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

## 1.1. Product identifier

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product form</td>
<td>Substance</td>
</tr>
<tr>
<td>Physical state</td>
<td>Solid</td>
</tr>
<tr>
<td>Substance name</td>
<td>CADMIUM DIETHYL DITHIO CARBAMATE, 96%</td>
</tr>
<tr>
<td>Product code</td>
<td>AKC159.8</td>
</tr>
<tr>
<td>Formula</td>
<td>C10H20CdN2S4</td>
</tr>
<tr>
<td>Synonyms</td>
<td>CADMIUM BIS(DIETHYL DITHIO CARBAMATE)</td>
</tr>
<tr>
<td>Chemical family</td>
<td>METAL COMPOUND</td>
</tr>
</tbody>
</table>

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

### 1.2.1. Relevant identified uses

Use of the substance/mixture: Chemical intermediate

### 1.2.2. Uses advised against

No additional information available

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

**GELEST, INC.**

11 East Steel Road

Morrisville, PA 19067

USA

T 215-547-1015 - F 215-547-2484 - (M-F): 8:00 AM - 5:30 PM EST

info@gelest.com - www.gelest.com

**GELEST INC.**

Fritz-Klatte-Strasse 8

65933 Frankfurt

Germany

T +49 (0) 69 3535106-500 - F +49 (0) 69 3535106-501 - (M-F): 8:00 AM - 4:00 PM

info@gelestde.com - www.gelestde.com

## 1.4. Emergency telephone number

Emergency number: CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International)

# SECTION 2: Hazards identification

## 2.1. Classification of the substance or mixture

<table>
<thead>
<tr>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity (oral), Category 4 H302</td>
<td></td>
</tr>
<tr>
<td>Acute toxicity (inhalation:dust,mist) Category 3 H331</td>
<td></td>
</tr>
<tr>
<td>Skin corrosion/irritation, Category 2 H315</td>
<td></td>
</tr>
<tr>
<td>Serious eye damage/eye irritation, Category 2 H319</td>
<td></td>
</tr>
</tbody>
</table>

Full text of H statements: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

## 2.2. Label elements

<table>
<thead>
<tr>
<th>Hazard pictograms (CLP)</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>GHS06</td>
<td></td>
</tr>
</tbody>
</table>

Signal word (CLP): Danger

Hazard statements (CLP): H302 - Harmful if swallowed. H315 - Causes skin irritation.
CADMIUM DIETHYLDITHIOCARBAMATE, 96%
Safety Data Sheet

Precautionary statements (CLP):
- P280 - Wear protective gloves/protective clothing/eye protection/face protection.
- P261 - Avoid breathing dust.
- P264 - Wash hands thoroughly after handling.
- P271 - Use only outdoors or in a well-ventilated area.
- P362+P364 - Take off contaminated clothing and wash it before reuse.
- P311 - Call a doctor.

2.3. Other hazards
No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances
- Substances type: Mono-constituent
- Name: CADMIUM DIETHYLDITHIOCARBAMATE, 96%
- CAS-No.: 14239-68-0
- EC-No.: 238-113-4

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification according to Regulation (EC No.) 1272/2008 [CLP]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cadmium diethyldithiocarbamate</td>
<td>(CAS-No.) 14239-68-0 (EC-No.) 238-113-4</td>
<td>95 - 100</td>
<td>Acute Tox. 4 (Oral), H302 Acute Tox. 3 (Inhalation), H331 Skin Irrit. 2, H315 Eye Irrit. 2, H319</td>
</tr>
</tbody>
</table>

Full text of H-statements: see section 16

3.2. Mixtures
Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures
- First-aid measures general: Remove contaminated clothing and shoes. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). If possible show this sheet; if not available show packaging or label.
- First-aid measures after inhalation: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
- First-aid measures after skin contact: Wash with plenty of water/…. Get medical advice/attention.
- First-aid measures after eye contact: Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.
- First-aid measures after ingestion: Never give anything by mouth to an unconscious person. Get medical advice/attention.

4.2. Most important symptoms and effects, both acute and delayed
- Symptoms/effects after inhalation: Toxic if inhaled. May cause irritation to the respiratory tract. May cause somnolence, excitement, ataxia, convulsions, weight loss.
- Symptoms/effects after skin contact: Causes skin irritation.
- Symptoms/effects after eye contact: Causes serious eye irritation.
- Symptoms/effects after ingestion: Harmful if swallowed. Swallowing a small quantity of this material will result in serious health hazard.
- Chronic symptoms: Questionable carcinogen, tumorigen, teratogen, reproductive effects, mutagenic data.

4.3. Indication of any immediate medical attention and special treatment needed
No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media
- Unsuitable extinguishing media: None known.

5.2. Special hazards arising from the substance or mixture
- Fire hazard: Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.

5.3. Advice for firefighters
- Firefighting instructions: Exercise caution when fighting any chemical fire. Use water spray to cool exposed surfaces.
Protection during firefighting: Do not enter fire area without proper protective equipment, including respiratory protection. Avoid contact with skin and eyes. Do not breathe dust.

**SECTION 6: Accidental release measures**

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment: Wear protective equipment as described in Section 8.

Emergency procedures: Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment: Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

Methods for cleaning up: Sweep or shovel spills into appropriate container for disposal.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

**SECTION 7: Handling and storage**

7.1. Precautions for safe handling

Precautions for safe handling: Avoid contact with skin and eyes. Do not breathe dust. Avoid dust formation. Use only outdoors or in a well-ventilated area.

Hygiene measures: Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Keep container tightly closed. Store locked up.

Incompatible materials: Strong oxidizing agents.

Storage area: Direct sunlight. Store in a well-ventilated place.

7.3. Specific end use(s)

No additional information available

**SECTION 8: Exposure controls/personal protection**

8.1. Control parameters

<table>
<thead>
<tr>
<th>Cadmium diethyldithiocarbamate (14239-68-0)</th>
<th>Italy - Portugal - USA ACGIH</th>
<th>ACGIH TWA (mg/m³)</th>
<th>0.05 mg/m³ Cd</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA OSHA</td>
<td>OSHA PEL (TWA) (mg/m³)</td>
<td>5 mg/m³ Cd</td>
<td></td>
</tr>
</tbody>
</table>

8.2. Exposure controls

Appropriate engineering controls:
Handle in an enclosing hood with exhaust ventilation.

Personal protective equipment:
Avoid all unnecessary exposure. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Hand protection:
Neoprene or nitrile rubber gloves

Eye protection:
Chemical goggles. Contact lenses should not be worn

Skin and body protection:
Wear suitable protective clothing

Respiratory protection:
Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. NIOSH-certified dust and mist (orange cartridge) respirator.
SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Solid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Powder</td>
</tr>
<tr>
<td>Molecular mass</td>
<td>408.94 g/mol</td>
</tr>
<tr>
<td>Colour</td>
<td>No data available</td>
</tr>
<tr>
<td>Odour</td>
<td>No data available</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>Refractive index</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (butylacetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>63 - 69 °C</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>&lt; 0.1 mm Hg @ 25°C</td>
</tr>
<tr>
<td>Relative vapour density at 20 °C</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>1.48</td>
</tr>
<tr>
<td>% Volatiles</td>
<td>&lt; 1 %</td>
</tr>
<tr>
<td>Solubility</td>
<td>Slightly. Soluble in water. Organic solvent: Soluble: toluene, chloroform</td>
</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Log Kow</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive limits</td>
<td>No data available</td>
</tr>
</tbody>
</table>

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

No additional information available

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products


SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity: Harmful if swallowed. Toxic if inhaled.

| CADMIUM DIETHYLDITHIOCARBAMATE, 96% (14239-68-0) |
|-----------------------------------------------|----------------|
| ATE CLP (oral)                                 | 900 mg/kg bodyweight |
| ATE CLP (dust,mist)                            | 0.5 mg/l/4h         |
| Cadmium diethyldithiocarbamate (14239-68-0)    | LD50 oral rat       |
|                                               | 900 mg/kg           |
Cadmiun diethyldithiocarbamate (14239-68-0)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ATE CLP (oral)</td>
<td>900 mg/kg bodyweight</td>
</tr>
<tr>
<td>ATE CLP (gases)</td>
<td>700 ppmv/4h</td>
</tr>
<tr>
<td>ATE CLP (vapours)</td>
<td>3 mg/l/4h</td>
</tr>
<tr>
<td>ATE CLP (dust,mist)</td>
<td>0.5 mg/l/4h</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation: Causes skin irritation.
Serious eye damage/irritation: Causes serious eye irritation.
Respiratory or skin sensitisation: Not classified
Germ cell mutagenicity: Not classified
Carcinogenicity: None of the components in this product at concentrations >0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.
Reproductive toxicity: Not classified
STOT-single exposure: Not classified
STOT-repeated exposure: Not classified
Aspiration hazard: Not classified
Symptoms/effects after inhalation: Toxic if inhaled. May cause irritation to the respiratory tract. May cause somnolence, excitement, ataxia, convulsions, weight loss.
Symptoms/effects after skin contact: Causes skin irritation.
Symptoms/effects after eye contact: Causes serious eye irritation.
Symptoms/effects after ingestion: Harmful if swallowed. Swallowing a small quantity of this material will result in serious health hazard.
Chronic symptoms: Questionable carcinogen, tumorigen, teratogen, reproductive effects, mutagenic data.
Reason for classification: Expert judgment

SECTION 12: Ecological information

12.1. Toxicity
Hazardous to the aquatic environment, short-term (acute): Not classified
Hazardous to the aquatic environment, long-term (chronic): Not classified

12.2. Persistence and degradability
No additional information available

12.3. Bioaccumulative potential
No additional information available

12.4. Mobility in soil
No additional information available

12.5. Results of PBT and vPvB assessment
No additional information available

12.6. Other adverse effects
Other adverse effects: This substance may be hazardous to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Product/Packaging disposal recommendations: Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility.
Ecology - waste materials: Avoid release to the environment.

SECTION 14: Transport information

14.1. UN number
In accordance with ADR / RID / IMDG / IATA / ADN

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>UN-No. (ADR)</td>
<td>2570</td>
</tr>
<tr>
<td>UN-No. (IMDG)</td>
<td>2570</td>
</tr>
<tr>
<td>UN-No. (IATA)</td>
<td>2570</td>
</tr>
<tr>
<td>UN-No. (ADN)</td>
<td>2570</td>
</tr>
</tbody>
</table>
# CADMIUM DIETHYLDITHIOCARBAMATE, 96%
## Safety Data Sheet

### 14.2. UN proper shipping name

| Proper Shipping Name (ADR) | CADMIUM COMPOUND |
| Proper Shipping Name (IMDG) | CADMIUM COMPOUND |
| Proper Shipping Name (IATA) | Cadmium compound |
| Proper Shipping Name (ADN) | CADMIUM COMPOUND |
| Transport document description (ADR) | UN 2570 CADMIUM COMPOUND (CADMIUM DIETHYLDITHIOCARBAMATE), 6.1, III, (E) |
| Transport document description (IMDG) | UN 2570 CADMIUM COMPOUND (CADMIUM DIETHYLDITHIOCARBAMATE), 6.1, III |
| Transport document description (IATA) | UN 2570 Cadmium compound (CADMIUM DIETHYLDITHIOCARBAMATE), 6.1, III |
| Transport document description (ADN) | UN 2570 CADMIUM COMPOUND (CADMIUM DIETHYLDITHIOCARBAMATE), 6.1, III |
| Transport document description (RID) | UN 2570 CADMIUM COMPOUND (CADMIUM DIETHYLDITHIOCARBAMATE), 6.1, III |

### 14.3. Transport hazard class(es)

#### ADR

| Transport hazard class(es) (ADR) | 6.1 |
| Danger labels (ADR) | 6.1 |

#### IMDG

| Transport hazard class(es) (IMDG) | 6.1 |
| Danger labels (IMDG) | 6.1 |

#### IATA

| Transport hazard class(es) (IATA) | 6.1 |
| Danger labels (IATA) | 6.1 |

#### ADN

| Transport hazard class(es) (ADN) | 6.1 |
| Danger labels (ADN) | 6.1 |

#### RID

| Transport hazard class(es) (RID) | 6.1 |
| Danger labels (RID) | 6.1 |
14.4. Packing group
Packing group (ADR) : III
Packing group (IMDG) : III
Packing group (IATA) : III
Packing group (ADN) : III
Packing group (RID) : III

14.5. Environmental hazards
Dangerous for the environment : No
Marine pollutant : No
Other information : No supplementary information available

14.6. Special precautions for user

- Overland transport
Classification code (ADR) : T5
Special provisions (ADR) : 274, 596
Limited quantities (ADR) : 5kg
Excepted quantities (ADR) : E1
Packing instructions (ADR) : P002, IBC08, LP02, R001
Mixed packing provisions (ADR) : MP10
Portable tank and bulk container instructions (ADR) : T1
Portable tank and bulk container special provisions (ADR) : TP33
Tank code (ADR) : SGAH, L4BH
Tank special provisions (ADR) : TU15, TE19
Vehicle for tank carriage : AT
Transport category (ADR) : 2
Special provisions for carriage - Bulk (ADR) : VC1, VC2, AP7
Special provisions for carriage - Loading, unloading and handling (ADR) : CV13, CV28
Special provisions for carriage - Operation (ADR) : S9
Hazard identification number (Kemler No.) : 60
Orange plates : 60
Tunnel restriction code (ADR) : E
EAC code : 2X

- Transport by sea
Special provisions (IMDG) : 223, 274
Limited quantities (IMDG) : 5 kg
Excepted quantities (IMDG) : E1
Packing instructions (IMDG) : P002, LP02
IBC packing instructions (IMDG) : IBC08
IBC special provisions (IMDG) : B3
Tank instructions (IMDG) : T1
Tank special provisions (IMDG) : TP33
EmS-No. (Fire) : F-A
EmS-No. (Spillage) : S-A
Stowage category (IMDG) : A
Properties and observations (IMDG) : Powder or crystals with various colours. May be soluble or insoluble in water. Toxic if swallowed, by skin contact or by dust inhalation.
- **Air transport**
  - PCA Excepted quantities (IATA): E1
  - PCA Limited quantities (IATA): Y645
  - PCA limited quantity max net quantity (IATA): 10kg
  - PCA packing instructions (IATA): 670
  - PCA max net quantity (IATA): 100kg
  - CAO packing instructions (IATA): 677
  - CAO max net quantity (IATA): 200kg
  - Special provisions (IATA): A3, A5
  - ERG code (IATA): 6L

- **Inland waterway transport**
  - Classification code (ADN): T5
  - Special provisions (ADN): 274, 596, 802
  - Limited quantities (ADN): 5 kg
  - Excepted quantities (ADN): E1
  - Equipment required (ADN): PP, EP
  - Number of blue cones/lights (ADN): 0

- **Rail transport**
  - Classification code (RID): T5
  - Special provisions (RID): 274, 596
  - Limited quantities (RID): 5kg
  - Excepted quantities (RID): E1
  - Packing instructions (RID): P002, IBC08, LP02, R001
  - Special packing provisions (RID): B3
  - Mixed packing provisions (RID): MP10
  - Portable tank and bulk container instructions (RID): T1
  - Portable tank and bulk container special provisions (RID): TP33
  - Tank codes for RID tanks (RID): SGAH, L4BH
  - Special provisions for RID tanks (RID): TU15
  - Transport category (RID): 2
  - Special provisions for carriage – Bulk (RID): VC1, VC2, AP7
  - Special provisions for carriage - Loading, unloading and handling (RID): CW13, CW28, CW31
  - Colis express (express parcels) (RID): CE11
  - Hazard identification number (RID): 60

14.7. **Transport in bulk according to Annex II of Marpol and the IBC Code**

Not applicable

**SECTION 15: Regulatory information**

15.1. **Safety, health and environmental regulations/legislation specific for the substance or mixture**

15.1.1. **EU-Regulations**

No REACH Annex XVII restrictions

CADMIUM DIETHYLDITHIOCARBAMATE, 96% is not on the REACH Candidate List

CADMIUM DIETHYLDITHIOCARBAMATE, 96% is not on the REACH Annex XIV List


% Volatiles: < 1 %

15.1.2. **National regulations**

Germany
CADMIUM DIETHYLDITHIOCARBAMATE, 96%
Safety Data Sheet

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV: Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands
SZW-lijs van kankerverwekkende stoffen: The substance is not listed
SZW-lijs van mutagene stoffen: The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding: The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid: The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling: The substance is not listed

Denmark
Danish National Regulations: Young people below the age of 18 years are not allowed to use the product

15.2. Chemical safety assessment
No additional information available

SECTION 16: Other information
Abbreviations and acronyms:
Abbreviations: ND: Not Determined, No Data; NA: Not Applicable; LD: Lethal Dose; LC: Lethal Concentration; ATE: Acute Toxicity Estimates; H: hour; °: °C unless otherwise stated; mm: millimeters Hg, torr; PEL: permissible exposure level; TWA: time weighted average; TLV: threshold limit value; TG: Test Guideline; NIOSH: National Institute for Occupational Safety and Health; IARC: International Agency for Research on Cancer; NTM: National Toxicology Program; HMIS: Hazardous Material Information System; CAS No.: Chemical Abstract Service Registration Number; EC No.: European Commission Registration Number; EC Index No.: European Commission Index Number; OECD: The Organisation for Economic Co-operation and Development; GHS: The Globally Harmonized System of Classification and Labelling; APF: Assigned Protection Factor

Other information: Prepared by safety and environmental affairs.
Full text of H- and EUH-statements:

| H302 | Harmful if swallowed. |
| H315 | Causes skin irritation. |
| H319 | Causes serious eye irritation. |
| H331 | Toxic if inhaled. |

SDS EU (REACH Annex II) - Custom

The information contained in this document has been gathered from reference materials and/or Gelest, Inc. test data and is to the best knowledge and belief of Gelest, Inc. accurate and reliable. Such information is offered solely for your consideration, investigation and verification. It is not suggested or guaranteed that the hazard precautions or procedures described are the only ones which exist. Gelest, Inc. makes no warranties, express or implied, with respect to the use of such information and assumes no responsibility therefore. Information on this safety data sheet is not intended to constitute a basis for product specifications.

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