



SAFETY DATA SHEET

MATERION

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

| | |
|------------------------------|---|
| Name of the substance | Sodium fluoride (NaF) powder and pieces |
| Identification number | 009-004-00-7 (Index number) |
| Registration number | - |
| Document number | 1ZS |
| Synonyms | Sodium fluoride (NaF) * Sodium monofluoride |
| Materion Code | 1ZS |
| Issue date | 04-December-2013 |
| Version number | 09 |
| Revision date | 30-June-2021 |
| Supersedes date | 28-May-2021 |

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

| | |
|-----------------------------|----------------|
| Identified uses | Not available. |
| Uses advised against | None known. |

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The substance has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Regulation (EC) No 1272/2008 as amended

Health hazards

| | | |
|-----------------------------------|------------|--------------------------------|
| Acute toxicity, oral | Category 3 | H301 - Toxic if swallowed. |
| Skin corrosion/irritation | Category 2 | H315 - Causes skin irritation. |
| Serious eye damage/eye irritation | Category 2 | |

Environmental hazards

| | | |
|--|------------|--|
| Hazardous to the aquatic environment, long-term aquatic hazard | Category 3 | |
|--|------------|--|

Hazard summary

Toxic if swallowed. Causes serious eye irritation. Causes skin irritation. Exposure to powder or dusts may be irritating to eyes, nose and throat. Dangerous for the environment if discharged into watercourses. Occupational exposure to the substance or mixture may cause adverse health effects. The material as sold in solid form is generally not considered hazardous. However, if the process involves grinding, melting, cutting or any other process that causes a release of dust or fumes, hazardous levels of airborne particulate could be generated.

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains: Sodium fluoride

Hazard pictograms



Signal word Danger

Hazard statements

| | |
|-------------|---------------------------------|
| H301 | Toxic if swallowed. |
| H315 | Causes skin irritation. |
| H315 + H320 | Causes skin and eye irritation. |

Precautionary statements

Prevention

| | |
|------|---|
| P264 | Wash thoroughly after handling. |
| P270 | Do not eat, drink or smoke when using this product. |
| P273 | Avoid release to the environment. |
| P280 | Wear eye protection/face protection. |
| P280 | Wear protective gloves. |

Response

| | |
|--------------------|--|
| P330 | Rinse mouth. |
| P305 + P351 + P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P332 + P313 | If skin irritation occurs: Get medical advice/attention. |
| P337 + P313 | If eye irritation persists: Get medical advice/attention. |

Storage

P405 Store locked up.

Disposal

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Supplemental label information

EUH032 - Contact with acids liberates very toxic gas.
100% of the substance consists of component(s) of unknown acute dermal toxicity. 100% of the substance consists of component(s) of unknown acute inhalation toxicity. 100% of the substance consists of component(s) of unknown acute hazards to the aquatic environment.
For further information, please contact the Product Stewardship Department at +1.800.862.4118.

2.3. Other hazards

This substance does not meet vPvB / PBT criteria of Regulation (EC) No 1907/2006, Annex XIII.

SECTION 3: Composition/information on ingredients

3.1. Substances

General information

| Chemical name | % | CAS-No. / EC No. | REACH Registration No. | Index No. | Notes |
|-----------------|-----|------------------------|------------------------|--------------|-------|
| Sodium fluoride | 100 | 7681-49-4 231-667-8 | - | 009-004-00-7 | # |

Classification: Acute Tox. 3;H301, Skin Irrit. 2;H315

List of abbreviations and symbols that may be used above

DSD: Directive 67/548/EEC.

CLP: Regulation No. 1272/2008.

#: This substance has been assigned Union workplace exposure limit(s).

#: This substance has been assigned Community workplace exposure limit(s).

M: M-factor

PBT: persistent, bioaccumulative and toxic substance.

vPvB: very persistent and very bioaccumulative substance.

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

Composition comments

The full text for all H-statements is displayed in section 16. The full text for all R- and H-phrases is displayed in section 16.

SECTION 4: First aid measures

General information

In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

4.1. Description of first aid measures

Inhalation

Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact

Remove contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

Eye contact

Do not rub eyes. Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Ingestion

Call a physician or poison control centre immediately. Rinse mouth. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

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

Nausea. Abdominal pain. Diarrhoea. Severe eye irritation. Dusts may irritate the respiratory tract, skin and eyes. Skin irritation. May cause redness and pain.

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

Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

SECTION 5: Firefighting measures

| | |
|---|--|
| General fire hazards | No unusual fire or explosion hazards noted. |
| 5.1. Extinguishing media | |
| Suitable extinguishing media | Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂). |
| Unsuitable extinguishing media | None known. |
| 5.2. Special hazards arising from the substance or mixture | During fire, gases hazardous to health may be formed. |
| 5.3. Advice for firefighters | |
| Special protective equipment for firefighters | Wear suitable protective equipment. |
| Special firefighting procedures | Use water spray to cool unopened containers. Water runoff can cause environmental damage. |
| Specific methods | Use standard firefighting procedures and consider the hazards of other involved materials. |

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

| | |
|------------------------------------|---|
| For non-emergency personnel | Immediately evacuate personnel to safe areas. Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS. |
| For emergency responders | Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS. |

6.2. Environmental precautions

Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up

Avoid the generation of dusts during clean-up. Collect dust using a vacuum cleaner equipped with HEPA filter. Prevent product from entering drains.

Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Following product recovery, flush area with water.

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use.

6.4. Reference to other sections

For personal protection, see section 8. For waste disposal, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Minimise dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed. Do not taste or swallow. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. When using, do not eat, drink or smoke. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Do not empty into drains. Observe good industrial hygiene practices.

7.2. Conditions for safe storage, including any incompatibilities

Store locked up. Store in a cool, dry place out of direct sunlight. Store in tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

7.3. Specific end use(s)

Not available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

Austria. MAK List, OEL Ordinance (GwV), BGBl. II, no. 184/2001

| Material | Type | Value | Form |
|---------------------------------|------|------------------------|---------------------|
| Sodium fluoride (CAS 7681-49-4) | MAK | 2,5 mg/m ³ | Inhalable fraction. |
| | STEL | 12,5 mg/m ³ | Inhalable fraction. |

Belgium. Exposure Limit Values

| Material | Type | Value |
|---------------------------------|------|-----------------------|
| Sodium fluoride (CAS 7681-49-4) | TWA | 2,5 mg/m ³ |

Bulgaria. OELs. Regulation No 13 on protection of workers against risks of exposure to chemical agents at work

| Material | Type | Value |
|---------------------------------|------|-----------------------|
| Sodium fluoride (CAS 7681-49-4) | TWA | 2,5 mg/m ³ |

Croatia. Dangerous Substance Exposure Limit Values in the Workplace (ELVs), Annexes 1 and 2, Narodne Novine, 13/09

| Material | Type | Value |
|---------------------------------|------|-----------------------|
| Sodium fluoride (CAS 7681-49-4) | MAC | 2,5 mg/m ³ |

Czech Republic. OELs. Government Decree 361

| Material | Type | Value |
|---------------------------------|---------|-----------------------|
| Sodium fluoride (CAS 7681-49-4) | Ceiling | 5 mg/m ³ |
| | TWA | 2,5 mg/m ³ |

Denmark. Exposure Limit Values

| Material | Type | Value |
|---------------------------------|------|-----------------------|
| Sodium fluoride (CAS 7681-49-4) | TLV | 2,5 mg/m ³ |

Estonia. OELs. Occupational Exposure Limits of Hazardous Substances (Regulation No. 105/2001, Annex), as amended

| Material | Type | Value |
|---------------------------------|------|-----------------------|
| Sodium fluoride (CAS 7681-49-4) | TWA | 2,5 mg/m ³ |

Finland. Workplace Exposure Limits

| Material | Type | Value |
|---------------------------------|------|-----------------------|
| Sodium fluoride (CAS 7681-49-4) | TWA | 2,5 mg/m ³ |

France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984

| Material | Type | Value |
|---------------------------------|------|---------------------|
| Sodium fluoride (CAS 7681-49-4) | VME | 2 mg/m ³ |

Regulatory status: Indicative limit (VL)

Hungary. OELs. Joint Decree on Chemical Safety of Workplaces

| Material | Type | Value |
|---------------------------------|------|-----------------------|
| Sodium fluoride (CAS 7681-49-4) | TWA | 2,5 mg/m ³ |

Iceland. OELs. Regulation 154/1999 on occupational exposure limits

| Material | Type | Value |
|---------------------------------|------|-----------------------|
| Sodium fluoride (CAS 7681-49-4) | TWA | 0,6 mg/m ³ |

Latvia. OELs. Occupational exposure limit values of chemical substances in work environment

| Material | Type | Value |
|---------------------------------|------|-----------------------|
| Sodium fluoride (CAS 7681-49-4) | STEL | 1 mg/m ³ |
| | TWA | 0,2 mg/m ³ |

Lithuania. OELs. Limit Values for Chemical Substances, General Requirements

| Material | Type | Value |
|---------------------------------|------|-----------------------|
| Sodium fluoride (CAS 7681-49-4) | TWA | 2,5 mg/m ³ |

Luxembourg. Binding Occupational exposure limit values (Annex I), Memorial A

| Material | Type | Value |
|---------------------------------|------|-----------------------|
| Sodium fluoride (CAS 7681-49-4) | TWA | 2,5 mg/m ³ |

Netherlands. OELs (binding)

| Material | Type | Value |
|---------------------------------|------|---------------------|
| Sodium fluoride (CAS 7681-49-4) | STEL | 2 mg/m ³ |

Norway. Administrative Norms for Contaminants in the Workplace

| Material | Type | Value |
|---------------------------------|------|-----------------------|
| Sodium fluoride (CAS 7681-49-4) | TLV | 0,5 mg/m ³ |

Portugal. OELs. Decree-Law n. 290/2001 (Journal of the Republic - 1 Series A, n.266)

| Material | Type | Value |
|---------------------------------|------|-----------------------|
| Sodium fluoride (CAS 7681-49-4) | TWA | 2,5 mg/m ³ |

Portugal. VLEs. Norm on occupational exposure to chemical agents (NP 1796)

| Material | Type | Value |
|---------------------------------|------|-----------------------|
| Sodium fluoride (CAS 7681-49-4) | TWA | 2,5 mg/m ³ |

Romania. OELs. Protection of workers from exposure to chemical agents at the workplace

| Material | Type | Value |
|---------------------------------|------|-----------------------|
| Sodium fluoride (CAS 7681-49-4) | TWA | 2,5 mg/m ³ |

Slovakia. OELs. Regulation No. 300/2007 concerning protection of health in work with chemical agents

| Material | Type | Value |
|---------------------------------|------|-----------------------|
| Sodium fluoride (CAS 7681-49-4) | TWA | 2,5 mg/m ³ |

Spain. Occupational Exposure Limits

| Material | Type | Value |
|---------------------------------|------|-----------------------|
| Sodium fluoride (CAS 7681-49-4) | TWA | 2,5 mg/m ³ |

Sweden. OELs. Work Environment Authority (AV), Occupational Exposure Limit Values (AFS 2015:7)

| Material | Type | Value |
|---------------------------------|------|---------------------|
| Sodium fluoride (CAS 7681-49-4) | TWA | 2 mg/m ³ |

UK. EH40 Workplace Exposure Limits (WELs)

| Material | Type | Value |
|---------------------------------|------|-----------------------|
| Sodium fluoride (CAS 7681-49-4) | TWA | 2,5 mg/m ³ |

EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, 2017/164/EU

| Material | Type | Value |
|---------------------------------|------|-----------------------|
| Sodium fluoride (CAS 7681-49-4) | TWA | 2,5 mg/m ³ |

Biological limit values**Croatia. BLV. Dangerous Substance Exposure Limit Values at Workplace, Annexes 4 (as amended)**

| Material | Value | Determinant | Specimen | Sampling Time |
|---------------------------------|-------------|-------------|---------------------|---------------|
| Sodium fluoride (CAS 7681-49-4) | 8 mg/g | Fluoride | Creatinine in urine | * |
| | 4 mg/g | Fluoride | Creatinine in urine | * |
| | 40 mmol/mol | Fluoride | Creatinine in urine | * |

Croatia. BLV. Dangerous Substance Exposure Limit Values at Workplace, Annexes 4 (as amended)

| Material | Value | Determinant | Specimen | Sampling Time |
|----------|-------------|-------------|---------------------|---------------|
| | 24 mmol/mol | Fluoride | Creatinine in urine | * |

* - For sampling details, please see the source document.

Czech Republic. Limit Values for Indicators of Biological Exposure Tests in Urine and Blood, Annex 2, Tables 1 and 2, Government Decree 432/2003 Sb.

| Material | Value | Determinant | Specimen | Sampling Time |
|---------------------------------|--------------|-------------|---------------------|---------------|
| Sodium fluoride (CAS 7681-49-4) | 60 µmol/mmol | Fluoride | Creatinine in urine | * |
| | 10 mg/g | Fluoride | Creatinine in urine | * |

* - For sampling details, please see the source document.

France. Biological indicators of exposure (IBE) (National Institute for Research and Security (INRS, ND 2065)

| Material | Value | Determinant | Specimen | Sampling Time |
|---------------------------------|---------|-------------|---------------------|---------------|
| Sodium fluoride (CAS 7681-49-4) | 3 mg/g | Fluorures | Creatinine in urine | * |
| | 10 mg/g | Fluorures | Creatinine in urine | * |

* - For sampling details, please see the source document.

Germany. TRGS 903, BAT List (Biological Limit Values)

| Material | Value | Determinant | Specimen | Sampling Time |
|---------------------------------|--------|-------------|---------------------|---------------|
| Sodium fluoride (CAS 7681-49-4) | 7 mg/g | Fluorid | Creatinine in urine | * |
| | 4 mg/g | Fluorid | Creatinine in urine | * |

* - For sampling details, please see the source document.

Hungary. Chemical Safety at Workplace Ordinance Joint Decree No. 25/2000 (Annex 2): Permissible limit values of biological exposure (effect) indices

| Material | Value | Determinant | Specimen | Sampling Time |
|---------------------------------|--------------|-------------|---------------------|---------------|
| Sodium fluoride (CAS 7681-49-4) | 7 mg/g | fluoride | Creatinine in urine | * |
| | 4 mg/g | fluoride | Creatinine in urine | * |
| | 42 µmol/mmol | fluoride | Creatinine in urine | * |
| | 24 µmol/mmol | fluoride | Creatinine in urine | * |

* - For sampling details, please see the source document.

Slovakia. BLVs (Biological Limit Value). Regulation no. 355/2006 concerning protection of workers exposed to chemical agents, Annex 2

| Material | Value | Determinant | Specimen | Sampling Time |
|---------------------------------|--------|-------------|---------------------|---------------|
| Sodium fluoride (CAS 7681-49-4) | 7 mg/g | Fluorides | Creatinine in urine | * |
| | 4 mg/g | Fluorides | Creatinine in urine | * |

* - For sampling details, please see the source document.

Spain. Biological Limit Values (VLBs), Occupational Exposure Limits for Chemical Agents, Table 4

| Material | Value | Determinant | Specimen | Sampling Time |
|---------------------------------|--------|-------------|----------|---------------|
| Sodium fluoride (CAS 7681-49-4) | 3 mg/l | Fluoruros | Urine | * |
| | 2 mg/l | Fluoruros | Urine | * |

* - For sampling details, please see the source document.

Switzerland. BAT-Werte (Biological Limit Values in the Workplace as per SUVA)

| Material | Value | Determinant | Specimen | Sampling Time |
|--|--|-------------|----------|---------------|
| Sodium fluoride (CAS 7681-49-4) | 4 mg/l | Fluorid | Urine | * |
| * - For sampling details, please see the source document. | | | | |
| Recommended monitoring procedures | Follow standard monitoring procedures. | | | |
| Derived no effect levels (DNELs) | Not available. | | | |
| Predicted no effect concentrations (PNECs) | Not available. | | | |
| 8.2. Exposure controls | | | | |
| Appropriate engineering controls | Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. If engineering measures are not sufficient to maintain concentrations of dust particulates below the OEL (occupational exposure limit), suitable respiratory protection must be worn. If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits. Provide eyewash station and safety shower. | | | |
| Individual protection measures, such as personal protective equipment | | | | |
| General information | Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment. Eye wash fountain is recommended. | | | |
| Eye/face protection | Wear eye/face protection. Wear safety glasses with side shields (or goggles). Face shield is recommended. | | | |
| Skin protection | | | | |
| - Hand protection | Wear appropriate chemical resistant gloves. | | | |
| - Other | Wear appropriate chemical resistant clothing. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment. Wear protective gloves. | | | |
| Respiratory protection | Wear respirator with dust filter. | | | |
| Thermal hazards | Wear appropriate thermal protective clothing, when necessary. | | | |
| Hygiene measures | Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. | | | |
| Environmental exposure controls | Contain spills and prevent releases and observe national regulations on emissions. Inform appropriate managerial or supervisory personnel of all environmental releases. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. Fume scrubbers, filters or engineering modifications to the process equipment may be necessary to reduce emissions to acceptable levels. | | | |
| SECTION 9: Physical and chemical properties | | | | |
| 9.1. Information on basic physical and chemical properties | | | | |
| Appearance | Powder. | | | |
| Physical state | Solid. | | | |
| Form | Powder. | | | |
| Colour | Not available. | | | |
| Odour | Not available. | | | |
| Odour threshold | Not available. | | | |
| pH | 7,4 Freshly prepared saturated solution | | | |
| Melting point/freezing point | 993 °C (1819,4 °F) | | | |
| Initial boiling point and boiling range | 1704 °C (3099,2 °F) | | | |
| Flash point | Not available. | | | |
| Evaporation rate | Not available. | | | |
| Flammability (solid, gas) | Not available. | | | |

Upper/lower flammability or explosive limits

Flammability limit - lower (%) Not available.

Flammability limit - upper (%) Not available.

Vapour pressure < 0,0000001 kPa (25 °C (77 °F))

Vapour density Not available.

Relative density Not available.

Solubility(ies)

Solubility (water) 40 g/l

Partition coefficient (n-octanol/water) Not available.

Auto-ignition temperature Not available.

Decomposition temperature Not available.

Viscosity Not available.

Explosive properties Not explosive.

Oxidising properties Not oxidising.

9.2. Other information

Density 2,78 g/cm³ estimated

Molecular formula F-Na

Molecular weight 42 g/mol

Specific gravity 2,78

SECTION 10: Stability and reactivity

10.1. Reactivity Not available.

10.2. Chemical stability Material is stable under normal conditions.

10.3. Possibility of hazardous reactions No dangerous reaction known under conditions of normal use.

10.4. Conditions to avoid Avoid temperatures exceeding the decomposition temperature. Contact with incompatible materials.

10.5. Incompatible materials Strong oxidising agents.

10.6. Hazardous decomposition products No hazardous decomposition products are known.

SECTION 11: Toxicological information

General information Occupational exposure to the substance or mixture may cause adverse effects.

Information on likely routes of exposure

Inhalation Dust may irritate respiratory system. Prolonged inhalation may be harmful.

Skin contact Causes skin irritation.

Eye contact Causes serious eye irritation.

Ingestion Toxic if swallowed. Toxic if swallowed.

Symptoms Nausea. Abdominal pain. Diarrhoea. Irritant effects. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Dusts may irritate the respiratory tract, skin and eyes. Skin irritation. May cause redness and pain.

11.1. Information on toxicological effects

Acute toxicity Toxic if swallowed. Toxic if swallowed.

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Causes serious eye irritation.

Respiratory sensitisation Due to partial or complete lack of data the classification is not possible.

Skin sensitisation Due to partial or complete lack of data the classification is not possible.

Germ cell mutagenicity Due to partial or complete lack of data the classification is not possible.

Carcinogenicity Due to partial or complete lack of data the classification is not possible.

Hungary. 26/2000 EüM Ordinance on protection against and preventing risk relating to exposure to carcinogens at work (as amended)

Not listed.

IARC Monographs. Overall Evaluation of Carcinogenicity

Sodium fluoride (CAS 7681-49-4)

3 Not classifiable as to carcinogenicity to humans.

| | |
|---|---|
| Reproductive toxicity | Due to partial or complete lack of data the classification is not possible. |
| Specific target organ toxicity - single exposure | Due to partial or complete lack of data the classification is not possible. |
| Specific target organ toxicity - repeated exposure | Due to partial or complete lack of data the classification is not possible. |
| Aspiration hazard | Due to partial or complete lack of data the classification is not possible. |
| Mixture versus substance information | No information available. |
| Other information | Not available. |

SECTION 12: Ecological information

12.1. Toxicity Harmful to aquatic life with long lasting effects. Accumulation in aquatic organisms is expected. Due to partial or complete lack of data the classification for hazardous to the aquatic environment, acute hazard, is not possible.

| Product | Species | Test Results |
|---------------------------------|---------|--|
| Sodium fluoride (CAS 7681-49-4) | | |
| Aquatic | | |
| <i>Acute</i> | | |
| Crustacea | EC50 | Water flea (Daphnia magna) 98 mg/l, 48 hours |
| Fish | LC50 | Rainbow trout, donaldson trout (Oncorhynchus mykiss) 83,7 - 138 mg/l, 96 hours |

* Estimates for product may be based on additional component data not shown.

| | |
|--|---|
| 12.2. Persistence and degradability | No data is available on the degradability of this product. |
| 12.3. Bioaccumulative potential | No data available. |
| Partition coefficient n-octanol/water (log Kow) | Not available. |
| Bioconcentration factor (BCF) | Not available. |
| 12.4. Mobility in soil | No data available. |
| 12.5. Results of PBT and vPvB assessment | This substance does not meet vPvB / PBT criteria of Regulation (EC) No 1907/2006, Annex XIII. |
| 12.6. Other adverse effects | No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component. |

SECTION 13: Disposal considerations

13.1. Waste treatment methods

| | |
|-------------------------------------|--|
| Residual waste | Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions). |
| Contaminated packaging | Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal. |
| EU waste code | The Waste code should be assigned in discussion between the user, the producer and the waste disposal company. |
| Disposal methods/information | Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations. |
| Special precautions | Dispose in accordance with all applicable regulations. |

SECTION 14: Transport information

ADR

| | |
|--------------------------------------|------------------------|
| 14.1. UN number | UN1690 |
| 14.2. UN proper shipping name | Sodium fluoride, solid |

14.3. Transport hazard class(es)

Class 6.1(PGIII)
Subsidiary risk -
Label(s) 6.1
Hazard No. (ADR) Not available.
Tunnel restriction code Not available.

14.4. Packing group III

14.5. Environmental hazards No.

14.6. Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

RID

14.1. UN number UN1690

14.2. UN proper shipping name SODIUM FLUORIDE, SOLID

14.3. Transport hazard class(es)

Class 6.1(PGIII)
Subsidiary risk -
Label(s) 6.1

14.4. Packing group III

14.5. Environmental hazards No.

14.6. Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

ADN

14.1. UN number UN1690

14.2. UN proper shipping name Sodium fluoride, solid

14.3. Transport hazard class(es)

Class 6.1(PGIII)
Subsidiary risk -
Label(s) 6.1

14.4. Packing group III

14.5. Environmental hazards No.

14.6. Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IATA

14.1. UN number UN1690

14.2. UN proper shipping name Sodium fluoride, solid

14.3. Transport hazard class(es)

Class 6.1
Subsidiary risk -

14.4. Packing group III

14.5. Environmental hazards No.

ERG Code 6L

14.6. Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Other information

Passenger and cargo aircraft Allowed with restrictions.

Cargo aircraft only Allowed with restrictions.

IMDG

14.1. UN number UN1690

14.2. UN proper shipping name SODIUM FLUORIDE, SOLID

14.3. Transport hazard class(es)

Class 6.1
Subsidiary risk -

14.4. Packing group III

14.5. Environmental hazards

Marine pollutant No.

EmS F-A, S-A

14.6. Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

ADN; ADR; RID



IATA; IMDG



SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended

Not listed.

Regulation (EU) 2019/1021 On persistent organic pollutants (recast), as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended

Sodium fluoride (CAS 7681-49-4)

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA

Not listed.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended

Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended

Not listed.

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.

Not listed.

Other EU regulations

Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended

Not listed.

Other regulations

The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.

National regulations

Follow national regulation for work with chemical agents.

Young people under 18 years old are not allowed to work with this product according to EU Directive 94/33/EC on the protection of young people at work, as amended. Follow national regulation for work with chemical agents in accordance with Directive 98/24/EC, as amended.

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

List of abbreviations

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.

AGW: Occupational threshold limit value (Arbeitsplatzgrenzwert – Germany).

CAS: Chemical Abstract Service.

CEN: European Committee for Standardization.

IATA: International Air Transport Association.

IBC: Intermediate Bulk Container.

IMDG: International Maritime Dangerous Goods.

MAC: Maximum Allowed Concentration.

MARPOL: International Convention for the Prevention of Pollution from Ships.

PBT: Persistent, bioaccumulative, toxic.

RID: Regulations concerning the International Carriage of Dangerous Goods by Rail.

STEL: Short term exposure limit.

TLV: Threshold Limit Value.

TWA: Time Weighted Average.

VLE: Exposure Limit Value.

VME: Exposure Average Value.

vPvB: Very persistent and very bioaccumulative.

References

Not available.

Information on evaluation method leading to the classification of mixture

Not applicable.

Training information

Follow training instructions when handling this material.

Disclaimer

Materion Advanced Chemicals Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. This document has been prepared using data from sources considered to be technically reliable and the information is believed to be correct. Materion makes no warranties, expressed or implied, as to the accuracy of the information contained herein. Materion cannot anticipate all conditions under which this information and its products may be used and the actual conditions of use are beyond its control. The user is responsible to evaluate all available information when using this product for any particular use and to comply with all Federal, State, Provincial and Local laws, statutes and regulations.