Vanderbilt Chemicals, LLC
A Wholly Owned Subsidiary of R.T. Vanderbilt Holding Company, Inc.

# SAFETY DATA SHEET

GHS
United States

## Section 1. Product and company identification

**Product name** ISOBUTYL TUADS® (TiBTD) GRANULES

**Code** 40928

**Supplier/Manufacturer** Vanderbilt Chemicals, LLC
30 Winfield Street
Norwalk, CT 06855

**In case of emergency**
1-203-853-1400
Chemtrec: 1-800-424-9300
Outside US:
+1-703-527-3887

**Chemical name** Thioperoxydicarbonic diamide, tetrakis (2-methylpropyl)-

**Synonym** Tetraisobutylthiuram disulfide.

**Material uses** Accelerator.

**Product type** Solid.

## Section 2. Hazards identification

**OSHA/HCS status** This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

**Classification of the substance or mixture** COMBUSTIBLE DUSTS

**GHS label elements**

**Signal word** Warning

**Hazard statements** May form combustible dust concentrations in air.

**Precautionary statements**

**Prevention** Not applicable.

**Response** Not applicable.

**Storage** Not applicable.

**Disposal** Not applicable.

**Supplemental label elements** Keep container tightly closed. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Prevent dust accumulation.

**Hazards not otherwise classified** None known.

## Section 3. Composition/information on ingredients

**Substance/mixture** Substance

| Ingredient name | CAS number | % by weight |
|---|---|---|
| tetra(isobutyl)thioperoxydicarbamic acid | 3064-73-1 | 95 - 99 |

**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. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

**Inhalation** Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. 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. Wash clothing before reuse. Clean shoes thoroughly before reuse.

**Ingestion** Wash out mouth with water. Remove dentures if any. 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. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

## 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. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

**See toxicological information (Section 11)**

# Section 5. Fire-fighting measures

## Extinguishing media

**Suitable extinguishing media**

In case of fire, use water spray (fog), foam, dry chemical or $CO_2$.

**Unsuitable extinguishing media**

Avoid high pressure media which could cause the formation of a potentially explosible dust-air mixture.

**Specific hazards arising from the chemical**

May form explosible dust-air mixture if dispersed.

**Hazardous thermal decomposition products**

Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
sulfur 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. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

**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. Shut off all ignition sources. No flares, smoking or flames in hazard area. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. 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**

Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

**Large spill**

Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. 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). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Prevent dust accumulation. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

**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.

**Conditions for safe storage, including any incompatibilities**

Store in accordance with local regulations. Store in a segregated and approved area. 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. Eliminate all ignition sources. Separate from oxidizing materials. 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

None.

**Appropriate engineering controls**

The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

**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: safety glasses with side-shields

**Skin protection**

## Section 8. Exposure controls/personal 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. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

**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.

**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** Solid. [Granules]

**Color** Tan to Yellow. [Light]

**Odor** Not available.

**Odor threshold** Not available.

**pH** Not available.

**Melting point** 65°C (149°F)

**Boiling point** Not available.

**Flash point** Not available.

**Burning time** Not available.

**Burning rate** Not available.

**Evaporation rate** Not available.

**Flammability (solid, gas)** Not available.

**Lower and upper explosive (flammable) limits** Not available.

**Vapor pressure** Not available.

**Vapor density** Not available.

**Density** 1.15 g/cm³ [25°C (77°F)]

**Relative density** Not available.

**Solubility** Very slightly soluble 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.

## Section 9. Physical and chemical properties

**SADT** Not available.

**Viscosity** Not available.

## 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** Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Prevent dust accumulation.

**Incompatible materials** Reactive or incompatible with the following materials:
oxidizing materials

**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 |
|---|---|---|---|---|
| tetra(isobutyl) thioperoxydicarbamic acid | LC50 Inhalation Vapor | Rat | >5 mg/l At this concentration, no deaths occurred. | 4 hours |
| | LD50 Oral | Rat | >2000 mg/kg | - |

#### Irritation/Corrosion

Not available.

#### Conclusion/Summary

**Skin** tetra(isobutyl)thioperoxydicarbamic acid: Non-irritating to the skin. (EPISKIN Human Skin Model Test)

**Eyes** tetra(isobutyl)thioperoxydicarbamic acid: Non-irritating to the eyes. (Isolated Chicken Eye Test Method for Identifying Ocular Corrosives and Severe Irritants)

#### Sensitization

# Section 11. Toxicological information

| Product/ingredient name | Route of exposure | Species | Result |
|---|---|---|---|
| tetra(isobutyl) thioperoxydicarbamic acid | skin | Guinea pig | Not sensitizing |

## Mutagenicity

| Product/ingredient name | Test | Experiment | Result |
|---|---|---|---|
| tetra(isobutyl) thioperoxydicarbamic acid | OECD 471 | Experiment: In vitro<br>Subject: Bacteria | Negative |

## Carcinogenicity

Not available.

## Reproductive toxicity

Not available.

## 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** Not available.

## 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

# Section 11. Toxicological information

**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

Not available.

**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 | 2577.3 mg/kg |

**Other information** Not available.

# Section 12. Ecological information

## Toxicity

Not available.

**Conclusion/Summary**

tetra(isobutyl)thioperoxydicarbamic acid:
Fish: The LC50 and the LOEC results are higher than the solubility level of the test item in the test medium. Based on the results of this study, the test item tetra (isobutyl)thioperoxydicarbamic acid had no toxic effect at saturation on fish.

Invertebrates: The 48h EC50 value was >100% saturated solution (nominal). The 48h NOEC and LOEC values were 100% saturated solution (nominal) and >100% saturated solution (nominal), respectively. Based on the results of the study, the test item tetra(isobutyl)thioperoxydicarbamic acid had no toxic effect on daphnia at saturation.

Algae: The 72h EC50 value (growth rate) was >100% saturated solution. The 72h NOEC was 100% saturated solution. Based on the results of this study, the test item tetra(isobutyl)thioperoxydicarbamic acid had no toxic effect at saturation.

## Persistence and degradability

| Product/ingredient name | Test | Result | Dose | Inoculum |
|---|---|---|---|---|
| tetra(isobutyl) thioperoxydicarbamic acid | - | 8.2 % - Not readily - 28 days | - | - |

## Section 12. Ecological information

| Product/ingredient name | Aquatic half-life | Photolysis | Biodegradability |
|---|---|---|---|
| tetra(isobutyl) thioperoxydicarbamic acid | - | - | Not readily |

**Bioaccumulative potential**

| Product/ingredient name | $LogP_{ow}$ | BCF | Potential |
|---|---|---|---|
| tetra(isobutyl) thioperoxydicarbamic acid | 7.3 | - | 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. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. 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

**SARA 302/304**

**Composition/information on ingredients**

No products were found.

**SARA 304 RQ** Not applicable.

**SARA 311/312**

**Classification** COMBUSTIBLE DUSTS

**Composition/information on ingredients**

No products were found.

**State regulations**

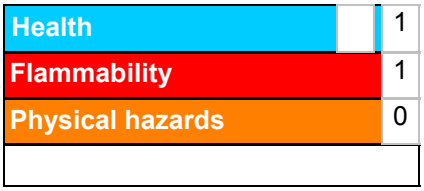
| | |
|---|---|
| **Massachusetts** | None of the components are listed. |
| **New York** | None of the components are listed. |
| **New Jersey** | None of the components are listed. |
| **Pennsylvania** | None of the components are listed. |
| **California Prop. 65** | None of the components are listed. |

**International regulations**

| | |
|---|---|
| **Australia inventory (AICS)** | At least one component is not listed. |
| **Canada inventory** | At least one component is not listed in DSL but all such components are listed in NDSL. |
| **China inventory (IECSC)** | At least one component is not listed. |
| **Europe inventory** | All components are listed or exempted. |
| **Japan inventory (ENCS)** | All components are listed or exempted. |
| **Korea inventory (KECI)** | At least one component is not listed. |
| **New Zealand Inventory of Chemicals (NZIoC)** | All components are listed or exempted. |
| **Philippines inventory (PICCS)** | At least one component is not listed. |
| **Taiwan Chemical Substances Inventory (TCSI)** | All components are listed or exempted. |

# Section 16. Other information

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



# Section 16. Other information

**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.)**


**Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.**

**History**

| | |
|---|---|
| **Date of printing** | 3/18/2019 |
| **Validation date** | 3/18/2019 |
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| **Version** | 4 |
| **Key to abbreviations** | ATE = Acute Toxicity Estimate<br>BCF = Bioconcentration Factor<br>GHS = Globally Harmonized System of Classification and Labelling of Chemicals<br>IATA = International Air Transport Association<br>IBC = Intermediate Bulk Container<br>IMDG = International Maritime Dangerous Goods<br>LogPow = logarithm of the octanol/water partition coefficient<br>MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)<br>UN = United Nations |
| **References** | Not available. |
| **Information contact** | **Vanderbilt Global Services, LLC**<br>**Corporate Risk Management**<br>**1-203-295-2143** |

**Visit www.vanderbiltchemicals.com for more information.**

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