

# SAFETY DATA SHEET

GHS  
United States

## Section 1. Product and company identification

<b>Product name</b>	<b>VANLUBE® 81</b>	<b><u>In case of emergency</u></b>
<b>Code</b>	53305	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>Chemical name</b>	Bis(4-(1,1,3,3-tetramethylbutyl)phenyl)amine	
<b>Synonym</b>	Not available.	
<b>Material uses</b>	Lubricant additives	
<b>Product type</b>	Powder.	

## Section 2. Hazards identification

<b>OSHA/HCS status</b>	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
<b>Classification of the substance or mixture</b>	COMBUSTIBLE DUSTS
<b><u>GHS label elements</u></b>	
<b>Signal word</b>	Warning
<b>Hazard statements</b>	May form combustible dust concentrations in air.
<b><u>Precautionary statements</u></b>	
<b>Prevention</b>	Not applicable.
<b>Response</b>	Not applicable.
<b>Storage</b>	Not applicable.
<b>Disposal</b>	Not applicable.
<b>Supplemental label elements</b>	Keep container tightly closed. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Prevent dust accumulation.
<b>Hazards not otherwise classified</b>	None known.

## Section 3. Composition/information on ingredients

**Substance/mixture**                      Substance

<b>Ingredient name</b>	<b>CAS number</b>	<b>% by weight</b>
bis(4-(1,1,3,3-tetramethylbutyl)phenyl)amine	15721-78-5	≥93
alkylated diphenylamines (isomers)	-	≤7

## Section 3. Composition/information on ingredients

Bis(4-(1,1,3,3-tetramethylbutyl)phenyl)amine (CAS 15721-78-5) is a mono-constituent substance with alkylated diphenylamines (isomers) as impurities.

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. Get medical attention if irritation occurs.
<b>Inhalation</b>	Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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 contaminated skin with soap and water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
<b>Ingestion</b>	Wash out mouth with water. 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.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

<b>Eye contact</b>	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.
<b>Inhalation</b>	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.
<b>Skin contact</b>	No known significant effects or critical hazards.
<b>Ingestion</b>	No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

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

### 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.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

<b>Suitable extinguishing media</b>	In case of fire, use water spray (fog), foam, dry chemical or CO <sub>2</sub> .
<b>Unsuitable extinguishing media</b>	Avoid high pressure media which could cause the formation of a potentially explosible dust-air mixture.

### Specific hazards arising from the chemical

<b>Hazardous thermal decomposition products</b>	May form explosible dust-air mixture if dispersed.  Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides
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### 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.

### Remark

As with any dry material, pouring or allowing to free-fall or to be conveyed through chutes or pipes can accumulate and generate electrostatic sparks, potentially causing ignition of the material itself, or of any flammable materials which may come in contact with the material or its container.

### Remark(s)

Dust suspended in air in critical proportions and in the presence of an ignition source presents an explosion hazard. The following characteristics apply to powder and also, are expected to apply to dust from pastilles if this form is reduced to a powder:

- Minimum explosive concentration: 0.025 oz/ft<sup>3</sup> [25 g/m<sup>3</sup>]
- Minimum ignition energy (dust cloud): 0.20 joules [250.3 g/m<sup>3</sup>]
- Maximum rate of pressure rise: 11,300 psi/sec (0.1 oz/ft<sup>3</sup>) [779.1 bars/sec (100 g/m<sup>3</sup>)]
- Maximum pressure of explosion: 65 psig (2.0 oz/ft<sup>3</sup>) [4.48 bars (2002.31 g/m<sup>3</sup>)]
- Maximum pressure of explosion: 7.6 ± 10% (P<sub>max</sub>) (bar)
- (dP/dt)<sub>max</sub> (bar/s) = 919 ± 10%
- Dust-specific constant(K<sub>st</sub>) (bar. m/s): 249 ± 10%
- Explosion severity: 3.43 (Severe)
- Volume resistivity: 4.28 x 10<sup>15</sup> ohm-cm
- NFPA standard 499 rating (2008): Class II, Group G.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

<b>For non-emergency personnel</b>	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. Avoid breathing dust. Put on appropriate personal protective equipment.
<b>For emergency responders</b>	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".
<b>Environmental precautions</b>	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).

## Section 6. Accidental release measures

### 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. Use spark-proof tools and explosion-proof equipment. 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. Avoid creating dusty conditions and prevent wind dispersal. 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 breathing dust. 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

#### Exposure Limits for Total Product

##### **As particles not otherwise specified (PNOS).**

TLV® TWA: 10 mg/m<sup>3</sup> inhalable particles (ACGIH)  
3 mg/m<sup>3</sup> respirable particles (ACGIH)

##### **As particles not otherwise regulated (PNOR).**

TWA: 15 mg/m<sup>3</sup> total dust (OSHA)  
5 mg/m<sup>3</sup> respirable dust (OSHA)

## Section 8. Exposure controls/personal protection

### Appropriate engineering controls

Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. 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. If operating conditions cause high dust concentrations to be produced, use dust goggles. Recommended: safety glasses with side-shields

#### 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

When product is used as supplied in solid / particulate form:

When used in applications where inhalable airborne particulate concentrations may be generated and detected in accordance with NIOSH analytical method 0500, one of the following types of respirators may be necessary:

- a NIOSH-approved N-95 air-purifying, half mask respirator when aerosol concentrations (inhalable particulate mass) are between 15 mg/m<sup>3</sup> and 100 mg/m<sup>3</sup>;
- a supplied-air respirator operated in a continuous-flow mode when aerosol concentrations (inhalable particulate mass) are less than 1,000 mg/m<sup>3</sup>;
- a powered, air-purifying respirator with a high-efficiency particulate filter when aerosol concentrations (inhalable particulate mass) are less than 1,000 mg/m<sup>3</sup>;
- an air-purifying, full-facepiece respirator with an N-95 filter when aerosol concentrations (inhalable particulate mass) are 10,000 mg/m<sup>3</sup> or less;
- any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode during an emergency of, or planned entry into, unknown concentrations or IDLH conditions;
- any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus during an emergency of, or planned entry into, unknown concentrations or IDLH conditions.

## Section 8. Exposure controls/personal protection

### Personal protective equipment (Pictograms)



### Recommended Personal Protective Equipment (when used in metal working fluid formulations)

#### Respiratory Protection Statement:

When used in metal working fluid (MWF) formulations where liquid aerosol concentrations ("oil mist") may be generated and detected in accordance with NIOSH analytical method 5524, or any other application where liquid aerosol concentrations may be generated and detected in accordance with NIOSH Method 5026, one of the following types of respirators may be necessary:

- An oil proof (class P) air-purifying, half mask respirator capable to filtering 99.97% of particles 0.3 microns or larger when aerosol ("oil mist") concentrations are 5.0 mg/m<sup>3</sup> (total particulate mass) or less;
- a supplied-air respirator operated in a continuous-flow mode when aerosol ("oil mist") concentrations are 12.5 mg/m<sup>3</sup> (total particulate mass) or less; - a powered, air-purifying respirator with an oil proof (class P) high-efficiency particulate filter when aerosol ("oil mist") concentrations are 12.5 mg/m<sup>3</sup> (total particulate mass) or less;
- an air-purifying, full-facepiece respirator with an oil proof (class P) filter capable to filtering 99.97% of particles 0.3 microns or larger when aerosol ("oil mist") concentrations are 25.0 mg/m<sup>3</sup> (total particulate mass) or less; or
- a supplied-air respirator operated in a pressure-demand or other positive-pressure mode.

Appropriate respiratory equipment depends on conditions of work and use. Consult a safety professional for process-specific guidance. Safety procedures should be developed for each intended application.

#### Dermal Protection Statement:

##### Hand Protection

When used in metal working fluids, and / or when cleaning up spills, or if there is a risk of splashing, use nitrile rubber gloves to avoid direct skin contact.

##### Breakthrough time:

Breakthrough time data are generated by glove manufacturers under laboratory test conditions and represent how long a glove can be expected to provide effective permeation resistance. It is important when following breakthrough time recommendations that actual workplace conditions are considered. Most gloves provide protection for only a limited time before they must be discarded and replaced because they will break through after repeated use. Always consult with your glove supplier for up-to-date technical information on breakthrough times for the recommended glove type.

Recommendations on the selection of gloves are as follows:

##### Continuous contact:

Gloves with a minimum breakthrough time of 240 minutes, or >480 minutes if suitable gloves can be obtained. If suitable gloves are not available to offer that level of protection, gloves with shorter breakthrough times may be acceptable as long as appropriate glove maintenance and replacement regimes are determined and adhered to.

##### Short-term / splash protection:

Recommended breakthrough times as above.

It is recognized that for short-term, transient exposures, gloves with shorter breakthrough times may commonly be used. Therefore, appropriate maintenance and replacement regimes must be determined and rigorously followed.

##### Glove Thickness:

For general applications, gloves with a thickness typically greater than 0.35 mm are recommended.

It should be emphasized that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and



## Section 8. Exposure controls/personal protection

knowledge of breakthrough times. Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers' technical data should always be considered to ensure selection of the most appropriate glove for the task.

Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:

- Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of.
- Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential.

### Skin and Body

When used in metal working fluids, nitrile rubber coated aprons and/or impervious nitrile rubber coated suits and boots should be used.

Breakthrough time:

Breakthrough time data are generated by protective clothing manufacturers under laboratory test conditions and represent how long a garment can be expected to provide effective permeation resistance. It is important when following breakthrough time recommendations that actual workplace conditions are considered. Most protective clothing provides protection for only a limited time before it must be discarded and replaced because it will break down after repeated chemical exposures. Always consult with your protective clothing supplier for up-to-date technical information on breakthrough times for the recommended protective clothing type.

Recommendations on the selection of protective clothing are as follows:

Continuous contact:

Protective clothing with a minimum breakthrough time of 240 minutes, or >480 minutes if suitable clothing can be obtained. If suitable clothing is not available to offer that level of protection, clothing with shorter breakthrough times may be acceptable as long as appropriate clothing maintenance and replacement regimes are determined and adhered to.

Short-term / splash protection:

Recommended breakthrough times as above.

It is recognized that for short-term, transient exposures, clothing with shorter breakthrough times may commonly be used. Therefore, appropriate maintenance and replacement regimes must be determined and rigorously followed.

Clothing Thickness:

For general applications, clothing with a thickness typically greater than 0.35 mm is recommended.

Clothing thickness is not necessarily a good predictor of clothing resistance to a specific chemical, as the permeation efficiency of the clothing will be dependent on the composition of the material. Selection should also be based on consideration of the task and knowledge of breakthrough times. Thickness may also vary depending on the manufacturer, type and model. The manufacturers' technical data should always be considered to ensure selection of the most appropriate clothing for the task.

Note: Depending on the activity being conducted, clothing of varying thickness may be required for specific tasks. For example:

- Thinner clothing (down to 0.1 mm or less) may be required where a high degree of mobility is needed. However, these types of clothing are only likely to give short duration protection and would normally be just for single use applications, then disposed of.
- Thicker clothing (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential.

Refer to the follow standards for further information:

- Respiratory protection: EN 529
- Gloves: EN 420, EN 374
- Eye protection: EN 166
- Filtering half-mask: EN 149

## Section 8. Exposure controls/personal protection

- Filtering half-mask with valve: EN 405
- Half-mask: EN 140 plus filter
- Full-face mask: EN 136 plus filter
- Particulate filters: EN 143
- Gas/combined filters: EN 14387

### Eye / Face Protection Statement:

When used in metal working fluids, and / or when cleaning up spills, or if there is a risk of splashing, use safety glasses with side shields or splash resistant goggles.

### General Information:

Specific work environments and material handling practices may vary. Safety procedures should be developed for each application. The correct choice of personal protective equipment (PPE) depends upon the chemicals being handled, and the conditions of work and use.

Personal protective equipment should conform to appropriate standards, be suitable for use, be kept in good condition and properly maintained.

Your supplier of personal protective equipment should be consulted for advice on selection and appropriate standards. For further information contact your national organization for standards.

The final choice of protective equipment will depend upon a risk assessment. It is important to ensure that all items of personal protective equipment are compatible.

### Engineering Controls:

When used in metal working fluids, or any other application where liquid aerosol concentrations ("oil mist") may be generated, provide local exhaust ventilation or other engineering controls to keep the liquid aerosol concentrations ("oil mist") below applicable occupational exposure limits.

All activities involving chemicals should be assessed for their risks to health, to ensure exposures are adequately controlled. Personal protective equipment should only be considered after other forms of control measures (e.g. engineering controls) have been suitably evaluated.

## Section 9. Physical and chemical properties

### Appearance

<b>Physical state</b>	Solid. [Powder.]
<b>Color</b>	Off-white.
<b>Odor</b>	Amine-like. [Slight]
<b>Odor threshold</b>	Not available.
<b>pH</b>	Not available.
<b>Melting point</b>	98.9°C (210°F)
<b>Boiling point</b>	>400°C (>752°F)
<b>Flash point</b>	Open cup: 213°C (415.4°F) [Cleveland]
<b>Burning time</b>	Not available.
<b>Burning rate</b>	Not available.



## Section 9. Physical and chemical properties

<b>Evaporation rate</b>	Not available.
<b>Flammability (solid, gas)</b>	As with any dry material, pouring or allowing to free-fall or to be conveyed through chutes or pipes can accumulate and generate electrostatic sparks, potentially causing ignition of the material itself, or of any flammable materials which may come in contact with the material or its container.
<b>Lower and upper explosive (flammable) limits</b>	Not applicable.
<b>Vapor pressure</b>	<0.000000011 kPa (<0.000000083 mm Hg)
<b>Vapor density</b>	Not applicable.
<b>Density</b>	0.98 g/cm <sup>3</sup> [20°C (68°F)]
<b>Relative density</b>	0.98
<b>Solubility</b>	Soluble in the following materials: methanol. Insoluble in the following materials: cold water.
<b>Solubility in water</b>	<0.0001 g/l
<b>Partition coefficient: n-octanol/water</b>	8.8
<b>Auto-ignition temperature</b>	>400°C (>752°F)
<b>Decomposition temperature</b>	Not available.
<b>SADT</b>	Not available.
<b>Viscosity</b>	Not applicable.

## 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>	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.
<b>Incompatible materials</b>	Reactive or incompatible with the following materials: oxidizing materials
<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
VANLUBE® 81	LC50 Inhalation Dusts and mists	Rat	>5.8 mg/l	1 hours
	LD50 Oral	Rat	>5000 mg/kg	-

#### Irritation/Corrosion

Not available.

#### Conclusion/Summary

**Skin** Non-irritating to the skin. (Rabbit)

**Eyes** Non-irritating to the eyes. (Rabbit)

#### Sensitization

Product/ingredient name	Route of exposure	Species	Result
VANLUBE® 81	skin	Guinea pig	Not sensitizing

#### Mutagenicity

Product/ingredient name	Test	Experiment	Result
VANLUBE® 81	OECD 471	Experiment: In vitro Subject: Bacteria	Negative
	OECD 476	Experiment: In vitro Subject: Mammalian-Animal	Negative
	OECD 487	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.

## Section 11. Toxicological information

### Information on the likely routes of exposure

Routes of entry anticipated: Oral, Dermal, Inhalation.

### Potential acute health effects

#### Eye contact

Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.

#### Inhalation

Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.

#### Skin contact

No known significant effects or critical hazards.

#### Ingestion

No known significant effects or critical hazards.

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

#### Eye contact

Adverse symptoms may include the following:  
irritation  
redness

#### Inhalation

Adverse symptoms may include the following:  
respiratory tract irritation  
coughing

#### 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

Not available.

#### Conclusion/Summary

According to OECD 408, "Subchronic Oral Toxicity - Rodent: 90 Day Study", the NOAEL for systemic toxicity in both male and female rats via the oral route is considered to be 1000 mg/kg.

According to OECD 414, "Prenatal Developmental Toxicity Study", the NOEL for maternal toxicity in rats via the oral route is considered to be 1000 mg/kg and the NOEL for developmental toxicity in rats via the oral route is considered to be 1000 mg/kg.

#### General

Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.

#### 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

## Section 11. Toxicological information

Not available.

### Other information

Not available.

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
VANLUBE® 81	EC50 >1000 mg/l	Micro-organism	3 hours
	NOEC 1000 mg/l	Micro-organism	3 hours
	> limit of water solubility	Algae	96 hours
	> limit of water solubility	Daphnia	48 hours
	> limit of water solubility	Fish	96 hours

### Conclusion/Summary

Based on the reliable and conclusive data for this product, the product is not toxic to aquatic organisms when the maximum amount of product is dissolved in water (i.e., at the limit of water solubility).

### Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
VANLUBE® 81	OECD 301B	28 % - Not readily - 28 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
VANLUBE® 81	-	-	Not readily

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
VANLUBE® 81	8.8	-	high

### Mobility in soil

Soil/water partition coefficient (K<sub>oc</sub>) >427000

### 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.

## Section 13. Disposal considerations

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>	Not regulated.	-	-	-		-
<b>IMDG Class</b>	Not regulated.	-	-	-		-
<b>IATA-DGR Class</b>	Not regulated.	-	-	-		-

PG\* : Packing group

## Section 15. Regulatory information

[United States Inventory \(TSCA 8b\)](#) All components are active 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](#)

Bis(4-(1,1,3,3-tetramethylbutyl)phenyl)amine (CAS 15721-78-5) is a mono-constituent substance with alkylated diphenylamines (isomers) as impurities.

### [Australia Inventory \(AIIIC\)](#)

All components are listed or exempted.

### [Canada Inventory](#)

All components are listed or exempted.

## Section 15. Regulatory information

<a href="#">China Inventory (IECSC)</a>	All components are listed or exempted.
<a href="#">Europe inventory</a>	All components are listed or exempted.
<a href="#">Japan Inventory (CSCL)</a>	All components are listed or exempted.
<a href="#">Korea inventory (KECI)</a>	All components are listed or exempted.
<a href="#">New Zealand Inventory of Chemicals (NZIoC)</a>	All components are listed or exempted.
<a href="#">Philippines Inventory (PICCS)</a>	All components are listed or exempted.
<a href="#">Taiwan Chemical Substances Inventory (TCSI)</a>	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 \(U.S.A.\)](#)



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](#)

<a href="#">Date of printing</a>	10/11/2022
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<a href="#">Version</a>	3



## Section 16. Other information

### 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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