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

## 1.1. Product identifier

<table>
<thead>
<tr>
<th>Parameter</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>ZINC DIETHYLDITHIOCARBAMATE</td>
</tr>
<tr>
<td>Product code</td>
<td>AKZ932.8</td>
</tr>
<tr>
<td>Formula</td>
<td>C10H20N2S4Zn</td>
</tr>
<tr>
<td>Synonyms</td>
<td>ZINC BIS(DIETHYLDITHIOCARBAMATE)</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

- **Use of the substance/mixture**: Chemical intermediate
- **For research and industrial use only**

## 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

## 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

**Classification (GHS-US)**
- Skin Irrit. 2: H315
- Eye Irrit. 2A: H319

**Full text of H-phrases: see section 16**

## 2.2. Label elements

**GHS-US labelling**

- **Hazard pictograms (GHS-US)**: ![](https://example.com/pictogram)

**Signal word (GHS-US)**: Warning

**Hazard statements (GHS-US)**
- H315 - Causes skin irritation
- H319 - Causes serious eye irritation

**Precautionary statements (GHS-US)**
- P280 - Wear protective gloves/protective clothing/eye protection/face protection
- P264 - Wash hands thoroughly after handling
- P302+P352 - If on skin: Wash with plenty of water
- P332+P313 - If skin irritation occurs: Get medical advice/attention
- P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- P337+P313 - If eye irritation persists: Get medical advice/attention
- P362 - Take off contaminated clothing and wash before reuse

## 2.3. Other hazards

No additional information available

## 2.4. Unknown acute toxicity (GHS-US)

No data available

# SECTION 3: Composition/information on ingredients

## 3.1. Substance

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substance type</td>
<td>Mono-constituent</td>
</tr>
<tr>
<td>Name</td>
<td>ZINC DIETHYLDITHIOCARBAMATE</td>
</tr>
</tbody>
</table>
**ZINC DIETHYLDITHIOCARBAMATE**
Safety Data Sheet

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification (GHS-US)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc diethyldithiocarbamate</td>
<td>(CAS No) 14324-55-1</td>
<td>&gt; 95</td>
<td>Skin Irrit. 2, H315</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Eye Irrit. 2A, H319</td>
</tr>
</tbody>
</table>

### 3.2. Mixture
Not applicable

**SECTION 4: First aid measures**

<table>
<thead>
<tr>
<th>4.1. Description of first aid measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>First-aid measures general</td>
</tr>
<tr>
<td>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.</td>
</tr>
<tr>
<td>First-aid measures after inhalation</td>
</tr>
<tr>
<td>Remove victim to fresh air and keep at rest in a position comfortable for breathing. If you feel unwell, seek medical advice.</td>
</tr>
<tr>
<td>First-aid measures after skin contact</td>
</tr>
<tr>
<td>Wash with plenty of soap and water. Get medical advice/attention.</td>
</tr>
<tr>
<td>First-aid measures after eye contact</td>
</tr>
<tr>
<td>Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.</td>
</tr>
<tr>
<td>First-aid measures after ingestion</td>
</tr>
<tr>
<td>Never give anything by mouth to an unconscious person. Get medical advice/attention.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4.2. Most important symptoms and effects, both acute and delayed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms/injuries after inhalation</td>
</tr>
<tr>
<td>May cause irritation to the respiratory tract. May cause somnolence, excitement, ataxia, convulsions, weight loss.</td>
</tr>
<tr>
<td>Symptoms/injuries after skin contact</td>
</tr>
<tr>
<td>Causes skin irritation.</td>
</tr>
<tr>
<td>Symptoms/injuries after eye contact</td>
</tr>
<tr>
<td>Causes serious eye irritation.</td>
</tr>
<tr>
<td>Symptoms/injuries after ingestion</td>
</tr>
<tr>
<td>May be harmful if swallowed.</td>
</tr>
</tbody>
</table>

**SECTION 5: Firefighting measures**

<table>
<thead>
<tr>
<th>5.1. Extinguishing media</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suitable extinguishing media</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5.2. Special hazards arising from the substance or mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire hazard</td>
</tr>
<tr>
<td>Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.</td>
</tr>
</tbody>
</table>

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

**SECTION 6: Accidental release measures**

<table>
<thead>
<tr>
<th>6.1. Personal precautions, protective equipment and emergency procedures</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1.1. For non-emergency personnel</td>
</tr>
<tr>
<td>Emergency procedures</td>
</tr>
<tr>
<td>Evacuate unnecessary personnel.</td>
</tr>
<tr>
<td>6.1.2. For emergency responders</td>
</tr>
<tr>
<td>Protective equipment</td>
</tr>
<tr>
<td>Equip cleanup crew with proper protection.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6.2. Environmental precautions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevent entry to sewers and public waters.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6.3. Methods and material for containment and cleaning up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methods for cleaning up</td>
</tr>
<tr>
<td>Sweep or shovel spills into appropriate container for disposal.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6.4. Reference to other sections</th>
</tr>
</thead>
<tbody>
<tr>
<td>See Heading 8. Exposure controls and personal protection.</td>
</tr>
</tbody>
</table>

**SECTION 7: Handling and storage**

<table>
<thead>
<tr>
<th>7.1. Precautions for safe handling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precautions for safe handling</td>
</tr>
<tr>
<td>Avoid contact with skin and eyes. Do not breathe dust. Provide local exhaust or general room ventilation to minimize exposure to dust.</td>
</tr>
</tbody>
</table>
Hygiene measures: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities
Storage conditions: Keep container tightly closed.
Incompatible materials: Oxidizing agent.
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>Zinc diethyldithiocarbamate (14324-55-1)</th>
<th></th>
<th>1 mg/m³ as Zn</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA ACGIH ACGIH TWA (mg/m³)</td>
<td>---</td>
<td>-------------</td>
</tr>
</tbody>
</table>

8.2. Exposure controls
Appropriate engineering controls: Provide local exhaust or general room 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
Physical state: Solid
Appearance: Powder
Molecular mass: 361.91 g/mol
Color: No data available
Odor: No data available
Odor threshold: No data available
Refractive index: No data available
pH: No data available
Relative evaporation rate (butyl acetate=1): No data available
Melting point: 171 - 181 °C
Freezing point: No data available
Boiling point: No data available
Flash point: No data available
Auto-ignition temperature: No data available
Decomposition temperature: No data available
Flammability (solid, gas): No data available
Vapor pressure: < 0.1 mm Hg @ 25°C
Relative vapor density at 20 °C: No data available
Relative density: 1.48
VOC content: < 1 %
Solubility: Slightly. Soluble in water.
Log Pow: No data available
Log Kow: No data available
Viscosity, kinematic: No data available
Viscosity, dynamic: No data available
Explosive properties: No data available
Oxidizing properties: No data available
Explosive limits: No data available

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
Oxidizing agent.

10.6. Hazardous decomposition products
Organic acid vapors. Zinc oxide fumes.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

<table>
<thead>
<tr>
<th>Zinc diethyldithiocarbamate (14324-55-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
</tr>
<tr>
<td>ATE US (oral)</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation : Causes skin irritation.
Serious eye damage/irritation : Causes serious eye irritation.
Respiratory or skin sensitization : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Not classified
Specific target organ toxicity (single exposure) : Not classified
Specific target organ toxicity (repeated exposure) : Not classified
Aspiration hazard : Not classified
Symptoms/injuries after inhalation : May cause irritation to the respiratory tract. May cause somnolence, excitement, ataxia, convulsions, weight loss.
Symptoms/injuries after skin contact : Causes skin irritation.
Symptoms/injuries after eye contact : Causes serious eye irritation.
Symptoms/injuries after ingestion : May be harmful if swallowed.
Reason for classification : Expert judgment

SECTION 12: Ecological information

12.1. Toxicity
No additional information available

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. Other adverse effects
Other adverse effects : This substance may be hazardous to the environment.
Effect on ozone layer : No additional information available
Effect on the global warming : No known ecological damage caused by this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Waste disposal recommendations : Dispose of solid materials or residues at a licensed site. Dispose in a safe manner in accordance with local/national regulations.
ZINC DIETHYLDITHIOCARBAMATE
Safety Data Sheet

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

14.1. UN number
Not regulated for transport.

14.2. UN proper shipping name
Not applicable

14.3. Additional information
Other information : No supplementary information available.

Transport by sea
No additional information available

Air transport
No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

Zinc diethyldithiocarbamate (14324-55-1)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

Zinc diethyldithiocarbamate (14324-55-1)
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on the Canadian DSL (Domestic Substances List)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the Canadian IDL (Ingredient Disclosure List)

15.3. US State regulations

ZINC DIETHYLDITHIOCARBAMATE(14324-55-1)

U.S. - California - Proposition 65 - Carcinogens List No
U.S. - California - Proposition 65 - Developmental Toxicity No
U.S. - California - Proposition 65 - Reproductive Toxicity - Female No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male No

Zinc diethyldithiocarbamate (14324-55-1)

U.S. - California - Carcinogens List No
U.S. - California - Developmental Toxicity No
U.S. - California - Reproductive Toxicity - Female No
U.S. - California - Reproductive Toxicity - Male No
U.S. - Propensity 65 - Reproductive Toxicity - Male No

Zinc diethyldithiocarbamate (14324-55-1)

U.S. - Delaware - Pollutant Discharge Requirements - Reportable Quantities No
U.S. - Massachusetts - Toxics Use Reduction Act No
U.S. - Michigan - Polluting Materials List No
U.S. - Vermont - Hazardous Waste - Hazardous Constituents No
U.S. - Washington - Dangerous Waste - Dangerous Waste Constituents List No

No significance risk level (NSRL)
SECTION 16: Other information

Abbreviations and acronyms:

- **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
- **torr**: millimeters Hg
- **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
- **NTP**: 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.

Full text of H-phrases:

<table>
<thead>
<tr>
<th>H-Phrase</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye Irrit. 2A</td>
<td>Serious eye damage/eye irritation Category 2A</td>
</tr>
<tr>
<td>Skin Irrit. 2</td>
<td>Skin corrosion/irritation Category 2</td>
</tr>
<tr>
<td>H315</td>
<td>Causes skin irritation</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation</td>
</tr>
</tbody>
</table>

**HMIS III Rating**

- **Health**: 2 Moderate Hazard - Temporary or minor injury may occur
- **Flammability**: 1 Slight Hazard
- **Physical**: 0 Minimal Hazard

Prepared by safety and environmental affairs.

Date of issue: 02/11/2015
Version: 1.0

SDS US (GHS HazCom 2012) - Custom

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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