



SAFETY DATA SHEET

MATERION

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

1.1. Product identifier

| | |
|------------------------------|-----------------------------|
| Name of the substance | Lead Telluride (PbTe) |
| Identification number | 082-001-00-6 (Index number) |
| Synonyms | None. |
| Document number | L-MSDS0003 |
| Issue date | 04-May-2015 |
| Version number | 01 |

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

Classification according to Directive 67/548/EEC or 1999/45/EC as amended

Classification Repr. Cat. 1;R61, Repr. Cat. 3;R62, Xn;R20/22, R33, N;R50/53

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 4 | H332 - Harmful if inhaled. |
| Carcinogenicity | Category 1B | H350 - May cause cancer. |
| Reproductive toxicity (fertility, the unborn child) | Category 1A | H360FD - May damage fertility. May damage the unborn child. |
| Specific target organ toxicity - repeated exposure | Category 2 | H373 - May cause 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 1 | H410 - Very toxic to aquatic life with long lasting effects. |

Hazard summary

| | |
|------------------------------|--|
| Physical hazards | Not classified for physical hazards. |
| Health hazards | May cause harm to the unborn child. Possible risk of impaired fertility. Harmful by inhalation and if swallowed. Danger of cumulative effects. |
| Environmental hazards | Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. |
| Specific hazards | Not available. |
| Main symptoms | Not available. |

2.2. Label elements

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

| | |
|--------------------------|--|
| Contains: | Lead Telluride |
| Hazard pictograms | None. |
| Signal word | Danger |
| Hazard statements | |
| H302 | Harmful if swallowed. |
| H332 | Harmful if inhaled. |
| H350 | May cause cancer. |
| H360FD | May damage fertility. May damage the unborn child. |
| H373 | May cause damage to organs through prolonged or repeated exposure. |
| H400 | Very toxic to aquatic life. |
| H410 | Very toxic to aquatic life with long lasting effects. |

Precautionary statements

Prevention

| | |
|------|--|
| P201 | Obtain special instructions before use. |
| P202 | Do not handle until all safety precautions have been read and understood. |
| P260 | Do not breathe dust/fume/gas/mist/vapors/spray. |
| 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. |
| P273 | Avoid release to the environment. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |

Response

| | |
|-------------|--|
| P301 + P312 | IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. |
| P304 + P340 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. |
| P308 + P313 | IF exposed or concerned: Get medical advice/attention. |
| P312 | Call a POISON CENTER/doctor if you feel unwell. |
| P330 | Rinse mouth. |
| P391 | Collect spillage. |

Storage

| | |
|------|------------------|
| P405 | Store locked up. |
|------|------------------|

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 |
|------------------------|-------------|--|------------------------|--------------|-------|
| Lead Telluride | 100 | 1314-91-6 215-247-1 | - | 082-001-00-6 | # |
| Classification: | DSD: | Repr. Cat. 1;R61, Repr. Cat. 3;R62, Xn;R20/22, R33, N;R50/53 | | | A,E,1 |
| | CLP: | Acute Tox. 4;H302, Acute Tox. 4;H332, Carc. 1B;H350, Repr. 1A;H360FD, STOT RE 2;H373, Aquatic Acute 1;H400, Aquatic Chronic 1;H410 | | | 1,A |

SECTION 4: First aid measures

General information Not available.

4.1. Description of first aid measures

| | |
|---------------------|----------------|
| Inhalation | Not available. |
| Skin contact | Not available. |
| Eye contact | Not available. |
| Ingestion | Not available. |

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 Not available.

SECTION 5: Firefighting measures

General fire hazards Not available.

5.1. Extinguishing media

Suitable extinguishing media Not available.

Unsuitable extinguishing media Not available.

5.2. Special hazards arising from the substance or mixture Not available.

5.3. Advice for firefighters

Special protective equipment for firefighters Not available.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel Not available.

For emergency responders Not available.

6.2. Environmental precautions Not available.

6.3. Methods and material for containment and cleaning up Not available.

6.4. Reference to other sections Not available.

SECTION 7: Handling and storage

7.1. Precautions for safe handling Not available.

7.2. Conditions for safe storage, including any incompatibilities Not available.

7.3. Specific end use(s) Not available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

Netherlands. OELs (binding)

| Material | Type | Value | Form |
|--------------------------------|------|------------|----------------|
| Lead Telluride (CAS 1314-91-6) | TWA | 0,15 mg/m3 | Dust and fume. |

EU. Directive 98/24/EC: on the protection of workers from the risks related to chemical agents at work, Annex I List of Binding Occupational Exposure Limit Values

| Material | Type | Value |
|--------------------------------|------|------------|
| Lead Telluride (CAS 1314-91-6) | TWA | 0,15 mg/m3 |

Biological limit values

EU. Directive 98/24/EC: on the protection of workers from the risks related to chemical agents at work, Annex II Binding Biological Limit Values and Health Surveillance Measures

| Material | Value | Determinant | Specimen |
|--------------------------------|--------------|-------------|----------|
| Lead Telluride (CAS 1314-91-6) | 70 µg/100 ml | Lead | Blood |

| | |
|---|----------------|
| Recommended monitoring procedures | Not available. |
| Derived no-effect level (DNEL) | Not available. |
| Predicted no effect concentrations (PNECs) | Not available. |

8.2. Exposure controls

| | |
|---|----------------|
| Appropriate engineering controls | Not available. |
|---|----------------|

Individual protection measures, such as personal protective equipment

| | |
|--|----------------|
| General information | Not available. |
| Eye/face protection | Not available. |
| Skin protection | |
| - Hand protection | Not available. |
| - Other | Not available. |
| Respiratory protection | Not available. |
| Thermal hazards | Not available. |
| Hygiene measures | Not available. |
| Environmental exposure controls | Not available. |

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

| | |
|--|-----------------|
| Physical state | Solid. |
| Form | Not available. |
| Colour | Not available. |
| Odour | Not applicable. |
| Odour threshold | Not available. |
| pH | Not available. |
| Melting point/freezing point | Not available. |
| Initial boiling point and boiling range | Not available. |
| Flash point | Not available. |
| Evaporation rate | Not available. |
| Flammability (solid, gas) | Not applicable. |

Upper/lower flammability or explosive limits

| | |
|---------------------------------------|----------------|
| Flammability limit - lower (%) | Not available. |
| Flammability limit - upper (%) | Not available. |

| | |
|-------------------------|----------------|
| Vapour pressure | Not available. |
| Vapour density | Not available. |
| Relative density | Not available. |

Solubility(ies)

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

| | |
|----------------------------------|----------------|
| Auto-ignition temperature | Not available. |
|----------------------------------|----------------|

| | |
|----------------------------------|----------------|
| Decomposition temperature | Not available. |
|----------------------------------|----------------|

| | |
|------------------|----------------|
| Viscosity | Not available. |
|------------------|----------------|

| | |
|-----------------------------|----------------|
| Explosive properties | Not available. |
|-----------------------------|----------------|

| | |
|-----------------------------|----------------|
| Oxidizing properties | Not available. |
|-----------------------------|----------------|

9.2. Other information

| | |
|--------------------------|------|
| Molecular formula | PbTe |
|--------------------------|------|

SECTION 10: Stability and reactivity

| | |
|---|----------------|
| 10.1. Reactivity | Not available. |
| 10.2. Chemical stability | Not available. |
| 10.3. Possibility of hazardous reactions | Not available. |
| 10.4. Conditions to avoid | Not available. |
| 10.5. Incompatible materials | Not available. |
| 10.6. Hazardous decomposition products | Not available. |

SECTION 11: Toxicological information

General information Not available.

Information on likely routes of exposure

| | |
|---------------------|----------------|
| Inhalation | Not available. |
| Skin contact | Not available. |
| Eye contact | Not available. |
| Ingestion | Not available. |

Symptoms Not available.

11.1. Information on toxicological effects

| | |
|--|--------------------|
| Acute toxicity | No data available. |
| Skin corrosion/irritation | Not available. |
| Serious eye damage/eye irritation | Not available. |
| Respiratory sensitisation | Not available. |
| Skin sensitisation | Not available. |
| Germ cell mutagenicity | Not available. |

Carcinogenicity

IARC Monographs. Overall Evaluation of Carcinogenicity

Lead Telluride (CAS 1314-91-6)

2A Probably carcinogenic to humans.

| | |
|---|----------------|
| Reproductive toxicity | Not available. |
| Specific target organ toxicity - single exposure | Not available. |
| Specific target organ toxicity - repeated exposure | Not available. |
| Aspiration hazard | Not available. |
| Mixture versus substance information | Not available. |
| Other information | Not available. |

SECTION 12: Ecological information

| | |
|--|---|
| 12.1. Toxicity | No toxicity data noted for the ingredient(s). |
| 12.2. Persistence and degradability | Not available. |
| 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. |

SECTION 13: Disposal considerations

13.1. Waste treatment methods

| | |
|-------------------------------|----------------|
| Residual waste | Not available. |
| Contaminated packaging | Not available. |
| EU waste code | Not available. |

SECTION 14: Transport information

ADR

Not regulated as dangerous goods.

RID

Not regulated as dangerous goods.

ADN

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

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, as amended

Not listed.

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

Not listed.

Regulation (EC) No. 850/2004 on persistent organic pollutants, Annex I

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 1

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 2

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 3

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex V

Not listed.

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

Lead Telluride (CAS 1314-91-6)

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.

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

Lead Telluride (CAS 1314-91-6)

Restrictions on use

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

Not regulated.

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.

Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding, as amended

Not listed.

Other EU regulations

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

Lead Telluride (CAS 1314-91-6)

Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work, as amended

Lead Telluride (CAS 1314-91-6)

Directive 94/33/EC on the protection of young people at work, as amended

Not listed.

National regulations Not available.

15.2. Chemical safety assessment Not available.

SECTION 16: Other information

List of abbreviations Not available.

References Not available.

Information on evaluation method leading to the classification of mixture Not available.

Full text of any statements or R-phrases and H-statements under Sections 2 to 15

R20/22 Harmful by inhalation and if swallowed.

R33 Danger of cumulative effects.

R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R61 May cause harm to the unborn child.

R62 Possible risk of impaired fertility.

H302 Harmful if swallowed.

H332 Harmful if inhaled.

H350 May cause cancer.

H360FD May damage fertility. May damage the unborn child.

H373 May cause damage to organs through prolonged or repeated exposure.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

Revision information None.

Training information Not available.