SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 06/19/2014 Version 2.0

SECTION 1. Identification

Product identifier

Product number	106449
Product name	Sodium fluoride for analysis EMSURE® ACS,ISO,Reag. Ph Eur
CAS-No.	7681-49-4

Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Reagent for analysis

Details of the supplier of the safety data sheet

Company	EMD Millipore Corporation | 290 Concord Road, Billerica, MA 01821, United States of America | General Inquiries: +1-978-715-4321 | Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)
Emergency telephone	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

SECTION 2. Hazards identification

GHS Classification

Acute toxicity, Category 3, Oral, H301
Skin irritation, Category 2, H315
Eye irritation, Category 2, H319

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

GHS-Labeling

Hazard pictograms



Signal Word
Danger

Hazard Statements
H301 Toxic if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.

Precautionary Statements
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

OSHA Hazards
This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200). This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS and may deviate from the GHS information.

Other hazards

Water Reactive

SECTION 3. Composition/information on ingredients

Formula	NaF	FNa (Hill)
Molar mass	41.98 g/mol	

Hazardous ingredients
Chemical Name (Concentration)
CAS-No.
Sodium fluoride (>= 90 % - <= 100 %)
7681-49-4
Exact percentages are being withheld as a trade secret.

SECTION 4. First aid measures

Description of first-aid measures

Inhalation
After inhalation: fresh air. Get medical attention.

Skin contact
After contact with skin: Rinse with plenty of water for at least 10 minutes. Immediately remove contaminated clothes. Apply calcium gluconate gel (preparation: boil 5 g of calcium gluconate in 85 ml of hot distilled water, add 10 g glycerol. Allow 5 g of Carmellose-sodium to swell in the hot solution. Stable for 6 months, store in a cool place) and massage into the skin until the pain subsides, in between rinse with water and apply fresh gel. Continue gel therapy for another 15 minutes after the pain has subsided. If no calcium gluconate gel is available, apply several dressings thoroughly moistened with 20 % calcium gluconate solution. Medical advice absolutely required!

Eye contact
After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist.

Ingestion
After swallowing: Immediately give to drink plenty of water, add calcium (in the form of calcium gluconate or calcium lactate). Caution: In the case of vomiting risk of perforation! Administer more calcium gluconate solution. Laxative: Sodium sulfate (1 tablespoon/1/4 l water). Seek medical advice immediately. Ensure that injured persons remain calm and protect them against heat loss.

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

Irritation and corrosion, Cough, respiratory arrest, Convulsions, death
Risk of corneal clouding.
The following applies to soluble inorganic fluorides in general: may cause irritations to burns in contact with eyes, skin, mucous membranes. Systemic effect: drop in blood calcium level, agitation, spasms, cardiovascular disorders, CNS disorders.

Indication of any immediate medical attention and special treatment needed

Note for the doctor: It is recommended to consult a doctor with experience in the treatment of lesions caused by hydrofluoric acid. If a systemic effect is suspected, monitoring and treatment in an intensive care unit is urgently required. Caution, ventricular fibrillation due to electrolyte imbalance.

SECTION 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

Special hazards arising from the substance or mixture

Not combustible.
Development of hazardous combustion gases or vapors possible in the event of fire.
Fire may cause evolution of:
Hydrogen fluoride

Advice for firefighters

Special protective equipment for fire-fighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid substance contact. Avoid inhalation of dusts. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

Environmental precautions

Do not empty into drains.

Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills.

Observe possible material restrictions (see sections 7 and 10).
Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

SECTION 7. Handling and storage

Precautions for safe handling

Observe label precautions.

Conditions for safe storage, including any incompatibilities

Tightly closed. Dry. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.

Store at +5°C to +30°C (+41°F to +86°F).

SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Ingredients

Basis	Value	Threshold limits	Remarks
Sodium fluoride 7681-49-4			
ACGIH	Time Weighted Average (TWA):	2.5 mg/m³	Expressed as: as F
NIOSH/GUIDE	Recommended exposure limit (REL):	2.5 mg/m³	Expressed as: as F
OSHA_TRANS	PEL:	2.5 mg/m³	Expressed as: as F
Z1A	Time Weighted Average (TWA):	2.5 mg/m³	Expressed as: as F
OSHA/Z2	Time Weighted Average (TWA):	2.5 mg/m³	Form of exposure: Dust.

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

Hygiene measures

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance. Work under hood. Do not inhale substance/mixture.

Eye/face protection

Safety glasses

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Other protective equipment:

protective clothing

Respiratory protection

required when dusts are generated.

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

SECTION 9. Physical and chemical properties

Physical state	crystals
Color	colorless
Odor	odorless
Odor Threshold	No information available.
pH	ca. 10.2 at 40 g/l 68 °F (20 °C)
	996 °C at 1,013 hPa
Boiling point/boiling range	3,083 °F (1,695 °C) at 1,013 hPa
Flash point	not applicable
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Vapor pressure	1 hPa at 1,971 °F (1,077 °C)
Relative vapor density	No information available.
Density	2.8 g/cm³ at 68 °F (20 °C)
Relative density	No information available.
Water solubility	42 g/l at 68 °F (20 °C)
Partition coefficient: n-octanol/water	No information available.
Autoignition temperature	No information available.

Decomposition temperature	No information available.
Viscosity, dynamic	No information available.
Explosive properties	No information available.
Oxidizing properties	No information available.
Ignition temperature	not applicable

SECTION 10. Stability and reactivity

Reactivity
See below

Chemical stability
The product is chemically stable under standard ambient conditions (room temperature) .

Possibility of hazardous reactions
Generates dangerous gases or fumes in contact with:

acids, Possible formation of:

Hydrogen fluoride

Conditions to avoid
Heating (decomposition).

Incompatible materials
glass

Hazardous decomposition products
in the event of fire: See section 5.

SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure
Eye contact, Skin contact, Ingestion

Target Organs
Eyes
Skin
Respiratory system
Central nervous system
skeleton
Kidneys

Acute oral toxicity
LDLO human: 71 mg/kg (RTECS)

Symptoms: Convulsions

absorption

LD50 rat: 25 - 200 mg/kg (ECHA)

LD50 rat: 148.5 mg/kg
US-EPA

Acute inhalation toxicity

Symptoms: mucosal irritations, Cough

Acute dermal toxicity
absorption

Skin irritation
Causes poorly healing wounds.

Causes skin irritation.

Eye irritation
rabbit
Result: irritating
(ECHA)

Risk of corneal clouding.
Causes serious eye irritation.

Sensitization
Buehler Test guinea pig
Result: negative
(ECHA)

Genotoxicity in vivo
Mutagenicity (mammal cell test): chromosome aberration.
mouse
Result: negative

Genotoxicity in vitro
Mutagenicity (mammal cell test): micronucleus.
Result: negative
(National Toxicology Program)

Ames test
Salmonella typhimurium
Result: negative
(National Toxicology Program)

Mutagenicity (mammal cell test):
Result: negative
(ECHA)

Ames test
Salmonella typhimurium
Result: negative
(ECHA)

Carcinogenicity
Did not show carcinogenic effects in animal experiments. (External MSDS)

Specific target organ systemic toxicity - single exposure
The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific target organ systemic toxicity - repeated exposure
The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard
Regarding the available data the classification criteria are not fulfilled.

Carcinogenicity

IARC	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
ACGIH	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Further information
Decomposition of the substance with tissue moisture.
Systemic effects:
Cardiac irregularities, respiratory arrest, death
Other information
The following applies to soluble inorganic fluorides in general: may cause irritations to burns in contact with eyes, skin, mucous membranes. Systemic effect: drop in blood calcium level, agitation, spasms, cardiovascular disorders, CNS disorders.
Further data:
Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information

Ecotoxicity

Toxicity to fish
LC50 Gambusia affinis (Mosquito fish): 925 mg/l; 96 h (IUCLID)

Toxicity to daphnia and other aquatic invertebrates
EC50 Daphnia magna (Water flea): 338 mg/l; 48 h (IUCLID)

EC5 E.sulcatum: 101 mg/l (maximum permissible toxic concentration) (Hommel)

Toxicity to algae
IC50 Desmodesmus subspicatus (green algae): 850 mg/l; 72 h (IUCLID)

Toxicity to bacteria
EC0 Pseudomonas putida: 231 mg/l; 16 h (referred to the anion) (maximum permissible toxic concentration) (IUCLID)

EC50 activated sludge: 2,930 mg/l; 3 h
ISO 8192 (IUCLID)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)
static test NOEC Daphnia magna (Water flea): 8.9 mg/l; 21 d
(ECHA)

Persistence and degradability
No information available.

Bioaccumulative potential
No information available.

Mobility in soil
No information available.

Additional ecological information
Forms corrosive mixtures with water even if diluted.
Hazard for drinking water supplies.
Further information on ecology
Discharge into the environment must be avoided.

SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

SECTION 14. Transport information

Land transport (DOT)

UN number	UN 1690
Proper shipping name	SODIUM FLUORIDE, SOLID
Class	6.1
Packing group	III
Environmentally hazardous	--

Air transport (IATA)

UN number	UN 1690
Proper shipping name	SODIUM FLUORIDE, SOLID
Class	6.1
Packing group	III
Environmentally hazardous	--

Special precautions for user	no

Sea transport (IMDG)

UN number	UN 1690
Proper shipping name	SODIUM FLUORIDE, SOLID
Class	6.1
Packing group	III
Environmentally hazardous	--
Special precautions for user	yes
EmS	F-A S-A

SECTION 15. Regulatory information

United States of America

OSHA Hazards

Highly toxic by ingestion
Skin irritant
Eye irritant
Target organ effects

This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS, and may deviate from the GHS information on the label and in section 2.

SARA 311/312 Hazards

Reactivity Hazard
Acute Health Hazard
Chronic Health Hazard

SARA 313

SARA 313: 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 302

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

Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:
Ingredients
Sodium fluoride

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:
Ingredients
Sodium fluoride

DEA List I

Not listed

DEA List II

Not listed

US State Regulations

Massachusetts Right To Know

Ingredients
Sodium fluoride

Pennsylvania Right To Know

Ingredients
Sodium fluoride

New Jersey Right To Know

Ingredients
Sodium fluoride

California Prop 65 Components

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

Notification status

TSCA:	All components of the product are listed in the TSCA-inventory.
DSL:	All components of this product are on the Canadian DSL.

SECTION 16. Other information

Training advice

Provide adequate information, instruction and training for operators.

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

H301	Toxic if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.

Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Revision Date06/19/2014

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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