



# SAFETY DATA SHEET

**MATERION**

## 1. Identification

**Product identifier** Cadmium sulfide (CdS) powder

**Other means of identification**

SDS number 1FA

Materion Code 1FA

CAS number 1306-23-6

Synonyms CADMIUMSULFIDE \* Cadmium sulfide (CdS)

### Manufacturer/Importer/Supplier/Distributor information

#### Manufacturer

**Company name** Materion Advanced Chemicals Inc.

**Address** 407 N 13th Street  
1316 W. St. Paul Avenue  
Milwaukee, WI 53233  
United States

**Telephone** 414.212.0290

**E-mail** advancedmaterials@materion.com

**Contact person** Laura Hamilton

**Emergency phone number** Chemtrec 800.424.9300

## 2. Hazard(s) identification

**Physical hazards** Not classified.

**Health hazards**

|   |             |
|---|-------------|
| Acute toxicity, oral                              | Category 3  |
| Germ cell mutagenicity                            | Category 2  |
| Carcinogenicity                                   | Category 1A |
| Reproductive toxicity                             | Category 2  |
| Specific target organ toxicity, repeated exposure | Category 1  |

**Environmental hazards**

|  |            |
|--|------------|
| Hazardous to the aquatic environment, acute hazard     | Category 1 |
| Hazardous to the aquatic environment, long-term hazard | Category 1 |

**OSHA defined hazards** Not classified.

#### Label elements



**Signal word** Danger

**Hazard statement** Toxic if swallowed. Suspected of damaging fertility. Suspected of damaging the unborn child. Harmful to aquatic life with long lasting effects. May cause cancer. Suspected of causing genetic defects.

## Precautionary statement

### Prevention

Obtain special instructions before use. Wear protective gloves/protective clothing/eye protection/face protection. Avoid release to the environment. Do not eat, drink or smoke when using this product. Do not breathe dust/fume/gas/mist/vapors/spray. Wash thoroughly after handling. Do not breathe dust. Do not handle until all safety precautions have been read and understood. Before use, obtain special instructions and learn how to work with these products safely.

### Response

IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth. IF ON SKIN: Wash with plenty of water. If exposed or concerned: Get medical advice/attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Call a POISON CENTER/doctor. Collect spillage. Take off contaminated clothing and wash before reuse.

### Storage

Store in a well-ventilated place. Keep container tightly closed.

### Disposal

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

### Hazard(s) not otherwise classified (HNOC)

None known.

### Supplemental information

100% of the mixture consists of component(s) of unknown acute dermal toxicity. For further information, please contact the Product Stewardship Department at +1.800.862.4118.

## 3. Composition/information on ingredients

### Substances

| Chemical name                | Common name and synonyms                | CAS number | %   |
|------------------------------|---|------------|-----|
| Cadmium sulfide (CdS) powder | CADMIUMSULFIDE<br>Cadmium sulfide (CdS) | 1306-23-6  | 100 |

## 4. First-aid measures

### Inhalation

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

### Skin contact

Wash off with soap and water. Get medical attention if irritation develops and persists.

### Eye contact

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

### Ingestion

Call a physician or poison control center 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.

### Most important symptoms/effects, acute and delayed

Prolonged exposure may cause chronic effects.

### Indication of 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.

### General information

IF exposed or concerned: Get medical advice/attention. 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.

## 5. Fire-fighting measures

### Suitable extinguishing media

Water fog. Foam. Dry chemical powder. Carbon dioxide (CO<sub>2</sub>).

### Unsuitable extinguishing media

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

### Specific hazards arising from the chemical

During fire, gases hazardous to health may be formed.

### Special protective equipment and precautions for firefighters

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

### Fire fighting equipment/instructions

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.  
**General fire hazards** No unusual fire or explosion hazards noted.

## 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures** Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Local authorities should be advised if significant spillages cannot be contained. Ensure adequate ventilation. Ventilate closed spaces before entering them. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid generation and spreading of dust. Avoid inhalation of dust.

**Methods and materials for containment and cleaning up**

Prevent product from entering drains.

Large Spills: Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. Put material in suitable, covered, labeled containers.

**Environmental precautions**

Avoid release to the environment. Refer to special instructions/safety data sheets. Avoid discharge into drains, water courses or onto the ground. Do not contaminate water. Prevent further leakage or spillage if safe to do so. Contact local authorities in case of spillage to drain/aquatic environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Avoid release to the environment.

## 7. Handling and storage

**Precautions for safe handling**

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not taste or swallow. Avoid prolonged exposure. When using, do not eat, drink or smoke. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.

**Conditions for safe storage, including any incompatibilities**

Store locked up. Store in original tightly closed container.

## 8. Exposure controls/personal protection

**Occupational exposure limits**

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

| Material                                     | Type | Value       |
|--|------|-------------|
| Cadmium sulfide (CdS) powder (CAS 1306-23-6) | TWA  | 0.005 mg/m3 |

**US. ACGIH Threshold Limit Values**

| Material                                     | Type | Value       | Form                 |
|--|------|-------------|----------------------|
| Cadmium sulfide (CdS) powder (CAS 1306-23-6) | TWA  | 0.01 mg/m3  |                      |
|  |      | 0.002 mg/m3 | Respirable fraction. |

**Biological limit values**

**ACGIH Biological Exposure Indices**

| Material                                     | Value  | Determinant | Specimen            | Sampling Time |
|--|--------|-------------|---------------------|---------------|
| Cadmium sulfide (CdS) powder (CAS 1306-23-6) | 5 µg/g | Cadmium     | Creatinine in urine | *             |
|  | 5 µg/l | Cadmium     | Blood               | *             |

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

|  |   |
|--|---|
| <b>Appropriate engineering controls</b>                                      | Good general ventilation (typically 10 air changes per hour) 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. |
| <b>Individual protection measures, such as personal protective equipment</b> |   |
| <b>Eye/face protection</b>   | If contact is likely, safety glasses with side shields are recommended.   |
| <b>Skin protection</b>   |   |
| <b>Hand protection</b>   | Wear appropriate chemical resistant gloves.   |
| <b>Other</b>   | Use of an impervious apron is recommended.  |
| <b>Respiratory protection</b>  | In case of insufficient ventilation, wear suitable respiratory equipment.   |
| <b>Thermal hazards</b>   | Wear appropriate thermal protective clothing, when necessary.   |
| <b>General hygiene considerations</b>  | Observe any medical surveillance requirements. Wash hands after handling and before eating. Keep away from food and drink.  |

## 9. Physical and chemical properties

|   |  |
|---|--|
| <b>Appearance</b>                                   | Solid.   |
| <b>Physical state</b>                               | Solid.   |
| <b>Form</b>   | Powder   |
| <b>Color</b>  | Not available.                                   |
| <b>Odor</b>   | Not available.                                   |
| <b>Odor threshold</b>                               | Not available.                                   |
| <b>pH</b>   | Not available.                                   |
| <b>Melting point/freezing point</b>                 | 3182 °F (1750 °C)                                |
| <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>                    | Not available.                                   |
| <b>Upper/lower flammability or explosive limits</b> |  |
| <b>Flammability limit - lower (%)</b>               | Not available.                                   |
| <b>Flammability limit - upper (%)</b>               | Not available.                                   |
| <b>Explosive limit - lower (%)</b>                  | Not available.                                   |
| <b>Explosive limit - upper (%)</b>                  | Not available.                                   |
| <b>Vapor pressure</b>                               | < 0.0000001 kPa (77 °F (25 °C))                  |
| <b>Vapor 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>Other information</b>                            |  |
| <b>Density</b>                                      | 4.50 g/cm <sup>3</sup><br>4.82 g/cm <sup>3</sup> |

|                             |                |
|-----------------------------|----------------|
| <b>Explosive properties</b> | Not explosive. |
| <b>Molecular formula</b>    | Cd-S           |
| <b>Molecular weight</b>     | 144.48 g/mol   |
| <b>Oxidizing properties</b> | Not oxidizing. |
| <b>Specific gravity</b>     | 4.5<br>4.82    |

## 10. Stability and reactivity

|   |   |
|---|---|
| <b>Reactivity</b>                         | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| <b>Chemical stability</b>                 | Material is stable under normal conditions.   |
| <b>Possibility of hazardous reactions</b> | Hazardous polymerization does not occur.  |
| <b>Conditions to avoid</b>                | Contact with incompatible materials.  |
| <b>Incompatible materials</b>             | Strong oxidizing agents.  |
| <b>Hazardous decomposition products</b>   | No hazardous decomposition products are known.  |

## 11. Toxicological information

### Information on likely routes of exposure

|                     |  |
|---------------------|--|
| <b>Inhalation</b>   | Prolonged inhalation may be harmful.                     |
| <b>Skin contact</b> | No adverse effects due to skin contact are expected.     |
| <b>Eye contact</b>  | Direct contact with eyes may cause temporary irritation. |
| <b>Ingestion</b>    | Toxic if swallowed.                                      |

**Symptoms related to the physical, chemical and toxicological characteristics** Direct contact with eyes may cause temporary irritation.

### Information on toxicological effects

**Acute toxicity** Toxic if swallowed.

| Product                                      | Species | Test Results |
|--|---------|--------------|
| Cadmium sulfide (CdS) powder (CAS 1306-23-6) |         |              |
| <u>Acute</u>                                 |         |              |
| <b>Oral</b>                                  |         |              |
| LD50   | Rat     | 7080 mg/kg   |

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

|  |   |
|--|---|
| <b>Skin corrosion/irritation</b>         | Prolonged skin contact may cause temporary irritation.    |
| <b>Serious eye damage/eye irritation</b> | Direct contact with eyes may cause temporary irritation.  |
| <b>Respiratory or skin sensitization</b> |   |
| <b>Respiratory sensitization</b>         | Not a respiratory sensitizer.                             |
| <b>Skin sensitization</b>                | This product is not expected to cause skin sensitization. |
| <b>Germ cell mutagenicity</b>            | Suspected of causing genetic defects.                     |
| <b>Carcinogenicity</b>                   | May cause cancer.   |

### IARC Monographs. Overall Evaluation of Carcinogenicity

Cadmium sulfide (CdS) powder (CAS 1306-23-6) 1 Carcinogenic to humans.

### OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

Cadmium sulfide (CdS) powder (CAS 1306-23-6) Cancer

### US. National Toxicology Program (NTP) Report on Carcinogens

Cadmium sulfide (CdS) powder (CAS 1306-23-6) Known To Be Human Carcinogen.

|   |  |
|---|--|
| <b>Reproductive toxicity</b>                              | Suspected of damaging fertility. Suspected of damaging the unborn child.   |
| <b>Specific target organ toxicity - single exposure</b>   | Not classified.  |
| <b>Specific target organ toxicity - repeated exposure</b> | Causes damage to organs through prolonged or repeated exposure.  |
| <b>Aspiration hazard</b>                                  | Not an aspiration hazard.  |
| <b>Chronic effects</b>                                    | Causes damage to organs through prolonged or repeated exposure. Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects. |

## 12. Ecological information

**Ecotoxicity** Very toxic to aquatic life with long lasting effects.

| Product                                      | Species | Test Results  |
|--|---------|---|
| Cadmium sulfide (CdS) powder (CAS 1306-23-6) |         |   |
| <b>Aquatic</b>                               |         |   |
| Fish   | LC50    | Fathead minnow (Pimephales promelas) 0.108 mg/l, 96 hours |

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

|                                      |   |
|--------------------------------------|---|
| <b>Persistence and degradability</b> | No data is available on the degradability of this product.  |
| <b>Bioaccumulative potential</b>     | No data available.  |
| <b>Mobility in soil</b>              | No data available.  |
| <b>Other adverse effects</b>         | No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component. |

## 13. Disposal considerations

|  |  |
|--|--|
| <b>Disposal instructions</b>                 | Collect and reclaim or dispose in sealed containers at licensed waste disposal site. 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. |
| <b>Local disposal regulations</b>            | Dispose in accordance with all applicable regulations.   |
| <b>Hazardous waste code</b>                  | The waste code should be assigned in discussion between the user, the producer and the waste disposal company.   |
| <b>Waste from residues / unused products</b> | 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).   |
| <b>Contaminated packaging</b>                | 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.   |

## 14. Transport information

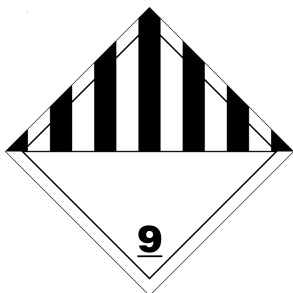
|                                     |  |
|-------------------------------------|--|
| <b>DOT</b>                          |  |
| <b>UN number</b>                    | UN3077   |
| <b>UN proper shipping name</b>      | ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S. (Calcium Sulphide) |
| <b>Transport hazard class(es)</b>   |  |
| <b>Class</b>                        | 9  |
| <b>Subsidiary risk</b>              | -  |
| <b>Packing group</b>                | III  |
| <b>Special precautions for user</b> | Not available.   |
| <b>IATA</b>                         |  |
| <b>UN number</b>                    | UN3077   |
| <b>UN proper shipping name</b>      | Environmentally hazardous substance, solid, n.o.s.                     |
| <b>Transport hazard class(es)</b>   |  |
| <b>Class</b>                        | 9  |
| <b>Subsidiary risk</b>              | -  |

|                              |                            |
|------------------------------|----------------------------|
| Packing group                | III                        |
| Environmental hazards        | No.                        |
| ERG Code                     | 9L                         |
| Special precautions for user | Not available.             |
| Other information            |                            |
| Passenger and cargo aircraft | Allowed with restrictions. |
| Cargo aircraft only          | Allowed with restrictions. |

**IMDG**

|                              |  |
|------------------------------|--|
| UN number                    | UN3077   |
| UN proper shipping name      | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. |
| Transport hazard class(es)   |  |
| Class                        | 9  |
| Subsidiary risk              | -  |
| Packing group                | III  |
| Environmental hazards        |  |
| Marine pollutant             | No.  |
| EmS                          | F-A, S-F   |
| Special precautions for user | Not available.                                     |

**DOT; IATA; IMDG**



**15. Regulatory information**

**US federal regulations**                      This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**Toxic Substances Control Act (TSCA)**

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

**CERCLA Hazardous Substance List (40 CFR 302.4)**

Not listed.

**SARA 304 Emergency release notification**

Not regulated.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)**

|  |                |
|--|----------------|
| Cadmium sulfide (CdS) powder (CAS 1306-23-6) | Cancer         |
|  | Lung           |
|  | Kidney         |
|  | Acute toxicity |

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**SARA 302 Extremely hazardous substance**

Not listed.

**SARA 311/312 Hazardous chemical**                      Yes

**Classified hazard categories** Acute toxicity (any route of exposure)  
 Germ cell mutagenicity  
 Carcinogenicity  
 Reproductive toxicity  
 Specific target organ toxicity (single or repeated exposure)

**SARA 313 (TRI reporting)**

| Chemical name                | CAS number | % by wt. |
|------------------------------|------------|----------|
| Cadmium sulfide (CdS) powder | 1306-23-6  | 100      |

**Other federal regulations**

**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Cadmium sulfide (CdS) powder (CAS 1306-23-6)

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**

Not regulated.

**Clean Water Act (CWA) Section 112(r) (40 CFR 68.130)** Priority pollutant  
 Toxic pollutant

**Safe Drinking Water Act (SDWA)** Not regulated.

**US state regulations** WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

**California Proposition 65**

**California Proposition 65 - CRT: Listed date/Carcinogenic substance**

Cadmium sulfide (CdS) powder (CAS 1306-23-6) Listed: October 1, 1987

**California Proposition 65 - CRT: Listed date/Developmental toxin**

Cadmium sulfide (CdS) powder (CAS 1306-23-6) Listed: May 1, 1997

**California Proposition 65 - CRT: Listed date/Male reproductive toxin**

Cadmium sulfide (CdS) powder (CAS 1306-23-6) Listed: May 1, 1997

**US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))**

Cadmium sulfide (CdS) powder (CAS 1306-23-6)

**16. Other information, including date of preparation or last revision**

**Issue date** 05-11-2020

**Version #** 01

**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.