



SAFETY DATA SHEET

MATERION

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

1.1. Product identifier

Trade name or designation of the mixture Copper Sodium Fluoride Targets
Registration number -
Document number G85
Synonyms None.
Issue date 21-April-2022
Version number 01

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

Identified uses Manufacture of computer, electronic and optical products, electrical equipment
Scientific research and development
Other: Manufacture of medical and defense equipment

1.3. Details of the supplier of the safety data sheet

Supplier

Company name Materion Advanced Materials
Address 6070 Parkland Boulevard
Mayfield Heights, OH 44124
United States
Division
Telephone 1.216.383.4019
e-mail ehs@materion.com
Contact person Theodore Knudson

1.4. Emergency telephone number See Section 16.

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

Uses advised against Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Consumer uses: Private households (= general public = consumers)

1.3. Details of the supplier of the safety data sheet

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1.4. Emergency telephone number See Section 16.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The mixture 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 4 | H302 - Harmful if swallowed. |
| Acute toxicity, inhalation | Category 3 | H331 - Toxic if inhaled. |
| Serious eye damage/eye irritation | Category 2 | H319 - Causes serious eye irritation. |
| Specific target organ toxicity - single exposure | Category 3 respiratory tract irritation | H335 - May cause respiratory irritation. |

Hazard summary

Toxic if inhaled. Harmful if swallowed. Causes serious eye irritation. May cause irritation to the respiratory system. 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: Copper, Sodium fluoride

Hazard pictograms



Signal word Danger

Hazard statements

H302 Harmful if swallowed.
H319 Causes serious eye irritation.
H331 Toxic if inhaled.
H335 May cause respiratory irritation.

Precautionary statements

Prevention

P261 Avoid breathing dust.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear eye protection/face protection.

Response

P301 + P312 IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell.
P330 Rinse mouth.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P311 Call a POISON CENTRE or doctor/physician.
P337 + P313 If eye irritation persists: Get medical advice/attention.

Storage

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

Disposal

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

Supplemental label information

For further information, please contact the Product Stewardship Department at +1.216.383.4019.

2.3. Other hazards

This mixture does not contain substances assessed to be vPvB / PBT according to Regulation (EC) No 1907/2006, Annex XIII.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

General information

| Chemical name | % | CAS-No. / EC No. | REACH Registration No. | Index No. | Notes |
|--|---------|------------------------|------------------------|--------------|-------|
| Copper | 95 - 99 | 7440-50-8 231-159-6 | 01-2119480154-42-0080 | - | |
| Classification: - | | | | | |
| Sodium fluoride | 1 - 5 | 7681-49-4 231-667-8 | - | 009-004-00-7 | # |
| Classification: Acute Tox. 3;H301, Skin Irrit. 2;H315 | | | | | |

SECTION 4: First aid measures

General information

If you feel unwell, seek medical advice (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.

4.1. Description of first aid measures

| | |
|---------------------|--|
| Inhalation | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a poison center or doctor/physician. |
| Skin contact | Wash off with soap and water. Get medical attention if irritation develops and persists. |
| 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 | Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical advice/attention if you feel unwell. |

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

Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation.

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 Powder. Dry sand.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

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 Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Special firefighting procedures Use water spray to cool unopened containers.

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 Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of dust. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. 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 discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Stop the flow of material, if this is without risk.

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. Do not taste or swallow. Avoid breathing dust. Avoid contact with eyes. Avoid prolonged exposure. When using, do not eat, drink or smoke. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.

7.2. Conditions for safe storage, including any incompatibilities

Store locked up. 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

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

| Components | Type | Value | Form |
|---------------------------------|-----------------------|-----------------------|-------|
| Copper (CAS 7440-50-8) | VLE | 2 mg/m ³ | Dust. |
| Regulatory status: | Indicative limit (VL) | | |
| | VME | 1 mg/m ³ | Dust. |
| Regulatory status: | Indicative limit (VL) | | |
| | | 0,2 mg/m ³ | Fume. |
| Regulatory status: | Indicative limit (VL) | | |
| Sodium fluoride (CAS 7681-49-4) | VME | 2 mg/m ³ | |
| Regulatory status: | Indicative limit (VL) | | |

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

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

Biological limit values

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

| Components | 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.

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. Provide eyewash station.

Individual protection measures, such as personal protective equipment

General information

Use personal protective equipment as required. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

Eye/face protection

Wear safety glasses with side shields (or goggles).

Skin protection

- Hand protection

Wear appropriate chemical resistant gloves.

- Other

Wear suitable protective clothing. Use of an impervious apron is recommended.

| | |
|--|--|
| Respiratory protection | In case of insufficient ventilation, wear suitable respiratory equipment. Chemical respirator with organic vapour cartridge. |
| 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 | 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

| | |
|--|--|
| Physical state | Solid. |
| Form | Solid. |
| Colour | Copper. |
| Odour | None. |
| Odour threshold | Not applicable. |
| pH | Not applicable. |
| Melting point/freezing point | 993 °C (1819,4 °F) estimated / Not applicable. |
| Initial boiling point and boiling range | Not applicable. |
| Flash point | Not applicable. |
| Evaporation rate | Not applicable. |
| Flammability (solid, gas) | None known. |

Upper/lower flammability or explosive limits

| | |
|---|-----------------|
| Flammability limit - lower (%) | Not applicable. |
| Flammability limit - lower (%) temperature | Not applicable. |
| Flammability limit - upper (%) | Not applicable. |
| Flammability limit - upper (%) temperature | Not applicable. |
| Explosive limit - lower (%) | Not applicable. |
| Explosive limit - lower (%) temperature | Not applicable. |
| Explosive limit – upper (%) | Not applicable. |
| Explosive limit - upper (%) temperature | Not applicable. |

| | |
|--|-----------------|
| Vapour pressure | Not applicable. |
| Vapour density | Not applicable. |
| Relative density | Not applicable. |
| Solubility(ies) | |
| Solubility (water) | Insoluble. |
| Partition coefficient (n-octanol/water) | Not applicable |
| Auto-ignition temperature | Not applicable. |
| Decomposition temperature | Not applicable. |
| Viscosity | Not applicable. |
| Explosive properties | Not explosive. |
| Oxidising properties | Not oxidising. |

9.2. Other information

| | |
|----------------|----------------------|
| Density | 8,64 g/cm3 estimated |
|----------------|----------------------|

SECTION 10: Stability and reactivity

| | |
|---|--|
| 10.1. Reactivity | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| 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 | Toxic if inhaled. |
| Skin contact | No adverse effects due to skin contact are expected. |
| Eye contact | Causes serious eye irritation. |
| Ingestion | Harmful if swallowed. |

Symptoms Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation.

11.1. Information on toxicological effects

| | |
|--|---|
| Acute toxicity | Toxic if inhaled. Harmful if swallowed. |
| Skin corrosion/irritation | Due to partial or complete lack of data the classification is not possible. |
| 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. |

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 | May cause respiratory irritation. |
| 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 Based on available data, the classification criteria are not met for hazardous to the aquatic environment.

| Product | | Species | Test Results |
|--------------------------------|------|--|---------------------------------|
| Copper Sodium Fluoride Targets | | | |
| Aquatic | | | |
| <i>Acute</i> | | | |
| Crustacea | EC50 | Daphnia | 1960 mg/l, 48 hours estimated |
| Fish | LC50 | Fish | 0,0328 mg/l, 96 hours estimated |
| Components | | Species | Test Results |
| Copper (CAS 7440-50-8) | | | |
| Aquatic | | | |
| <i>Acute</i> | | | |
| Crustacea | EC50 | Blue crab (<i>Callinectes sapidus</i>) | 0,0031 mg/l |

| Components | Species | Test Results |
|---------------------------------|---------|--|
| Fish | LC50 | Fathead minnow (<i>Pimephales promelas</i>) 0,0219 - 0,0446 mg/l, 96 hours |
| Sodium fluoride (CAS 7681-49-4) | | |
| Aquatic | | |
| <i>Acute</i> | | |
| Crustacea | EC50 | Water flea (<i>Daphnia magna</i>) 98 mg/l, 48 hours |
| Fish | LC50 | Rainbow trout, donaldson trout (Oncorhynchus mykiss) 83,7 - 138 mg/l, 96 hours |

| | |
|--|---|
| 12.2. Persistence and degradability | No data is available on the degradability of any ingredients in the mixture. |
| 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 mixture does not contain substances assessed to be vPvB / PBT according to 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. 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. - 14.6.: Not regulated as dangerous goods.

RID

14.1. - 14.6.: Not regulated as dangerous goods.

ADN

14.1. - 14.6.: Not regulated as dangerous goods.

IATA

14.1. - 14.6.: Not regulated as dangerous goods.

IMDG

14.1. - 14.6.: Not regulated as dangerous goods.

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

Copper (CAS 7440-50-8)

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

Copper (CAS 7440-50-8)

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

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.
CAS: Chemical Abstract Service.
CEN: European Committee for Standardization.
IATA: International Air Transport Association.
IBC: Intermediate Bulk Container.
IMDG: International Maritime Dangerous Goods.
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.
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

The classification for health and environmental hazards is derived by a combination of calculator methods and test data, if available.

Training information

Follow training instructions when handling this material.

Further information

Transportation Emergency
Call Chemtrec at:
US: 800.424.9300
International: 703.741.5970
Spain: 900.868.538
Switzerland: 0800.564.402
Chemtrec's toll free, mobile-enabled number in Germany – 0800 1817059
South Korea Toll-free Number – 080-880-0468

Disclaimer

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