	Separated from strong bases, food and feedstuffs. Well closed. Ventilation along the floor.

IMPORTANT DATA

Physical State; Appearance

COLOURLESS LIQUID.

Chemical dangers

The substance decomposes on heating and on burning producing toxic and corrosive fumes including hydrogen fluoride and fluorine. The substance is a strong acid, it reacts violently with bases and is corrosive. Attacks many metals forming flammable/explosive gas (hydrogen - see ICSC0001).

Occupational exposure limits

TLV: (as fluorides, as F) 2.5 mg/m³ as TWA; A4 (not classifiable as a human carcinogen); (ACGIH 2004).

MAK: (as F) (Inhalable fraction) 2.5 mg/m³; Peak limitation category: II(2); (DFG 2004).

Routes of exposure

The substance can be absorbed into the body by inhalation of its aerosol and by ingestion.

Inhalation risk

A harmful contamination of the air can be reached rather quickly on evaporation of this substance at 20/C.

Effects of short-term exposure

Corrosive. The substance is corrosive to the eyes, the skin and the respiratory tract. Corrosive on ingestion. Inhalation of the aerosol may cause lung oedema (see Notes). The effects may be delayed. Medical observation is indicated.

Effects of long-term or repeated exposure

The substance may have effects on the bones and teeth, resulting in fluorosis.

PHYSICAL PROPERTIES

Boiling point (decomposes): 130/C
Solubility in water: miscible

Vapour pressure, Pa at 20/C: 665
Relative vapour density (air = 1): 3.0

ENVIRONMENTAL DATA

NOTES

Fluoroboric acid is used as an aqueous solution.

The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential.

Immediate administration of an appropriate inhalation therapy by a doctor or a person authorized by him/her, should be considered. Card has been partly updated in April 2005. See sections Occupational Exposure Limits, Emergency Response.

ADDITIONAL INFORMATION

LEGAL NOTICE

Neither the EC nor the IPCS nor any person acting on behalf of the EC or the IPCS is responsible