



# SAFETY DATA SHEET

**MATERION**

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

### 1.1. Product identifier

**Name of the substance** Zinc sulfide  
**Identification number** 215-251-3 (EC number)  
**Registration number** -  
**Document number** 2DW  
**Synonyms** Zinc sulphide  
**Materion Code** 2DW  
**Issue date** 08-August-2013  
**Revision date** 17-May-2019

### 1.3. Details of the supplier of the safety data sheet

#### Supplier

**Company name** Materion Advanced Chemicals Inc.  
**Address** 407 N. 13th Street  
1316 W. St. Paul Avenue  
Milwaukee, WI 53233  
United States  
**Division** Milwaukee  
**Telephone** 414.212.0257  
**e-mail** advancedmaterials@materion.com  
**Contact person** Laura Hamilton

### 1.4. Emergency telephone number

**Supersedes date** 15-January-2018  
**Version number** 07

### 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

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

**Hazard summary** Not regarded as a health hazard under current legislation.

### 2.2. Label elements

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

**Contains:** Zinc sulfide  
**Hazard pictograms** None.  
**Signal word** None.  
**Hazard statements** The substance does not meet the criteria for classification.

#### Precautionary statements

**Prevention** Observe good industrial hygiene practices.  
**Response** Wash hands after handling.  
**Storage** Store away from incompatible materials.  
**Disposal**  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**Supplemental label information** None.

**2.3. Other hazards** None known.

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

## General information

| Chemical name          | %   | CAS-No. / EC No.       | REACH Registration No. | Index No. | Notes |
|------------------------|-----|------------------------|------------------------|-----------|-------|
| Zinc sulfide           | 100 | 1314-98-3<br>215-251-3 | -                      | -         |       |
| <b>Classification:</b> | -   |                        |                        |           |       |

## List of abbreviations and symbols that may be used above

CLP: Regulation No. 1272/2008.

DSD: Directive 67/548/EEC.

M: M-factor

vPvB: very persistent and very bioaccumulative substance.

PBT: persistent, bioaccumulative and toxic substance.

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

## SECTION 4: First aid measures

### General information

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. If you feel unwell, seek medical advice (show the label where possible). Show this safety data sheet to the doctor in attendance.

### 4.1. Description of first aid measures

#### Inhalation

If dust from the material is inhaled, remove the affected person immediately to fresh air. Call a physician if symptoms develop or persist.

#### Skin contact

Rinse with water. Call a POISON CENTRE or doctor/physician if you feel unwell.

#### Eye contact

Rinse with water. Get medical attention if irritation develops and persists.

#### Ingestion

Call a POISON CENTRE or doctor/physician if you feel unwell. Rinse mouth.

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

Not available.

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

Provide general supportive measures and treat symptomatically. Treat symptomatically. 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.

#### Unsuitable extinguishing media

Do not use a solid water stream as it may scatter and spread fire.

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

Not available.

### 5.3. Advice for firefighters

#### Special protective equipment for firefighters

Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Structural firefighters protective clothing will only provide limited protection. Wear suitable protective equipment.

#### Special firefighting procedures

In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.

### Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials. Move container from fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. In the event of fire and/or explosion do not breathe fumes. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### For non-emergency personnel

Local authorities should be advised if significant spillages cannot be contained. Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate personal protective equipment. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid inhalation of dust from the spilled material. Ventilate closed spaces before entering them.

#### For emergency responders

Keep unnecessary personnel away.

## 6.2. Environmental precautions

Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. 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

Stop the flow of material, if this is without risk. Collect spillage. Dike far ahead of spill for later disposal. If sweeping of a contaminated area is necessary use a dust suppressant agent which does not react with the product. Sweep up or vacuum up spillage and collect in suitable container for disposal. Collect dust using a vacuum cleaner equipped with HEPA filter. Avoid the generation of dusts during clean-up. Prevent product from entering drains. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.

## 6.4. Reference to other sections

Not available.

# SECTION 7: Handling and storage

## 7.1. Precautions for safe handling

DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Do not smoke. Avoid dust formation. Guard against dust accumulation of this material. Provide appropriate exhaust ventilation at places where dust is formed. All equipment used when handling the product must be grounded. Do not breathe dust from this material. Avoid contact with skin and eyes. Avoid prolonged exposure. In case of insufficient ventilation, wear suitable respiratory equipment. Practice good housekeeping. Wash contaminated clothing before reuse. Handle and open container with care. Avoid release to the environment. Do not empty into drains.

## 7.2. Conditions for safe storage, including any incompatibilities

The pressure in sealed containers can increase under the influence of heat. Keep away from heat and sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Keep container tightly closed. Store in a cool, dry place out of direct sunlight. Store in a well-ventilated place. Avoid dust formation. Guard against dust accumulation of this material. Keep out of the reach of children. Use care in handling/storage.

## 7.3. Specific end use(s)

Not available.

# SECTION 8: Exposure controls/personal protection

## 8.1. Control parameters

### Occupational exposure limits

#### Germany. DFG MAK List (advisory OELs). Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (DFG)

| Material                     | Type | Value                 | Form                 |
|------------------------------|------|-----------------------|----------------------|
| Zinc sulfide (CAS 1314-98-3) | TWA  | 2 mg/m <sup>3</sup>   | Inhalable fraction.  |
|                              |      | 0,1 mg/m <sup>3</sup> | Respirable fraction. |

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

| Material                     | Type | Value               |
|------------------------------|------|---------------------|
| Zinc sulfide (CAS 1314-98-3) | TWA  | 5 mg/m <sup>3</sup> |

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

| Material                     | Type | Value               |
|------------------------------|------|---------------------|
| Zinc sulfide (CAS 1314-98-3) | TWA  | 5 mg/m <sup>3</sup> |

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

| Material                     | Type | Value                 | Form                 |
|------------------------------|------|-----------------------|----------------------|
| Zinc sulfide (CAS 1314-98-3) | TWA  | 2 mg/m <sup>3</sup>   | Inhalable fraction.  |
|                              |      | 0,1 mg/m <sup>3</sup> | Respirable fraction. |

## Biological limit values

No biological exposure limits noted for the ingredient(s).

## Recommended monitoring procedures

Follow standard monitoring procedures.

## Derived no effect levels (DNELs)

Not available.

## Predicted no effect concentrations (PNECs)

Not available.

## Exposure guidelines

No exposure standards allocated.

## 8.2. Exposure controls

|  |   |
|--|---|
| <b>Appropriate engineering controls</b>                                      | Ventilation should be sufficient to effectively remove and prevent buildup of any dusts or fumes that may be generated during handling or thermal processing. If engineering measures are not sufficient to maintain concentrations of dust particulates below the OEL (occupational exposure limit), suitable respiratory protection must be worn. |
| <b>Individual protection measures, such as personal protective equipment</b> |   |
| <b>General information</b>   | Not normally needed.  |
| <b>Eye/face protection</b>   | Wear eye/face protection. Use tight fitting goggles if dust is generated. Eye wash fountain is recommended.   |
| <b>Skin protection</b>   |   |
| - Hand protection  | Not normally needed.  |
| - Other  | Wear suitable protective clothing. Wear protective gloves. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.  |
| <b>Respiratory protection</b>  | Wear respirator with dust filter. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits.   |
| <b>Thermal hazards</b>   | Not available.  |
| <b>Hygiene measures</b>  | When using do not smoke. Do not breathe dust. Avoid contact with eyes. Avoid contact with skin. Wash hands before breaks and immediately after handling the product. Handle in accordance with good industrial hygiene and safety practices.  |
| <b>Environmental exposure controls</b>                                       | Environmental manager must be informed of all major releases.   |

## SECTION 9: Physical and chemical properties

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

|   |  |
|---|--|
| <b>Appearance</b>                                   | Powder.  |
| <b>Physical state</b>                               | Solid.   |
| <b>Form</b>   | Solid. Powder.                                   |
| <b>Colour</b>                                       | Not available.                                   |
| <b>Odour</b>  | Not available.                                   |
| <b>Odour threshold</b>                              | Not available.                                   |
| <b>pH</b>   | Not available.                                   |
| <b>Melting point/freezing point</b>                 | 1700 °C (3092 °F)                                |
| <b>Initial boiling point and boiling range</b>      | Not available.                                   |
| <b>Flash point</b>                                  | Not available.                                   |
| <b>Evaporation rate</b>                             | Not available.                                   |
| <b>Flammability (solid, gas)</b>                    | Flammable solid.                                 |
| <b>Upper/lower flammability or explosive limits</b> |  |
| <b>Flammability limit - lower (%)</b>               | Not available.                                   |
| <b>Flammability limit - upper (%)</b>               | Not available.                                   |
| <b>Vapour pressure</b>                              | < 0,0000001 kPa (25 °C (77 °F))                  |
| <b>Vapour density</b>                               | Not available.                                   |
| <b>Relative density</b>                             | Not available.                                   |
| <b>Solubility(ies)</b>                              |  |
| <b>Solubility (water)</b>                           | Not available.                                   |
| <b>Partition coefficient (n-octanol/water)</b>      | Not available.                                   |
| <b>Auto-ignition temperature</b>                    | Not available.                                   |
| <b>Decomposition temperature</b>                    | Not available.                                   |
| <b>Viscosity</b>                                    | Not available.                                   |
| <b>Explosive properties</b>                         | Not available.                                   |
| <b>Oxidising properties</b>                         | Not available.                                   |
| <b>9.2. Other information</b>                       |  |
| <b>Density</b>                                      | 3,99 g/cm <sup>3</sup><br>4,10 g/cm <sup>3</sup> |

|                          |             |
|--------------------------|-------------|
| <b>Molecular formula</b> | S-Zn        |
| <b>Molecular weight</b>  | 97,46 g/mol |
| <b>Specific gravity</b>  | 3,99<br>4,1 |

## SECTION 10: Stability and reactivity

|   |   |
|---|---|
| <b>10.1. Reactivity</b>                         | Not available.  |
| <b>10.2. Chemical stability</b>                 | Material is stable under normal conditions.                 |
| <b>10.3. Possibility of hazardous reactions</b> | No dangerous reaction known under conditions of normal use. |
| <b>10.4. Conditions to avoid</b>                | Avoid spread of dust. Heat, flames and sparks.              |
| <b>10.5. Incompatible materials</b>             | None known.   |
| <b>10.6. Hazardous decomposition products</b>   | 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

|                     |   |
|---------------------|---|
| <b>Inhalation</b>   | Inhalation of dusts may cause respiratory irritation.             |
| <b>Skin contact</b> | May be harmful in contact with skin.                              |
| <b>Eye contact</b>  | Due to lack of data the classification is not possible.           |
| <b>Ingestion</b>    | Based on available data, the classification criteria are not met. |

**Symptoms** Not available.

### 11.1. Information on toxicological effects

**Acute toxicity** May be harmful in contact with skin.

| Product                      | Species | Test Results  |
|------------------------------|---------|---------------|
| Zinc sulfide (CAS 1314-98-3) |         |               |
| <b>Acute</b>                 |         |               |
| <b>Dermal</b>                |         |               |
| LD50                         | Rat     | > 2 g/kg      |
| <b>Oral</b>                  |         |               |
| LD50                         | Rat     | > 15000 mg/kg |

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

**Skin corrosion/irritation** Due to lack of data the classification is not possible.

**Serious eye damage/eye irritation** Dust in the eyes will cause irritation.

**Respiratory sensitisation** Due to lack of data the classification is not possible.

**Skin sensitisation** Due to lack of data the classification is not possible.

**Germ cell mutagenicity** Due to lack of data the classification is not possible.

**Carcinogenicity** This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

**Hungary. 26/2000 EüM Ordinance on protection against and preventing risk relating to exposure to carcinogens at work (as amended)**  
Not listed.

**Reproductive toxicity** Due to lack of data the classification is not possible.

**Specific target organ toxicity - single exposure** Due to lack of data the classification is not possible.

**Specific target organ toxicity - repeated exposure** Due to lack of data the classification is not possible.

**Aspiration hazard** Due to lack of data the classification is not possible.

**Mixture versus substance information** Not available.

**Other information** This product has no known adverse effect on human health.

## SECTION 12: Ecological information

**12.1. Toxicity** Very toxic to aquatic life.

| Product                      | Species | Test Results   |
|------------------------------|---------|--|
| Zinc sulfide (CAS 1314-98-3) |         |  |
| <b>Aquatic</b>               |         |  |
| Fish                         | LC50    | Fathead minnow (Pimephales promelas) 1826 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** Not available.

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

**Bioconcentration factor (BCF)** Not available.

**12.4. Mobility in soil** Not available.

**12.5. Results of PBT and vPvB assessment** Not a PBT or vPvB substance or mixture.

**12.6. Other adverse effects** Not available.

#### 12.7. Additional information

##### Estonia Dangerous substances in groundwater Data

|                              |                     |
|------------------------------|---------------------|
| Zinc sulfide (CAS 1314-98-3) | Zinc (Zn) 50 ug/l   |
|                              | Zinc (Zn) 5000 ug/l |

##### Estonia Dangerous substances in soil Data

|                              |                      |
|------------------------------|----------------------|
| Zinc sulfide (CAS 1314-98-3) | Zinc (Zn) 1000 mg/kg |
|                              | Zinc (Zn) 200 mg/kg  |
|                              | Zinc (Zn) 500 mg/kg  |

## 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** Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

**EU waste code** The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.

**Disposal methods/information** Contract with a disposal operator licensed by the Law on Disposal and Cleaning. 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. Dispose of contents/container (in accordance with related regulations). Collect entire waste and then charge to a licensed industrial waste management professional with manifests for industrial waste.

## 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 (EC) No. 850/2004 On persistent organic pollutants, Annex I 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**

Zinc sulfide (CAS 1314-98-3)

**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 EC directives or respective national laws. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006. The product does not need to be labelled in accordance with EC directives or respective national laws.

#### **National regulations**

Not available.

#### **15.2. Chemical safety assessment**

No Chemical Safety Assessment has been carried out.

### **SECTION 16: Other information**

#### **List of abbreviations**

Not available.

## References

ACGIH  
EPA: AQUIRE database  
NLM: Hazardous Substances Data Base  
US. IARC Monographs on Occupational Exposures to Chemical Agents  
Korea. Accidental Release Prevention Substances (Presidential Decree of Toxic Chemical Control Law, Executive Order No. 19203)  
Korea. Dangerous Substances Threshold Quantity (Presidential Decree of Dangerous Substances Safety Management Act No. 18406, Schedule 1)  
Korea. Harmful Substances Prohibited from Manufacturing (Presidential Decree on the Industrial Safety and Health Act (No. 13053), Article 29)  
Korea. Harmful Substances Requiring Permission for Manufacture or Use (Presidential Decree on the Industrial Safety and Health Act (No. 13053), Article 30)  
Korea. OELs. Regulation for Permitted Concentration of Hazardous Substances (Ministry of Labor (MOL) Public Notice No. 1986-45, as amended)  
Korea. Prohibited Chemical Substances (TCCL Article 11)  
Korea. Regulated volatile organic compounds (VOCs) (MOE Notice No. 2001-36, March 8, 2001, as amended)  
Korea. Restricted Chemical Substances (TCCL Article 11)  
Korea. Toxic Chemical Control Law (TCCL), Existing Chemicals Inventory (KECI)  
Korea. Toxic Chemical Control Law (TCCL), pre-1997 List  
Korea. Toxic Chemicals (TCCL Article 10)  
Korea. Toxic Release Inventory (TRI) Chemicals (TCCL Article 14)  
Taiwan. Dangerous Materials (Rules on Hazard Communication of Dangerous Materials and Toxic Materials)  
Taiwan. Industrial Precursor Chemicals (Categories and Regulations Governing Inspection and Declaration of Industrial Precursor Chemicals, MOEA Decree No. 87, as amended)  
Taiwan. OELs. (Standards on Workplace Atmosphere of Dangerous and Hazardous Materials)  
Taiwan. Toxic Chemical Substances (TCS) (List of Toxic Chemical Substances announced by the Environmental Protection Administration)  
Taiwan. Toxic Materials (Rules on Hazard Communication of Dangerous Materials and Toxic Materials)  
HSDB® - Hazardous Substances Data Bank  
IARC Monographs. Overall Evaluation of Carcinogenicity  
National Toxicology Program (NTP) Report on Carcinogens  
ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices  
Japan Society for Occupational Health, Recommendation of Occupational Exposure Limits  
JJIS Z 7250: 2010 Safety data sheet for chemical products-Content and order of sections  
JIS Z 7251: 2010 Labeling of chemicals based on GHS

## Training information

Not available.

## Disclaimer

Additional information is given in the Material Safety Data Sheet.

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