1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers
Product name : Sodium fluoride 0.5 M solution
Product Number : 67414
Brand : Fluka

1.2 Relevant identified uses of the substance or mixture and uses advised against
Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet
Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA
Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number
Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture
GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Acute toxicity, Oral (Category 4), H302
For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word : Warning
Hazard statement(s)
H302 : Harmful if swallowed.

Precautionary statement(s)
P264 : Wash skin thoroughly after handling.
P270 : Do not eat, drink or smoke when using this product.
P301 + P312 : IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.
P330 : Rinse mouth.
P501 : Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS
Contact with acids liberates very toxic gas.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures
Synonyms : Sodium fluoridesolution
Additive Screening Solution 19/Fluka kit no 78374

Formula: FNa
Molecular weight: 41.99 g/mol

## Hazardous components

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium fluoride</td>
<td>Acute Tox. 2; Skin Irrit. 2; Eye Irrit. 2A; Aquatic Acute 3; H300, H315, H319, H402</td>
<td>&gt;= 1 - &lt; 5 %</td>
</tr>
</tbody>
</table>

CAS-No. 7681-49-4
EC-No. 231-667-8
Index-No. 009-004-00-7

For the full text of the H-Statements mentioned in this Section, see Section 16.

### 4. FIRST AID MEASURES

#### 4.1 Description of first aid measures

**General advice**
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area. Hydrofluoric (HF) acid burns require immediate and specialized first aid and medical treatment. Symptoms may be delayed up to 24 hours depending on the concentration of HF. After decontamination with water, further damage can occur due to penetration/absorption of the fluoride ion. Treatment should be directed toward binding the fluoride ion as well as the effects of exposure. Skin exposures can be treated with a 2.5% calcium gluconate gel repeated until burning ceases. More serious skin exposures may require subcutaneous calcium gluconate except for digital areas unless the physician is experienced in this technique, due to the potential for tissue injury from increased pressure. Absorption can readily occur through the subungual areas and should be considered when undergoing decontamination. Prevention of absorption of the fluoride ion in cases of ingestion can be obtained by giving milk, chewable calcium carbonate tablets or Milk of Magnesia to conscious victims. Conditions such as hypocalcemia, hypomagnesemia and cardiac arrhythmias should be monitored for, since they can occur after exposure.

**If inhaled**
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact**
Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact**
Flush eyes with water as a precaution.

**If swallowed**
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

#### 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

#### 4.3 Indication of any immediate medical attention and special treatment needed

No data available

### 5. FIREFIGHTING MEASURES

#### 5.1 Extinguishing media

**Suitable extinguishing media**
Dry powder

#### 5.2 Special hazards arising from the substance or mixture

Hydrogen fluoride, Sodium oxides

#### 5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

#### 5.4 Further information

No data available
6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation.
For personal protection see section 8.

6.2 Environmental precautions
Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Do not flush with water. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.
Never allow product to get in contact with water during storage. Do not store near acids.
Recommended storage temperature 2 - 8 °C

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium fluoride</td>
<td>7681-49-4</td>
<td>TWA 2.500000 mg/m³</td>
<td>USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants</td>
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</tr>
<tr>
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<td></td>
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<td>USA. Occupational Exposure Limits (OSHA) - Table Z-2</td>
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<td>USA. NIOSH Recommended Exposure Limits</td>
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<td>TWA 2.500000 mg/m³</td>
<td>USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants</td>
<td></td>
</tr>
</tbody>
</table>

Remarks
CAS number varies with compound

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TWA 2.500000 mg/m³</td>
<td>USA. Occupational Exposure Limits (OSHA) - Table Z-2</td>
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<tr>
<td></td>
<td>Z37.28-1969</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>TWA 2.500000 mg/m³</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
<td></td>
</tr>
<tr>
<td>Bone damage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluorosis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Substances for which there is a Biological Exposure Index or Indices (see BEI® section)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not classifiable as a human carcinogen</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
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<td>TWA 2.500000 mg/m³</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
<td></td>
</tr>
</tbody>
</table>
Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen varies

### Biological occupational exposure limits

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Parameters</th>
<th>Value</th>
<th>Biological specimen</th>
<th>Basis</th>
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</thead>
<tbody>
<tr>
<td>Sodium fluoride</td>
<td>7681-49-4</td>
<td>Fluoride</td>
<td>3.0000 mg/g</td>
<td>Urine</td>
<td>ACGIH - Biological Exposure Indices (BEI)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Remarks Prior to shift (16 hours after exposure ceases)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fluoride</td>
<td>10.0000 mg/g</td>
<td>Urine</td>
<td>ACGIH - Biological Exposure Indices (BEI)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>End of shift (As soon as possible after exposure ceases)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fluoride</td>
<td>2.0000 mg/l</td>
<td>Urine</td>
<td>ACGIH - Biological Exposure Indices (BEI)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Prior to shift (16 hours after exposure ceases)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fluoride</td>
<td>3.0000 mg/l</td>
<td>Urine</td>
<td>ACGIH - Biological Exposure Indices (BEI)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>End of shift (As soon as possible after exposure ceases)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fluoride</td>
<td>2 mg/l</td>
<td>Urine</td>
<td>ACGIH - Biological Exposure Indices (BEI)</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Prior to shift (16 hours after exposure ceases)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fluoride</td>
<td>3 mg/l</td>
<td>Urine</td>
<td>ACGIH - Biological Exposure Indices (BEI)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>End of shift (As soon as possible after exposure ceases)</td>
</tr>
</tbody>
</table>

#### 8.2 Exposure controls

**Appropriate engineering controls**
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

**Personal protective equipment**

**Eye/face protection**
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin protection**
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: butyl-rubber
Minimum layer thickness: 0.3 mm
Break through time: 480 min
Material tested:Butoject® (KCL 897 / Aldrich Z677647, Size M)

Splash contact
Material: butyl-rubber
Minimum layer thickness: 0.3 mm
Break through time: 480 min
Material tested:Butoject® (KCL 897 / Aldrich Z677647, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

**Body Protection**
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection**
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Control of environmental exposure**
Do not let product enter drains.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

#### 9.1 Information on basic physical and chemical properties

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td>Appearance</td>
</tr>
<tr>
<td>b)</td>
<td>Odour</td>
</tr>
<tr>
<td>c)</td>
<td>Odour Threshold</td>
</tr>
<tr>
<td>d)</td>
<td>pH</td>
</tr>
<tr>
<td>e)</td>
<td>Melting point/freezing point</td>
</tr>
<tr>
<td>f)</td>
<td>Initial boiling point and boiling range</td>
</tr>
<tr>
<td>g)</td>
<td>Flash point</td>
</tr>
<tr>
<td>h)</td>
<td>Evaporation rate</td>
</tr>
<tr>
<td>i)</td>
<td>Flammability (solid, gas)</td>
</tr>
<tr>
<td>j)</td>
<td>Upper/lower flammability or explosive limits</td>
</tr>
<tr>
<td>k)</td>
<td>Vapour pressure</td>
</tr>
<tr>
<td>l)</td>
<td>Vapour density</td>
</tr>
<tr>
<td>m)</td>
<td>Relative density</td>
</tr>
<tr>
<td>n)</td>
<td>Water solubility</td>
</tr>
<tr>
<td>o)</td>
<td>Partition coefficient: n-octanol/water</td>
</tr>
<tr>
<td>p)</td>
<td>Auto-ignition temperature</td>
</tr>
<tr>
<td>q)</td>
<td>Decomposition temperature</td>
</tr>
<tr>
<td>r)</td>
<td>Viscosity</td>
</tr>
<tr>
<td>s)</td>
<td>Explosive properties</td>
</tr>
<tr>
<td>t)</td>
<td>Oxidizing properties</td>
</tr>
</tbody>
</table>

#### 9.2 Other safety information
No data available
10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Strong acids

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available
Inhalation: No data available
Dermal: No data available
No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Sodium fluoride)
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available
12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
Not dangerous goods

IMDG
Not dangerous goods

IATA
Not dangerous goods

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium fluoride</td>
<td>7681-49-4</td>
<td>2007-03-01</td>
</tr>
</tbody>
</table>

Pennsylvania Right To Know Components
New Jersey Right To Know Components

<table>
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<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
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<tr>
<td>Water</td>
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<td>2007-03-01</td>
</tr>
<tr>
<td>Sodium fluoride</td>
<td>7681-49-4</td>
<td>2007-03-01</td>
</tr>
</tbody>
</table>

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.  Acute toxicity
Aquatic Acute  Acute aquatic toxicity
Eye Irrit.  Eye irritation
H300  Fatal if swallowed.
H302  Harmful if swallowed.
H315  Causes skin irritation.
H319  Causes serious eye irritation.
H402  Harmful to aquatic life.
Skin Irrit.  Skin irritation

HMIS Rating
Health hazard:  3
Chronic Health Hazard:  *
Flammability:  0
Physical Hazard  0

NFPA Rating
Health hazard:  3
Fire Hazard:  0
Reactivity Hazard:  0

Further information
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Preparation Information
Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.6  Revision Date: 02/27/2015  Print Date: 08/27/2015