

## 1. PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:**  
Sodium Silicofluoride

**CHEMICAL FORMULA:**  
Na<sub>2</sub>SiF<sub>6</sub>

**COMPANY NAME:**  
**PELICHEM:** The Chemical Division of NECSA  
P O Box 582, Pretoria, 0001, South Africa  
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## 2. COMPOSITION/INFORMATION ON INGREDIENTS

**CHEMICAL NAME OF SUBSTANCE:**  
Sodium Fluorosilicate.

**SYNONYMS:**  
Sodium Silico Fluoride;  
Disodium Hexafluorosilicate.

**CONCENTRATION**  
>99%

**UN No:**  
2674

**CAS-No:**  
16893-85-9

## 3. HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

Toxic by inhalation and if swallowed. Harmful if in contact with skin.

## 4. FIRST AID MEASURES

### GENERAL ADVICE:

Show this safety data sheet to the doctor in attendance

### INHALATION:

Move to fresh air. Give oxygen. Consult a physician after significant exposure

### INGESTION:

Drink plenty of water. Induce vomiting immediately and call a physician. If possible drink milk afterwards.

### SKIN CONTACT:

Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Consult a physician.

### EYE CONTACT:

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice

### PROTECTION OF FIRST AIDERS:

Ensure adequate ventilation. Use personal protective equipment.

## 5. FIRE-FIGHTING MEASURES

### SUITABLE EXTINGUISHING MEDIA:

Non-flammable. Carbon dioxide (CO<sub>2</sub>), dry chemical

### EXTINGUISHING MEDIA NOT SUITABLE:

Water.

### SPECIFIC FIRE-FIGHTING HAZARDS:

Hydrogen fluoride can be produced during a fire.

### SPECIFIC METHODS:

Standard procedure for chemical fires.

### PROTECTION FOR FIRE FIGHTERS:

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

## 6. ACCIDENTAL RELEASE MEASURES

### PERSONAL PRECAUTIONS:

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

### ENVIRONMENTAL PRECAUTIONS:

Prevent product from entering drains.

### METHODS FOR CLEANING UP:

Shovel into suitable container for disposal.

## 7. HANDLING AND STORAGE

### TECHNICAL MEASURE TO PREVENT USER EXPOSURE

Use only in area provided with appropriate exhaust ventilation. Avoid dust formation.

### SAFE HANDLING PRECAUTIONS

Wear personal protective equipment (eyes).

### TECHNICAL STORAGE MEASURES

25kg or 50kg woven polypropylene bags with waterproof inner liners.

### STORAGE CONDITIONS

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

### INCOMPATIBLE PRODUCTS

Stowage category A (away from acids).

## 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

### APPROPRIATE ENGINEERING MEASURES

Ensure adequate ventilation, especially in confined areas.

### SPECIFIC CONTROL PARAMETER (EXPOSURE LIMITS)

OSHA Permitted exposure level (PEL Final) 8 hr TWA 2.5mg/m<sup>3</sup>.

### PPE: RESPIRATORY PROTECTION

In case of respirable dust and/or fumes, use a self-contained breathing apparatus.

### PPE: HAND

Rubber or plastic gloves.

### PPE: EYE

Tightly fitting safety goggles

### PPE: SKIN AND BODY

Dust impervious protective suit. Remove and wash contaminated clothing before re-use

### HYGIENE MEASURES

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

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### FORM:

Crystalline.

### COLOUR:

White powder.

### pH:

Between 6 and 7.

### ODOR:

Slightly pungent.

### FLASH POINT:

Does not flash.

### DECOMPOSITION

### TEMPERATURE:

Starts at 500 °C.

### MOLECULAR WEIGHT:

188.06

### RELATIVE

### DENSITY:

2.68

### SOLUBILITY:

Water: 0.64g/100g water at 20 °C

### TYPICAL POUR

### DENSITY:

1340kg/m<sup>3</sup>

### TYPICAL TAP DENSITY:

1590kg/m<sup>3</sup>

## 10. STABILITY AND REACTIVITY

STABILITY:

CONDITIONS TO AVOID:

Stable at normal conditions. Decomposition starts at 500 °C.

To avoid thermal decomposition, do not overheat.

**HAZARDOUS DECOMPOSITION PRODUCTS:**

Sodium Fluoride, Silicon Tetra fluoride and Hydrogen fluoride

**MATERIALS TO AVOID:**

Metals.

## 11. TOXICOLOGICAL INFORMATION

**ACUTE TOXICITY:**

LD50/oral/rat = 125 mg/kg.

Irritation of skin: mild/500 mg/rabbit

Irritation of eyes: severe/100 mg/rabbit

**SENSITIZATION:**

No data available.

**LOCAL EFFECTS:**

Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough.

**CHRONIC TOXICITY:**

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

**HUMAN EXPERIENCE:**

No evidence of association between fluoride ingestion and mortality from cancer in humans. (Internal Agency of Research on Cancer).

## 12. ECOLOGICAL INFORMATION:

**MOBILITY:**

No data available.

**ECOTOXICITY:**

No data available.

**BIOACCUMULATION:**

No data available.

**PERSISTENCE AND DEGRADABILITY:**

No data available.

**FURTHER INFORMATION:**

Highly toxic to foliage.

Lethal to Tinca Vulgaris at 50 ppm.

## 13. DISPOSAL CONSIDERATIONS

**SAFE AND PREFERRED DISPOSAL METHODS:**

Contact manufacturer.

**CONTAMINATED PACKAGING:**

Contact manufacturer.

## 14. TRANSPORT INFORMATION

**ADR/RID:**  
**Class:** 6.1

**Labels:** Harmful

**Proper shipping name:**  
Sodium fluorosilicate, **Item:**  
64°(c)

**IMDG:**  
**Class:** 6.1  
**Packaging group:** III

**Labels:** Harmful  
**Subrisk:** None

**Proper shipping name:**  
Sodium fluorosilicate

**IATA:**  
**Class:** 6.1  
**Packaging group:** III

**Labels:** Harmful  
**Subrisk:** None

**Proper shipping name:**  
Sodium fluorosilicate

## 15. REGULATORY INFORMATION

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

- T** : Toxic  
**R23/24/25** : Toxic by inhalation, in contact with skin and if swallowed.  
**S1/2** : Keep locked-up and out of reach of children.  
**S26** : In case of contact with eyes, rinse immediately with plenty of water and seek medical advise.  
**S44** : If you feel unwell, seek medical advice (show label where possible).

## 16. OTHER INFORMATION

### RECOMMENDED USE:

1. Fluoridation of drinking water.
2. Laundry sours.
3. Opalescent glass.
4. Vitreous enamel frits.
5. Metallurgy of aluminium and verblium.
6. Insecticides and rodenticides.
7. Leather and wood preservatives.

### REFERENCES:

1. (CED) Chemical Exchange Directory S.A., Geneva, Switzerland.
2. Unpublished Reports, AEC of SA Ltd, Pelindaba, South Africa, 1993.
3. IMDG, SABS 0228, SABS 0229.

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