



SAFETY DATA SHEET

MATERION

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

1.1. Product identifier

Name of the substance	Cadmium Sulfide Target
Identification number	048-010-00-4 (Index number)
Synonyms	CADMIUMSULFIDE * Cadmium sulfide (CdS)
Document number	2IC
Materion Code	2IC
Issue date	30-April-2018
Version number	04
Revision date	17-September-2018
Supersedes date	22-August-2018

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

Identified uses	Not available.
Uses advised against	None known.

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	Noreen Atkinson

1.4. Emergency telephone number

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 4	H302 - Harmful if swallowed.
Germ cell mutagenicity	Category 2	H341 - Suspected of causing genetic defects.
Carcinogenicity	Category 1B	H350 - May cause cancer.
Reproductive toxicity (fertility, the unborn child)	Category 2	H361fd - Suspected of damaging fertility. Suspected of damaging the unborn child.
Specific target organ toxicity - repeated exposure	Category 1	H372 - Causes damage to organs () through prolonged or repeated exposure.

Environmental hazards

Hazardous to the aquatic environment, acute aquatic hazard	Category 1	H400 - Very toxic to aquatic life.
Hazardous to the aquatic environment, long-term aquatic hazard	Category 4	H413 - May cause long lasting harmful effects to aquatic life.

Hazard summary

Toxic: danger of serious damage to health by prolonged exposure through inhalation and if swallowed. Harmful if swallowed. Causes damage to organs through prolonged or repeated exposure. Cancer hazard. Possible reproductive hazard. Suspected of causing genetic defects. Prolonged exposure may cause chronic effects. 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:

Cadmium sulfide

Hazard pictograms



Signal word

Danger

Hazard statements

H301	Toxic if swallowed.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H350	May cause cancer.
H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.
H371	May cause damage to organs.
H372	Causes damage to organs () through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H412	Harmful to aquatic life with long lasting effects.
H413	May cause long lasting harmful effects to aquatic life.

Precautionary statements

Prevention

P201	Obtain special instructions before use.
P201 + P202	Before use, obtain special instructions and learn how to work with these products safely.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Response

P301 + P310	IF SWALLOWED: Immediately call a POISON CENTRE/doctor.
P330	Rinse mouth.
P302 + P352	IF ON SKIN: Wash with plenty of water.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P311	IF exposed or concerned: Call a POISON CENTRE/doctor.
P362 + P364	Take off contaminated clothing and wash it before reuse.
P391	Collect spillage.

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.
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Supplemental label information

99,99 % 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.

2.3. Other hazards

Not a PBT or vPvB substance or mixture.

SECTION 3: Composition/information on ingredients

3.1. Substances

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	INDEX No.	Notes
Cadmium sulfide	99,99	1306-23-6 215-147-8	-	048-010-00-4	
Classification:	Acute Tox. 4;H302, Muta. 2;H341, Carc. 1B;H350, Repr. 2;H361fd, STOT RE 1;H372, Aquatic Acute 1;H400, Aquatic Chronic 4;H413				1

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

SECTION 4: First aid measures

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.

4.1. Description of 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 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 Prolonged exposure may cause chronic effects.

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 (CO₂).

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 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.

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. 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. Avoid generation and spreading of dust.

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. 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.

6.3. Methods and material for containment and cleaning up

Prevent product from entering drains.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: 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.

6.4. Reference to other sections

For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

SECTION 7: Handling and storage

7.1. 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.

7.2. Conditions for safe storage, including any incompatibilities

Store locked up. Store in original tightly closed container. 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. TRK List, OEL Ordinance (GwV), BGBl. II, no. 184/2001

Material	Type	Value	Form
Cadmium Sulfide Target	STEL	0,06 mg/m ³	Inhalable fraction.
	TWA	0,015 mg/m ³	Inhalable fraction.
Components	Type	Value	Form

Cadmium sulfide (CAS 1306-23-6)	STEL	0,06 mg/m ³	Inhalable fraction.
	TWA	0,015 mg/m ³	Inhalable fraction.

Belgium. Exposure Limit Values.

Material	Type	Value	Form
Cadmium Sulfide Target	TWA	0,01 mg/m ³	Inhalable particles.
		0,002 mg/m ³	Respirable particles.
Components	Type	Value	Form

Cadmium sulfide (CAS 1306-23-6)	TWA	0,01 mg/m ³	Inhalable particles.
		0,002 mg/m ³	Respirable particles.

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

Material	Type	Value
Cadmium Sulfide Target	TWA	0,05 mg/m ³
Components	Type	Value

Cadmium sulfide (CAS 1306-23-6)	TWA	0,05 mg/m ³
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Croatia. Dangerous Substance Exposure Limit Values in the Workplace (ELVs), Annexes 1 and 2, Narodne Novine, 13/09

Material	Type	Value	Form
Cadmium Sulfide Target	MAC	0,03 mg/m ³	Respirable dust.
Components	Type	Value	Form

Cadmium sulfide (CAS 1306-23-6)	MAC	0,03 mg/m ³	Respirable dust.
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Czech Republic. OELs. Government Decree 361

Material	Type	Value
Cadmium Sulfide Target	Ceiling	0,1 mg/m ³
Components	Type	Value

Cadmium sulfide (CAS 1306-23-6)	Ceiling	0,1 mg/m ³
	TWA	0,05 mg/m ³

Denmark. Exposure Limit Values

Material	Type	Value
Cadmium Sulfide Target	TLV	0,005 mg/m ³
Components	Type	Value

Cadmium sulfide (CAS 1306-23-6)	TLV	0,005 mg/m ³
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Estonia. OELs. Occupational Exposure Limits of Hazardous Substances. (Annex of Regulation No. 293 of 18 September 2001)

Material	Type	Value	Form
Cadmium Sulfide Target	TWA	0,05 mg/m ³	Total dust.
Components	Type	Value	Form

Cadmium sulfide (CAS 1306-23-6)	TWA	0,05 mg/m ³	Total dust.
		0,01 mg/m ³	Respirable dust.

Finland. Workplace Exposure Limits

Material	Type	Value	Form
Cadmium Sulfide Target	TWA	0,004 mg/m ³	Respirable.
Components	Type	Value	Form

Cadmium sulfide (CAS 1306-23-6)	TWA	0,004 mg/m ³	Respirable.
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France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984

Material	Type	Value
Cadmium Sulfide Target	VME	0,05 mg/m ³
Components	Type	Value

Cadmium sulfide (CAS 1306-23-6)	VME	0,05 mg/m ³
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Greece. OELs (Decree No. 90/1999, as amended)

Material	Type	Value
Cadmium Sulfide Target	STEL	0,1 mg/m ³
Components	Type	Value

Cadmium sulfide (CAS 1306-23-6)	TWA	0,025 mg/m ³
	STEL	0,1 mg/m ³
	TWA	0,025 mg/m ³

Hungary. OELs. Joint Decree on Chemical Safety of Workplaces

Material	Type	Value
Cadmium Sulfide Target	Ceiling	0,015 mg/m ³
Components	Type	Value

Cadmium sulfide (CAS 1306-23-6)	Ceiling	0,015 mg/m ³
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Iceland. OELs. Regulation 154/1999 on occupational exposure limits

Material	Type	Value	Form
Cadmium Sulfide Target	TWA	0,01 mg/m ³	Dust and fume.
Components	Type	Value	Form

Cadmium sulfide (CAS 1306-23-6)	TWA	0,01 mg/m ³	Dust and fume.
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Ireland. Occupational Exposure Limits

Material	Type	Value	Form
Cadmium Sulfide Target	TWA	0,03 mg/m ³	Respirable dust.
Components	Type	Value	Form

Cadmium sulfide (CAS 1306-23-6)	TWA	0,03 mg/m ³	Respirable dust.
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Italy. Occupational Exposure Limits

Material	Type	Value	Form
Cadmium Sulfide Target	TWA	0,01 mg/m ³	Respirable fraction.
Components	Type	Value	

Cadmium sulfide (CAS 1306-23-6)	TWA	0,01 mg/m ³	Respirable fraction.
		0,002 mg/m ³	

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

Material	Type	Value	Form
Cadmium Sulfide Target	TWA	0,05 mg/m ³	Inhalable fraction.
Components	Type	Value	Form

Cadmium sulfide (CAS 1306-23-6)	TWA	0,05 mg/m ³	Inhalable fraction.
		0,01 mg/m ³	Respirable fraction.

Netherlands. OELs (binding)

Material	Type	Value
Cadmium Sulfide Target	TWA	0,004 mg/m ³
Components	Type	Value

Cadmium sulfide (CAS 1306-23-6)	TWA	0,004 mg/m ³
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Norway. Administrative Norms for Contaminants in the Workplace

Material	Type	Value
Cadmium Sulfide Target	TLV	0,05 mg/m ³
Components	Type	Value

Cadmium sulfide (CAS 1306-23-6)	TLV	0,05 mg/m ³
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Poland. MACs. Regulation regarding maximum permissible concentrations and intensities of harmful factors in the work environment, Annex 1

Material	Type	Value	Form
Cadmium Sulfide Target	TWA	0,01 mg/m ³	Inhalable fraction.
Components	Type	Value	Form

Cadmium sulfide (CAS 1306-23-6)	TWA	0,01 mg/m ³	Inhalable fraction.
		0,002 mg/m ³	Respirable fraction.

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

Material	Type	Value	Form
Cadmium Sulfide Target	TWA	0,01 mg/m ³ 0,002 mg/m ³	Respirable fraction.
Components	Type	Value	Form

Cadmium sulfide (CAS 1306-23-6)	TWA	0,01 mg/m ³ 0,002 mg/m ³	Respirable fraction.
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Romania. OELs. Protection of workers from exposure to chemical agents at the workplace

Material	Type	Value	Form
Cadmium Sulfide Target	TWA	0,05 mg/m ³	
Components	Type	Value	

Cadmium sulfide (CAS 1306-23-6)	TWA	0,05 mg/m ³	
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Slovenia. OELs. Regulations concerning protection of workers against risks due to exposure to chemicals while working (Official Gazette of the Republic of Slovenia)

Material	Type	Value	Form
Cadmium Sulfide Target	TWA	0,015 mg/m ³	Dust/aerosol, inhalable.
Components	Type	Value	Form

Cadmium sulfide (CAS 1306-23-6)	TWA	0,015 mg/m ³	Dust/aerosol, inhalable.
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Spain. Carcinogens and Mutagens with Limit Values (Table 2)

Material	Type	Value	Form
Cadmium Sulfide Target	TWA	0,01 mg/m ³ 0,002 mg/m ³	Inhalable fraction. Respirable fraction.
Components	Type	Value	Form

Cadmium sulfide (CAS 1306-23-6)	TWA	0,01 mg/m ³ 0,002 mg/m ³	Inhalable fraction. Respirable fraction.
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Sweden. OELs. Work Environment Authority (AV), Occupational Exposure Limit Values (AFS 2015:7)

Material	Type	Value	Form
Cadmium Sulfide Target	TWA	0,02 mg/m ³ 0,002 mg/m ³	Total dust. Respirable dust.
Components	Type	Value	Form

Cadmium sulfide (CAS 1306-23-6)	TWA	0,02 mg/m ³ 0,002 mg/m ³	Total dust. Respirable dust.
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Switzerland. SUVA Grenzwerte am Arbeitsplatz

Material	Type	Value	Form
Cadmium Sulfide Target	TWA	0,015 mg/m ³ 0,004 mg/m ³	Inhalable dust. Respirable dust.
Components	Type	Value	Form

Cadmium sulfide (CAS 1306-23-6)	TWA	0,015 mg/m ³ 0,004 mg/m ³	Inhalable dust. Respirable dust.
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UK. EH40 Workplace Exposure Limits (WELs)

Material	Type	Value	Form
Cadmium Sulfide Target	TWA	0,03 mg/m ³	Respirable dust.
Components	Type	Value	Form

Cadmium sulfide (CAS 1306-23-6)	TWA	0,03 mg/m ³	Respirable dust.
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Biological limit values**Finland. HTP-arvot, App 2., Biological Limit Values, (BRA/BGV) , Social Affairs and Ministry of Health**

Material	Value	Determinant	Specimen	Sampling time
Cadmium Sulfide Target	20 nmol/l	Cadmium	Urine	*

Finland. HTP-arvot, App 2., Biological Limit Values, (BRA/BGV) , Social Affairs and Ministry of Health

Components	Value	Determinant	Specimen	Sampling time
Cadmium sulfide (CAS 1306-23-6)	20 nmol/l	Cadmium	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
Cadmium Sulfide Target	5 µg/g	Cadmium	Creatinine in urine	*
	5 µg/l	Cadmium	Blood	*
Components	Value	Determinant	Specimen	Sampling time
Cadmium sulfide (CAS 1306-23-6)	5 µg/g	Cadmium	Creatinine in urine	*
	5 µg/l	Cadmium	Blood	*

* - 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
Cadmium Sulfide Target	10 µg/l	cadmium	Blood	*
	0,01 mg/g	cadmium	Creatinine in urine	*
	0,09 µmol/l	cadmium	Blood	*
	0,01 µmol/mmol	cadmium	Creatinine in urine	*
Components	Value	Determinant	Specimen	Sampling time
Cadmium sulfide (CAS 1306-23-6)	10 µg/l	cadmium	Blood	*
	0,01 mg/g	cadmium	Creatinine in urine	*
	0,09 µmol/l	cadmium	Blood	*
	0,01 µmol/mmol	cadmium	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
Cadmium Sulfide Target	4,7 µg/g	Cadmium	Creatinine in urine	*
	7 µg/l	Cadmium	Urine	*
Components	Value	Determinant	Specimen	Sampling time
Cadmium sulfide (CAS 1306-23-6)	4,7 µg/g	Cadmium	Creatinine in urine	*
	7 µg/l	Cadmium	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
Cadmium Sulfide Target	5 µg/g	Cadmio	Creatinine in urine	*
	5 µg/l	Cadmio	Blood	*
Components	Value	Determinant	Specimen	Sampling time
Cadmium sulfide (CAS 1306-23-6)	5 µg/g	Cadmio	Creatinine in urine	*
	5 µg/l	Cadmio	Blood	*

* - 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 (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.

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

If contact is likely, safety glasses with side shields are recommended.

Skin protection

- Hand protection

Wear appropriate chemical resistant gloves.

- Other

Use of an impervious apron is recommended.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

Hygiene measures

Observe any medical surveillance requirements. 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

Inform appropriate managerial or supervisory personnel of all environmental releases.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state

Solid.

Form

Solid.

Colour

Not available.

Odour

Not available.

Odour threshold

Not available.

pH

Not available.

Melting point/freezing point

1750 °C (3182 °F)

Initial boiling point and boiling range

Not available.

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 at 25 °C

Vapour density

Not available.

Relative density

Not available.

Solubility(ies)

Solubility (water)

Not available.

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	4,50 g/cm ³ 4,82 g/cm ³
Molecular formula	Cd-S
Molecular weight	144,48 g/mol
Specific gravity	4,5 4,82

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	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	Prolonged inhalation may be harmful.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Harmful if swallowed.

Symptoms Exposure may cause temporary irritation, redness, or discomfort.

11.1. Information on toxicological effects

Acute toxicity	Harmful if swallowed.
Skin corrosion/irritation	Due to partial or complete lack of data the classification is not possible.
Serious eye damage/eye irritation	Due to partial or complete lack of data the classification is not possible.
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	Suspected of causing genetic defects.
Carcinogenicity	May cause cancer.

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

Cadmium sulfide (CAS 1306-23-6)

IARC Monographs. Overall Evaluation of Carcinogenicity

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

Reproductive toxicity	Suspected of damaging fertility. Suspected of damaging the unborn child.
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	Causes damage to organs through prolonged or repeated exposure.
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 Very toxic to aquatic life. May cause long lasting harmful effects to aquatic life.

Product	Species	Test results
Cadmium Sulfide Target		
Aquatic		
Fish	LC50	Fathead minnow (Pimephales promelas) 0,108 mg/l, 96 hours

Components	Species	Test results
Cadmium sulfide (CAS 1306-23-6)		
Aquatic		
Fish	LC50	Fathead minnow (Pimephales promelas) 0,108 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	Not a PBT or vPvB substance or mixture.
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.

12.7. Additional information

Estonia Dangerous substances in groundwater Data

Cadmium sulfide (CAS 1306-23-6)	Cadmium (Cd) 1 UG/L
	Cadmium (Cd) 10 UG/L

Estonia Dangerous substances in soil Data

Cadmium sulfide (CAS 1306-23-6)	Cadmium (Cd) 1 mg/kg
	Cadmium (Cd) 20 mg/kg
	Cadmium (Cd) 5 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	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. 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. - 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

Cadmium sulfide (CAS 1306-23-6)

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

Cadmium sulfide (CAS 1306-23-6)

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

Cadmium sulfide (CAS 1306-23-6)

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

Cadmium sulfide (CAS 1306-23-6)

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

Cadmium sulfide (CAS 1306-23-6)

Other EU regulations

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

Cadmium sulfide (CAS 1306-23-6)

Other regulations

Pregnant women should not work with the product, if there is the least risk of exposure. 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. This product is not in compliance with Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronics equipment (RoHS). Additional information is given in the Safety Data Sheet.

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.

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

List of abbreviations

Not available.

Information on evaluation method leading to the classification of mixture

Not applicable.

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.