

### 1. PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:**

Sodium Silicofluoride

**CHEMICAL FORMULA:**

Na<sub>2</sub>SiF<sub>6</sub>

**COMPANY NAME:**

**PELCHEM: The Chemical Division of NECSA**

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### 2. COMPOSITION/INFORMATION ON INGREDIENTS

**CHEMICAL NAME OF SUBSTANCE:    SYNONYMS:**

Sodium Fluorosilicate.

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 advise

**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:

Stable at normal conditions. Decomposition starts at

#### CONDITIONS TO AVOID:

To avoid thermal decomposition, do not

500°C.

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

**IATA:**

**Class:** 6.1

**Packaging group:** III

**Labels:** Harmful

**Subrisk:** None

**Labels:** Harmful

**Subrisk:** None

**Proper shipping name:**

Sodium fluorosilicate

**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 soaps.
3. Opalescent glass.
4. Vitreous enamel frits.
5. Metallurgy of aluminium and verblum.
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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