

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME:

Sodium Hydrogen Fluoride

CHEMICAL FORMULA:

NaHF₂

COMPANY NAME:

PELICHEM: The Chemical Division of NECSA

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2. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAME OF SUBSTANCE:

Sodium Hydrogen Fluoride

SYNONYMS:

Sodium Bifluoride;

Sodium Acid Fluoride

CONCENTRATION:

>99%

UN No:

2439

CAS-No:

1333-83-1

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Toxic if swallowed. Harmful if inhaled. Dust is very noxious; causes sneezing and irritation of nose, throat. Burns eyes; poisonous when taken internally. Causes skin irritation, especially in the presence of perspiration. When dry, sodium bifluoride is non-corrosive and relatively non-abrasive; when moist, or in solution, the salt is corrosive behaving like a solution of weak hydrofluoric acid.

4. FIRST AID MEASURES

GENERAL ADVICE:

Remove from exposure, lie down.

Take all contaminated clothing off immediately. Show this safety data sheet to the doctor in attendance.

INHALATION:

Move to fresh air. Give oxygen. Consult a physician.

EYE CONTACT:

Move to fresh air. Rinse immediately with plenty of water, also under the eyelids. Consult a physician.

SKIN CONTACT:

Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Move to fresh air. Consult a physician. Brush off excess material.

PROTECTION OF FIRST-AIDERS:

Ensure adequate ventilation. Use personal protective equipment.

INGESTION:

Move to fresh air. Call a physician immediately. Drink plenty of water. If possible drink milk afterwards.

5. FIRE-FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA:

Non-flammable. Water or water spray for fires adjacent to non-leaking tanks or containers. Carbon dioxide (CO₂), foam, dry chemical

SPECIFIC METHODS:

Cool containers and tanks with water spray.

SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS:

In case of fire, wear a self-contained breathing apparatus.

SPECIFIC HAZARDS:

Heating can release hazardous gases and hydrogen fluoride can be produced during a fire.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS:

Ensure adequate ventilation. Use personal protective equipment. Evacuate personnel to safe areas.

METHODS FOR CLEANING UP:

Clean up promptly by scoop or vacuum.

Do not create a powder cloud by using a brush or compressed air.

ENVIRONMENTAL PRECAUTIONS:

Do not allow material to contaminate ground water system. Prevent product from entering drains.

7. HANDLING AND STORAGE

TECHNICAL MEASURES AND PRECAUTIONS:

Use only in area provided with appropriate exhaust ventilation. Avoid high temperatures.

HANDLING AND OPEN STORAGE CONDITIONS:

Keep containers tightly closed in a dry and well ventilated area.

SAFE HANDLING ADVICE:

Avoid dust formation. Wear personal protective equipment. Handle an open container with care.

PACKAGING MATERIAL:

40 x 25kg woven polypropylene bags with plastic liners on a palette, cling wrapped and labeled.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

ENGINEERING MEASURES TO REDUCE EXPOSURE:

Ensure adequate ventilation, especially in confined areas.

RESPIRATORY PROTECTION:

In case of dust, use a respirator.

CONTROL PARAMETERS:

OSHA Permitted exposure limit (PEL Final) 8 hr TWA 2.5mg(F)/m³.

EYE PROTECTION:

Tightly fitting safety goggles, face shield.

SKIN AND BODY PROTECTION:

Complete suit protecting against chemicals.
Remove and wash contaminated clothing
before re-use.

HAND PROTECTION:

Hydrofluoric acid-resistant and solvent-
resistant gloves (gloves made of
VITON*).

HYGIENE MEASURES:

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately
after handling the product. When using - do not eat, drink or smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES

FORM:

Crystalline solid.

COLOR:

White granular
material.

SOLUBILITY:

Water solubility - 0.72G/100g H₂O at
20°C

EXPLOSION LIMITS:

Not applicable.

pH:

Between 2 and 3.

TAP DENSITY:

1500kg/m³

**DECOMPOSITION
TEMPERATURE:**

>160°C to form HF and
crystalline NaF.

**AUTO-IGNITION
TEMPERATURE:**

Not applicable.

FLAMMABILITY (SOLID, GAS):

Non flammable.

MOLECULAR WEIGHT:

61.99

ODOR:

Characteristic.

BOILING AND MELTING POINT:

Decomposes on heating.

10. STABILITY AND REACTIVITY

STABILITY:

Stable under normal conditions.

CONDITIONS TO AVOID:

Heating can release hazardous gases.

**HAZARDOUS DECOMPOSITION
PRODUCTS:**

Hydrogen fluoride.

MATERIALS TO AVOID:

Glass, acids.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY:

LD50/oral/rat = 80 mg/kg.

CHRONIC TOXICITY:

Human experience: Continuous or intermittent exposure to inorganic fluorides can lead
to appreciable accumulation of fluoride in bone, and to the development of
osteosclerosis and other bone changes.

CARCINOGENICITY:

No classified as a human carcinogen.

LOCAL EFFECTS:

Toxic by inhalation, in contact with skin and if swallowed. The product causes burns to eyes, skin and mucous membranes. Effects of breathing high concentrations of vapour may include cough and severe shortness of breath. Effects due to ingestion may include unconsciousness, asphyxia, vomiting and discomfort in the chest.

12. ECOLOGICAL INFORMATION:

MOBILITY

No data available.

PERSISTENCE/DEGRADABILITY

No data available.

BIOACCUMULATION

No data available.

ECOTOXICITY:

100ppm was lethal to Tinca Vulgaris

Sodium bifluoride is persistent in the aquatic environment and harmful to fish and fish food organisms.

13. DISPOSAL CONSIDERATIONS:

SAFE AND PREFERRED DISPOSAL METHODS:

Contact manufacturer.

CONTAMINATED PACKAGING:

Contact manufacturer.

14. TRANSPORT INFORMATION

ADR/RID:

UN NO: 2439

Class: 8

IMDG:

Class: 8

Packaging group: II

IATA:

UN/ID No: 2439

Packaging group: II

Labels: Corrosive

IMDG Page: 8223

Labels: Corrosive

Subrisk: None

Class: 8

Labels: Corrosive

Subrisk: None

Proper shipping name:

Sodium Hydrogen Fluoride

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Sodium Hydrogen Fluoride

Packing instruction passenger air craft.

815 (15kg max per package nett)

Y815 (5kg max per package nett)

15. REGULATORY INFORMATION

According to National equivalent of EC-Dir.67/548, as amended, the product is labeled as follows:

- T** : Toxic
R25 : Toxic if swallowed.
S22 : Do not breathe dust.
S26 :In case of contact with eyes, rinse immediately with plenty of water and seek medical advise
C : Corrosive.
R34 :Causes burns.
S37 :Wear suitable gloves.

16. OTHER INFORMATION

RECOMMENDED USE:

1. Component of electrolyte for tin plating.
2. Laundry sour.
3. Pest control.
4. Leather and other bleaching.

FURTHER INFORMATION

Preparations that contain sodium bifluoride at concentrations >1% shall be considered as Corrosive and at concentrations of 0.1 - 1.0% as Irritant.

REFERENCES:

1. (CED) Chemical Exchange Directory S.A., Geneva, Switzerland.
2. Unpublished Reports, AEC of SA Ltd, Pelindaba, South Africa, 1993.

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