

# SAFETY DATA SHEET

GHS  
United States

## Section 1. Product and company identification

<b>Product name</b>	<b>VANLUBE® 871</b>	<b><u>In case of emergency</u></b>
<b>Code</b>	53239	1-203-853-1400
<b>Supplier/Manufacturer</b>	Vanderbilt Chemicals, LLC 30 Winfield Street Norwalk, CT 06855	Chemtrec: 1-800-424-9300 Outside US: +1-703-527-3887
<b>Synonym</b>	2,5-Dimercapto-1,3,4-thiadiazole, alkyl polycarboxylates	
<b>Material uses</b>	Lubricant additives	
<b>Product type</b>	Liquid.	

## 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** SKIN SENSITIZATION - Category 1A

### GHS label elements

#### Hazard pictograms



**Signal word** Warning  
**Hazard statements** May cause an allergic skin reaction.

### Precautionary statements

**Prevention** Wear protective gloves. Avoid breathing vapor. Contaminated work clothing should not be allowed out of the workplace.

**Response** IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical attention.

**Storage** Not applicable.

**Disposal** Dispose of contents and container in accordance with all local, regional, national and international regulations.

**Hazards not otherwise classified** None known.

## Section 3. Composition/information on ingredients

### Substance/mixture

Substance

Ingredient name	CAS number	% by weight
butanedioic acid ((4,5-dihydro-5-thioxo-1,3,4-thiadiazol-2-yl) thio-bis (2-ethylhexyl) ester	126104-53-8	>95

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

## Section 4. First aid measures

### Description of necessary first aid measures

<b>Eye contact</b>	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.
<b>Inhalation</b>	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.
<b>Skin contact</b>	Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
<b>Ingestion</b>	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

<b>Eye contact</b>	No known significant effects or critical hazards.
<b>Inhalation</b>	Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
<b>Skin contact</b>	May cause an allergic skin reaction.
<b>Ingestion</b>	No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

<b>Eye contact</b>	No specific data.
<b>Inhalation</b>	No specific data.
<b>Skin contact</b>	Adverse symptoms may include the following: irritation redness
<b>Ingestion</b>	No specific data.

## Section 4. First aid measures

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

<b>Notes to physician</b>	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.
<b>Specific treatments</b>	No specific treatment.
<b>Protection of first-aiders</b>	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. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

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.

**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.

**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. Avoid breathing vapor or mist. 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

## Section 6. Accidental release measures

<b>Small spill</b>	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.
<b>Large spill</b>	Stop leak if without risk. Move containers from spill area. Approach release from upwind. 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. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

<b>Protective measures</b>	Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
<b>Advice on general occupational hygiene</b>	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.
<b>Conditions for safe storage, including any incompatibilities</b>	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.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

None.

#### **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

## Section 8. Exposure controls/personal protection

### 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. Contaminated work clothing should not be allowed out of the workplace. 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. 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

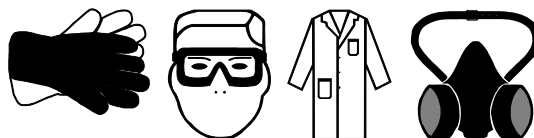
#### Other skin protection

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

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: Vapor and dust respirator.

### 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	<-20°C (<-4°F)
Boiling point	269°C (516.2°F)
Flash point	Closed cup: 190°C (374°F) [Setaflash.]
Burning time	Not applicable.
Burning rate	Not applicable.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Lower and upper explosive (flammable) limits	Not available.

## Section 9. Physical and chemical properties

<b>Vapor pressure</b>	Not available.
<b>Vapor density</b>	>1 [Air = 1]
<b>Density</b>	1.1 g/cm <sup>3</sup>
<b>Relative density</b>	1.12
<b>Solubility</b>	Insoluble in the following materials: cold water.
<b>Solubility in water</b>	Not available.
<b>Partition coefficient: n-octanol/water</b>	>4.59
<b>Auto-ignition temperature</b>	288°C (550.4°F)
<b>Decomposition temperature</b>	Not available.
<b>SADT</b>	Not available.
<b>Viscosity</b>	Kinematic (room temperature): 17.39 cm <sup>2</sup> /s (1739 cSt) [at 25°C]

## Section 10. Stability and reactivity

<b>Reactivity</b>	No specific test data related to reactivity available for this product or its ingredients.
<b>Chemical stability</b>	The product is stable.
<b>Possibility of hazardous reactions</b>	Under normal conditions of storage and use, hazardous reactions will not occur.
<b>Conditions to avoid</b>	No specific data.
<b>Incompatible materials</b>	No specific data.
<b>Hazardous decomposition products</b>	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
butanedioic acid ((4,5-dihydro-5-thioxo-1,3,4-thiadiazol-2-yl) thio-bis(2-ethylhexyl) ester	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-

#### Irritation/Corrosion

## Section 11. Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
butanedioic acid ((4, 5-dihydro-5-thioxo-1,3, 4-thiadiazol-2-yl) thio-bis (2-ethylhexyl) ester	Skin - Mild irritant	Rabbit	-	-	-
	Eyes - Mild irritant	Rabbit	-	-	-

### Sensitization

Product/ingredient name	Route of exposure	Species	Result
butanedioic acid ((4, 5-dihydro-5-thioxo-1,3, 4-thiadiazol-2-yl) thio-bis (2-ethylhexyl) ester	skin	Guinea pig	Sensitizing

### Mutagenicity

Product/ingredient name	Test	Experiment	Result
butanedioic acid ((4, 5-dihydro-5-thioxo-1,3, 4-thiadiazol-2-yl) thio-bis (2-ethylhexyl) ester	-	Experiment: In vitro Subject: Bacteria	Negative
	OECD 473	Experiment: In vitro Subject: Mammalian-Human	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

Routes of entry anticipated: Oral, Dermal, Inhalation.

### Potential acute health effects

#### Eye contact

No known significant effects or critical hazards.

## Section 11. Toxicological information

<b>Inhalation</b>	No known significant effects or critical hazards.
<b>Skin contact</b>	May be harmful in contact with skin. May cause an allergic skin reaction.
<b>Ingestion</b>	No known significant effects or critical hazards.

### Symptoms related to the physical, chemical and toxicological characteristics

<b>Eye contact</b>	No specific data.
<b>Inhalation</b>	No specific data.
<b>Skin contact</b>	Adverse symptoms may include the following: irritation redness
<b>Ingestion</b>	No specific data.

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

#### Short term exposure

<b>Potential immediate effects</b>	Not available.
<b>Potential delayed effects</b>	Not available.

#### Long term exposure

<b>Potential immediate effects</b>	Not available.
<b>Potential delayed effects</b>	Not available.

#### Potential chronic health effects

Not available.

**Conclusion/Summary** NOAEL: 250 mg/kg/days (28-day repeat dose toxicity in rat)

A 28-day oral feeding study of rats by gavage was conducted with dosage levels of 50, 250 and 1,000 mg/kg/day. All animals survived. Pathological examination of organs showed microscopic changes in the liver of the mid and high dose male and female rats. These changes were characterized by enlargement of hepatocytes. Kidney changes were observed in the mid and high dose females. These changes were characterized by an increased basophilia of the cortical tubules predominantly in the distal convoluted tubules. The no effect level (NOEL) appears to be 50 mg/kg/day.

<b>General</b>	Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
<b>Carcinogenicity</b>	No known significant effects or critical hazards.
<b>Mutagenicity</b>	No known significant effects or critical hazards.
<b>Teratogenicity</b>	No known significant effects or critical hazards.
<b>Developmental effects</b>	No known significant effects or critical hazards.
<b>Fertility effects</b>	No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Route	ATE value
Dermal	2605.5 mg/kg

**Other information** Not available.



## Section 11. Toxicological information

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
butanedioic acid ((4, 5-dihydro-5-thioxo-1,3, 4-thiadiazol-2-yl) thio-bis (2-ethylhexyl) ester	Acute EC50 0.52 mg/l	Daphnia	48 hours
	Acute LC50 0.64 mg/l	Fish	96 hours
	Acute NOEC 0.32 mg/l	Daphnia	48 hours
	Acute NOEC 0.047 mg/l	Fish	96 hours

### Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
VANLUBE® 871	-	45 % - 28 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
VANLUBE® 871	-	-	Not readily

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
VANLUBE® 871	>4.59	-	high

### Mobility in soil

**Soil/water partition coefficient (K<sub>oc</sub>)** Not available.

**Other adverse effects** No known significant effects or critical hazards.

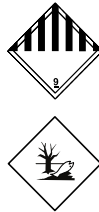
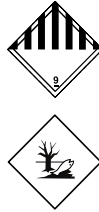
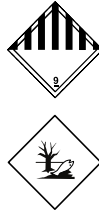
## Section 13. Disposal considerations

### 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
<b>DOT Classification</b>	Not regulated.	-	-	-		-
<b>TDG Classification</b>	Not regulated.	-	-	-		-
<b>ADR/RID Class</b>	3082	Environmentally hazardous substance, liquid, n.o.s. (2, 5-dimercapto-1,3, 4-thiadiazole, alkyl polycarboxylates)	9	III		<b>Remarks</b> Marine pollutant
<b>IMDG Class</b>	3082	Environmentally hazardous substance, liquid, n.o.s. (2, 5-dimercapto-1,3, 4-thiadiazole, alkyl polycarboxylates)	9	III		<b>Remarks</b> Marine pollutant
<b>IATA-DGR Class</b>	3082	Environmentally hazardous substance, liquid, n.o.s. (2, 5-dimercapto-1,3, 4-thiadiazole, alkyl polycarboxylates)	9	III		<b>Remarks</b> Marine pollutant

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](#)

SKIN SENSITIZATION - Category 1A

[Composition/information on ingredients](#)

Name	%	Classification
butanedioic acid ((4,5-dihydro-5-thioxo-1,3,4-thiadiazol-2-yl) thio-bis (2-ethylhexyl) ester	>95	SKIN SENSITIZATION - Category 1A

## Section 15. Regulatory information

### State regulations

<a href="#">Massachusetts</a>	None of the components are listed.
<a href="#">New York</a>	None of the components are listed.
<a href="#">New Jersey</a>	None of the components are listed.
<a href="#">Pennsylvania</a>	None of the components are listed.
<a href="#">California Prop. 65</a>	None of the components are listed.

### International regulations

<a href="#">Australia inventory (AICS)</a>	Not determined.
<a href="#">Canada inventory</a>	At least one component is not listed in DSL but all such components are listed in NDSL.
<a href="#">China inventory (IECSC)</a>	All components are listed or exempted.
<a href="#">Europe inventory</a>	At least one component is not listed in EINECS but all such components are listed in ELINCS. Please contact your supplier for information on the inventory status of this material. <b>EINECS: European Inventory.</b> This product contains the following chemical(s) for which one or more Pre-Market Notifications have been filed. Should you wish to export products containing this product into an EC country, contact Product Risk Manager at Vanderbilt Global Services, LLC at 203-295-2143 for more information.  Chemical name: butanedioic acid (4,5-dihydro-5-thioxo-1,3,4-thiadiazol-2-yl) thio-bis (2-ethylhexyl) ester CAS No.: 126104-53-8
<a href="#">Japan inventory (ENCS)</a>	Not determined.
<a href="#">Korea inventory (KECI)</a>	Not determined.
<a href="#">New Zealand Inventory of Chemicals (NZIoC)</a>	Not determined.
<a href="#">Philippines inventory (PICCS)</a>	Not determined.
<a href="#">Taiwan Chemical Substances Inventory (TCSI)</a>	All components are listed or exempted.

## Section 16. Other information

<a href="#">Hazardous Material Identification System (U.S.A.)</a>	Health	*	2
	Flammability		1
	Physical hazards		0

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.)



## Section 16. Other information

### History

**Date of printing** 11/20/2017

**Validation date** 11/20/2017

**Date of previous issue** 2/17/2015

**Version** 2

### 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](http://www.vanderbiltchemicals.com) for more information.

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