

Safety Data Sheet

Sodium fluoride solution 3 – 30 g/ L

Version 2, revision date: 21 August 2017

According to SANS 11014:20140/ ISO 11014: 2009

Generic SDS – No country specific data was used and no occupational exposure limit data

Section 1: Chemical product and company identification

Product name:

Aqueous sodium fluoride, 0,3 g/ 100 ml

Aqueous sodium fluoride, 0,8 g/ 100 ml

Aqueous sodium fluoride, 1,0 g/ 100 ml

Aqueous sodium fluoride, 1,5 g/ 100 ml

Aqueous sodium fluoride, 3,0 g/ 100 ml

CAS#: 7681-49-4

REACH No.:

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A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

Intended use: For laboratory use only, not intended for human consumption

Section 2: Hazard(s) identification

Emergency overview:

These hazards identified apply to the following concentrations of aqueous sodium fluoride: 1,0 g/ 100 ml; 1,5 g/ 100 ml and 3,0 g/ 100 ml. **For concentrations lower than 1,0 g/ 100 ml these solutions are not recognised as a hazardous substance.**

GHS Hazard signal words and symbols:

Danger



Toxic if swallowed

GHS classification of sodium fluoride according to regulation (EC) No 1272/2008 and SANS 10234:

Acute toxicity, oral (Category 3), H301

Skin irritation (Category 2), H315

Eye irritation (Category 2), H319

Other hazards:

Not known to be either persistent or bio-accumulative

Safety precautions

Wear personal protective clothing as described in section 8

Precautionary statements:

P301 + P330 + P331 + P310

If **swallowed**: rinse mouth, do not induce vomiting, call a poison centre/ doctor immediately

P305 + P351 + P338

If **direct contact with eyes** occurs: rinse cautiously with water for several minutes, remove contact lenses and continue rinsing

Section 3: Composition/ information on ingredients

Sodium fluoride solution (0.003 – 3%)

IUPAC Name:	Sodium fluoride
Other identifiers:	Natrium fluoride; sodium monofluoride
CAS number:	7681-49-4
EC number:	231-667-8
Index number:	009-004-00-7
Molecular formula:	FNa
Average mass:	41.988 Da
Monoisotopic mass:	41.988174 Da

Section 4 – First-aid measures

General:	If exposure occurs consult a physician and show this SDS to the doctor in attendance.
In case of skin contact:	Wash skin thoroughly with mild soap and water. Remove contaminated clothing and shoes and wash prior to re-use.
In case of eye contact:	Rinse with clean water for 15 minutes and seek medical advice immediately
If swallowed:	Do not induce vomiting Give nothing to drink Seek medical advice immediately
Indication of any acute effects:	No data available

Section 5: Fire-fighting measures

General:	Non combustible
Extinguishing media:	CO ₂ , powder, water or sand.
None specific hazards:	In case of fire packaging and contents may liberate toxic gases including gaseous hydrogen fluoride
Advice for fire-fighters:	Wear self-contained breathing apparatus and impervious protective suits, gloves, and boots

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:	As far possible avoid direct contact with the solution and only use as a laboratory chemical For personal protection refer to section 8
Environmental precautions:	Do not let the product enter municipal drains, surface water or soil

Methods and materials for containment and cleaning up including recovery neutralisation and disposal:

The liquid should be soaked up with an inert sorbent material and disposed of as hazardous waste in suitable closed containers. Dispose in a safe manner in accordance with local/ international regulations.

Secondary disaster prevention:

Keep public away from danger area.

In case of fire use water stream to cool containers

Section 7: Handling and storage

Precautions for safe handling:

Avoid contact with skin and eyes

Wash hands, and other exposed areas, with water after handling.

Remove contaminated clothing and shoes and wash before re-using.

Provide adequate ventilation to minimize dust concentrations

Storage:

This product should be stored at room temperature

Prevent contact with water when stored

Do not store the product with acids

Store in dry, well-ventilated area.

Keep packaging closed when not in use.

Avoid storage in glass

Section 8: Exposure controls and personal protection

Personal protective equipment:

Eye/ face protection:

Wear safety glasses with side protection only use equipment that has been tested and approved under appropriate government regulations.

Skin protection:

Handle with suitable rubber/ nitrile or latex gloves. The gloves must be inspected prior to use and proper glove removal techniques, to avoid skin exposure, must be used. Hands should be washed and dried after use and in accordance with good laboratory practices.

Body protection:

Wear closed personal protective clothing with suitable protection against chemical exposure.

Technical measures:

Emergency eye wash fountain and safety shower should be available in the immediate vicinity of any potential exposure.

Work areas must be provided with adequate ventilation and local exhaust ventilation.

Environmental exposure control

Do not let the product enter municipal drains, surface water or soil

Section 9: Physical and chemical properties

Appearance:

Clear odourless solution

pH Aqueous sodium fluoride

No data available

Melting/ freezing point:

0,0 °C

Boiling point:	100,0 °C
Flashpoint:	No data available
Upper/ lower flammability or explosive limits:	No data available
Vapour pressure:	No data available
Vapour density:	No data available
Relative density:	1,020 g/cm ³
Solubility(ies):	Completely miscible in water
n-octanol/ water partition coefficient:	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available

Section 10: Stability and reactivity

Reactivity:	No data available
Chemical stability:	Stable under recommended storage conditions
Possibility of hazardous reactions:	Contact with acids may liberate toxic gasses
Conditions to avoid:	Avoid contact with acids, strong bases and heat
Incompatible materials:	Strong oxidising agents and glass
Hazardous decomposition products:	Decomposition products that may be formed in case of fire include gaseous hydrogen fluoride and sodium oxides

Section 11: Toxicological information

Information in this section is based on the sodium fluoride dossier obtained from the European Chemicals Agency

Acute toxicity oral:	LD 50 > 25 - < 2 000 mg/ kg bw (Based on female rat studies)
Acute toxicity inhalation:	No data available
Acute toxicity dermal:	LD 50 > 2 000 mg/ kg bw (Based on rat studies)
Skin corrosion/ irritation/ sensitisation:	Based on animal studies no skin corrosion or irritation was noted (Rabbit)
Serious damage to eyes / eye irritation:	Animal studies (rabbit) have indicated that eye irritation occurs. However, there is not sufficient data for the chemical to be classified according to EU CLP/ GHS criteria
Respiratory sensitisation:	No data available
Mutagenicity:	No data available
Carcinogenicity:	IARC: Group 3 – not classifiable as to carcinogenicity to humans
Reproductive toxicity:	No data available

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Target organ systemic toxicity:	No data available, however, liver irregularities have been reported based on exposure to sodium fluoride
Hazardous to the aquatic environment:	No data available
Additional information:	Although there is little information on the toxicological properties of sodium fluoride, it is known that the fluoride ion can reduce serum concentrations of calcium causing possibly fatal hypocalcaemia.

Section 12: Ecological information

Toxicity	According to the European Union Risk Assessment Report, Volume 8, Institute for Health and Consumer Protection, European Chemicals Bureau and sodium fluoride dossier obtained from the European Chemicals Agency: • Toxicity to microorganisms: NOEC values of between 7.1 -226 mg/L • Freshwater algae: EC50 values ranged from 43 to 122 mg F/L. • Marine algae: EC50 of 81 mg/L for <i>Skeletonema costatum</i>. • Toxicity to aquatic invertebrates: 21-day NOEC for <i>D. magna</i> exposed to sodium fluoride ranged between 3.7 and 14.1 mg F/L. • Toxicity to fish: NOEC for mortality 4 mg/L
Persistence and degradability	No data available
Persistent, bio-accumulative and toxic assessment	The mixture contains no components considered to be either persistent, bio-accumulative or toxic at levels of 0.1% or higher.
Mobility	No data available
Other adverse effects	No data available

Section 13: Disposal considerations

Product	The material should be considered as hazardous waste. Dispose in a safe manner in accordance with local/ international regulations.
Contaminated packaging or other consumables	Dispose of as described for the product

Section 14: Transport information

UN number	-
UN proper shipping name	Sodium fluoride solution, liquid
UN classification/ transport hazard class(es)	Not dangerous goods
Packing group	-
Marine pollutant	No
Special precautions	No data available

Section 15: Regulatory information

Safety, health and environmental regulations/ legislation specific for the substance or mixture	The SDS has been compiled in accordance with SANS 11014:20140/ ISO 11014: 2009 and SANS 10234:2008
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Chemical safety assessment

For this product a chemical safety assessment was not carried out

Section 16: Other information

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References:

- South African National Standard: Safety data sheet for chemical products – Content and order of sections. SANS 11014:2010; ISO 11014:2009 Edition 1
- South African National Standard: Globally harmonised system of classification and labelling of chemicals (GHS). SANS 10234:2008 Edition 1.1
- South African national Standard: Supplement to SANS 10234: Edition 1 List of classification and labelling of chemicals in accordance with the Globally Harmonized System (GHS)
- Sodium fluoride dossier obtained from the European Chemicals Agency <https://echa.europa.eu/registration-dossier/-/registered-dossier/14274/3/1/>
- European Union Risk Assessment Report, Volume 8, Institute for Health and Consumer Protection, European Chemicals Bureau
- Agency for Toxic Substances and Disease Registry: Substances listing fluorides, hydrogen fluoride, and fluorine
- International Agency for Research on Cancer (IARC) – summaries and evaluation