

SAFETY DATA SHEET

 GHS
 United States

Section 1. Product and company identification

| | | |
|------------------------------|--|--|
| Product name | AMYL ZIMATE® | <u>In case of emergency</u> |
| Code | 74555 | 1-203-853-1400 |
| Supplier/Manufacturer | Vanderbilt Chemicals, LLC 30 Winfield Street Norwalk, CT 06855 | Chemtrec: 1-800-424-9300 Outside US: +1-703-527-3887 |
| Synonym | Zinc diamyldithiocarbamate in oil. | |
| Material uses | Accelerator. | |
| Product type | Liquid. | |

Section 2. Hazards identification

| | |
|---|--|
| OSHA/HCS status | While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product. |
| Classification of the substance or mixture | Not classified. |
| GHS label elements | |
| Signal word | No signal word. |
| Hazard statements | No known significant effects or critical hazards. |
| Precautionary statements | |
| Prevention | Not applicable. |
| Response | Not applicable. |
| Storage | Not applicable. |
| Disposal | Not applicable. |
| Hazards not otherwise classified | None known. |

Section 3. Composition/information on ingredients

Substance/mixture Mixture

| Ingredient name | CAS number | % by weight |
|--|------------|-------------|
| zinc diamyldithiocarbamate | 15337-18-5 | 50 |
| petroleum process oil, <3.0% DMSO extractable material | 64742-52-5 | 50 |

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

| | |
|---------------------|---|
| Eye contact | Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs. |
| Inhalation | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. |
| Skin contact | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. |
| Ingestion | Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur. |

Most important symptoms/effects, acute and delayed

Potential acute health effects

| | |
|---------------------|---|
| Eye contact | No known significant effects or critical hazards. |
| Inhalation | No known significant effects or critical hazards. |
| Skin contact | No known significant effects or critical hazards. |
| Ingestion | No known significant effects or critical hazards. |

Over-exposure signs/symptoms

| | |
|---------------------|-------------------|
| Eye contact | No specific data. |
| Inhalation | No specific data. |
| Skin contact | No specific data. |
| Ingestion | No specific data. |

Indication of immediate medical attention and special treatment needed, if necessary

| | |
|-----------------------------------|---|
| Notes to physician | In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. |
| Specific treatments | No specific treatment. |
| Protection of first-aiders | No action shall be taken involving any personal risk or without suitable training. |

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

| | |
|---------------------------------------|---|
| Suitable extinguishing media | Use an extinguishing agent suitable for the surrounding fire. |
| Unsuitable extinguishing media | None known. |

Specific hazards arising from the chemical In a fire or if heated, a pressure increase will occur and the container may burst.

Section 5. Fire-fighting measures

Hazardous thermal decomposition products

Decomposition products may include the following materials:
 carbon dioxide
 carbon monoxide
 nitrogen oxides
 sulfur oxides
 metal oxide/oxides

Special protective actions for fire-fighters

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

For emergency responders

If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill

Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill

Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures

Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Section 7. Handling and storage

Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

| Ingredient name | Exposure limits |
|--|---|
| petroleum process oil, <3.0% DMSO extractable material | <p>ACGIH TLV (United States, 3/2012). TWA: 5 mg/m³ 8 hours. Form: Inhalable fraction</p> <p>NIOSH REL (United States, 1/2013). TWA: 5 mg/m³ 10 hours. Form: Mist STEL: 10 mg/m³ 15 minutes. Form: Mist</p> <p>ACGIH TLV (United States). STEL: 10 mg/m³</p> <p>OSHA PEL (United States, 6/2010). TWA: 5 mg/m³ 8 hours.</p> |

Appropriate engineering controls

Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields. Recommended: splash goggles

Skin protection

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body protection

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Recommended: lab coat

Other skin protection

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Section 8. Exposure controls/personal protection

Respiratory protection

Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Personal protective equipment (Pictograms)



Section 9. Physical and chemical properties

Appearance

| | |
|---|--|
| Physical state | Liquid. |
| Color | Amber. |
| Odor | Not available. |
| Odor threshold | Not available. |
| pH | Not available. |
| Melting point | Not available. |
| Boiling point | Not available. |
| Flash point | Closed cup: 136°C (276.8°F) [Pensky-Martens.] |
| Burning time | Not applicable. |
| Burning rate | Not applicable. |
| Evaporation rate | 0.01 (butyl acetate = 1) |
| Flammability (solid, gas) | Not available. |
| Lower and upper explosive (flammable) limits | Not available. |
| Vapor pressure | <0.0013 kPa (<0.01 mm Hg) [room temperature] |
| Vapor density | 5 [Air = 1] |
| Density | 0.9 g/cm ³ [25°C (77°F)] |
| Relative density | 0.9 |
| Solubility | Easily soluble in the following materials: acetone. Insoluble in the following materials: cold water. |
| Solubility in water | Not available. |
| Partition coefficient: n-octanol/water | Not available. |
| Auto-ignition temperature | Not available. |
| Decomposition temperature | Not available. |
| SADT | Not available. |
| Viscosity | Kinematic (room temperature): 3.36 cm ² /s (336 cSt) [at 25°C] |

Section 10. Stability and reactivity

| | |
|---|--|
| Reactivity | No specific test data related to reactivity available for this product or its ingredients. |
| Chemical stability | The product is stable. |
| Possibility of hazardous reactions | Under normal conditions of storage and use, hazardous reactions will not occur. |
| Conditions to avoid | No specific data. |
| Incompatible materials | No specific data. |
| Hazardous decomposition products | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

| Product/ingredient name | Result | Species | Dose | Exposure |
|--|-------------|---------|-------------|----------|
| petroleum process oil, <3.0% DMSO extractable material | LD50 Dermal | Rabbit | >2000 mg/kg | - |
| zinc diamylidithiocarbamate | LD50 Oral | Rat | >5000 mg/kg | - |
| | LD50 Oral | Rat | >2000 mg/kg | - |

Irritation/Corrosion

Not available.

Conclusion/Summary

| | |
|-------------|---|
| Skin | Non-irritating to the skin. (Reconstructed Human Epidermis Test Method) |
| Eyes | Non-irritating to the eyes. (Rabbit) |

Sensitization

| Product/ingredient name | Route of exposure | Species | Result |
|-----------------------------|-------------------|---------|-----------------|
| zinc diamylidithiocarbamate | skin | Mouse | Not sensitizing |

Mutagenicity

| Product/ingredient name | Test | Experiment | Result |
|-----------------------------|----------|---|----------|
| zinc diamylidithiocarbamate | OECD 471 | Experiment: In vitro Subject: Bacteria | Negative |
| | OECD 490 | Experiment: In vitro Subject: Mammalian-Animal | Negative |
| | OECD 487 | Experiment: In vitro Subject: Mammalian-Human | Negative |

Carcinogenicity

Section 11. Toxicological information

Not available.

Reproductive toxicity

| Product/ingredient name | Maternal toxicity | Fertility | Development toxin | Species | Dose | Exposure |
|----------------------------|-------------------|-----------|-------------------|---------|-----------------|----------|
| zinc diamyldithiocarbamate | - | - | - | Rat | Oral: 250 mg/kg | - |

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure

Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

| | |
|---------------------|---|
| Eye contact | No known significant effects or critical hazards. |
| Inhalation | No known significant effects or critical hazards. |
| Skin contact | No known significant effects or critical hazards. |
| Ingestion | May be harmful if swallowed. |

Symptoms related to the physical, chemical and toxicological characteristics

| | |
|---------------------|-------------------|
| Eye contact | No specific data. |
| Inhalation | No specific data. |
| Skin contact | No specific data. |
| Ingestion | No specific data. |

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

| | |
|------------------------------------|----------------|
| Potential immediate effects | Not available. |
| Potential delayed effects | Not available. |

Long term exposure

| | |
|------------------------------------|----------------|
| Potential immediate effects | Not available. |
| Potential delayed effects | Not available. |

Potential chronic health effects

Section 11. Toxicological information

| Product/ingredient name | Result | Species | Dose | Exposure |
|-----------------------------|------------------------|---------|-----------|----------|
| zinc diamylidithiocarbamate | Sub-chronic NOAEL Oral | Rat | 250 mg/kg | - |

| | |
|------------------------------|---|
| General | No known significant effects or critical hazards. |
| Carcinogenicity | No known significant effects or critical hazards. |
| Mutagenicity | No known significant effects or critical hazards. |
| Teratogenicity | No known significant effects or critical hazards. |
| Developmental effects | No known significant effects or critical hazards. |
| Fertility effects | No known significant effects or critical hazards. |

Numerical measures of toxicity

Acute toxicity estimates

| Route | ATE value |
|-------|------------|
| Oral | 5000 mg/kg |

Other information

Not available.

Section 12. Ecological information

Toxicity

| Product/ingredient name | Result | Species | Exposure |
|-----------------------------|--|----------------------------------|--------------------|
| zinc diamylidithiocarbamate | Acute EC50 >1000 mg/l Acute NOEC >1000 mg/l | Micro-organism Micro-organism | 3 hours 3 hours |

Conclusion/Summary

zinc diamylidithiocarbamate:

Fish: In an OECD 203 study, the 96 hour toxicity (LC50) of exposure of fathead minnow to the test item resulted in an LC50 value of greater than 100% v/v saturated solution, based on the nominal test concentration. The No Observed Effect Concentration (NOEC) was 100% v/v saturated solution.

Invertebrates: In an OECD 202 study, the acute toxicity of the test item to the freshwater invertebrate daphnia magna was investigated and based on the geometric mean measured test concentrations gave a 48-Hour EC50 value of greater than 0.0076 mg/L as zinc (equivalent to 0.071 mg/L as test item). The No Observed Effect Concentration was 0.0076 mg/L as zinc (equivalent to 0.071 mg/L as test item) mg/L. This study showed that there were no toxic effects at saturation.

Algae: In an OECD 201 study, the effect of the test item on the growth of Pseudokirchneriella subcapitata was investigated and the 72-hour EC50 value based on growth rate was determined to be greater than 100% v/v saturated solution. The NOEC was given as 12.5% v/v saturated solution and the LOEC determined to be 25% v/v saturated solution.

Persistence and degradability

| Product/ingredient name | Test | Result | Dose | Inoculum |
|-----------------------------|-----------|------------------------------|------|----------|
| zinc diamylidithiocarbamate | OECD 301B | 21 % - Not readily - 28 days | - | - |

| Product/ingredient name | Aquatic half-life | Photolysis | Biodegradability |
|-----------------------------|-------------------|------------|------------------|
| zinc diamylidithiocarbamate | - | - | Not readily |

Section 12. Ecological information

Bioaccumulative potential

| Product/ingredient name | LogP _{ow} | BCF | Potential |
|----------------------------|--------------------|-----|-----------|
| zinc diamyldithiocarbamate | >9.4 | - | high |

Mobility in soil

Soil/water partition coefficient (K_{oc}) Not available.

Other adverse effects No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Section 14. Transport information

| Regulatory information | UN number | Proper shipping name | Classes | PG* | Label | Additional information |
|---------------------------|----------------|----------------------|---------|-----|-------|------------------------|
| DOT Classification | Not regulated. | - | - | - | | - |
| TDG Classification | Not regulated. | - | - | - | | - |
| ADR/RID Class | Not regulated. | - | - | - | | - |
| IMDG Class | Not regulated. | - | - | - | | - |
| IATA-DGR Class | Not regulated. | - | - | - | | - |

PG* : Packing group

Section 15. Regulatory information

United States inventory (TSCA 8b) All components are listed or exempted.

U.S. Federal regulations

TSCA 8(a) CDR Exempt/Partial exemption: Not determined

Clean Water Act (CWA) 307: zinc bis(dipentyldithiocarbamate)

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ Not applicable.

SARA 311/312

Classification Not applicable.

Composition/information on ingredients

No products were found.

SARA 313

| | Product name | CAS number | % |
|--|----------------------------|------------|----|
| Form R - Reporting requirements | zinc diamyldithiocarbamate | 15337-18-5 | 50 |
| Supplier notification | zinc diamyldithiocarbamate | 15337-18-5 | 50 |

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts

The following components are listed: OIL MIST, MINERAL

New York

None of the components are listed.

New Jersey

The following components are listed: ZINC compounds; MINERAL OIL (UNTREATED and MILDLY TREATED)

Pennsylvania

The following components are listed: ZINC COMPOUNDS

California Prop. 65

None of the components are listed.

International regulations

Australia inventory (AICS)

All components are listed or exempted.

Canada inventory

All components are listed or exempted.

China inventory (IECSC)

All components are listed or exempted.

Europe inventory

All components are listed or exempted.

Japan inventory (ENCS)

All components are listed or exempted.

Korea inventory (KECI)

All components are listed or exempted.

New Zealand Inventory of Chemicals (NZIoC)

All components are listed or exempted.

Philippines inventory (PICCS)

All components are listed or exempted.

Taiwan Chemical Substances Inventory (TCSI)

All components are listed or exempted.

Section 16. Other information

Hazardous Material Identification System (U.S.A.)

| | |
|------------------|---|
| Health | 0 |
| Flammability | 1 |
| Physical hazards | 0 |
| | |

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)



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History

| | |
|------------------------|-----------|
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| Version | 3 |

Key to abbreviations

ATE = Acute Toxicity Estimate
 BCF = Bioconcentration Factor
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals
 IATA = International Air Transport Association
 IBC = Intermediate Bulk Container
 IMDG = International Maritime Dangerous Goods
 LogPow = logarithm of the octanol/water partition coefficient
 MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
 UN = United Nations

References

Not available.

Information contact

Vanderbilt Global Services, LLC
Corporate Risk Management
1-203-295-2143

Visit www.vanderbiltchemicals.com for more information.

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Section 16. Other information