

# SAFETY DATA SHEET

GHS  
United States  
English (US)

## Section 1. Product and company identification

<b>Product name</b>	<b>VANLUBE® DND</b>	<a href="#"><u>In case of emergency</u></a>
<b>Code</b>	50407	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>	Not available.	
<b>Material uses</b>	Lubricant Additive	
<b>Product type</b>	Liquid.	

## 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>	CARCINOGENICITY - Category 2
<b>GHS label elements</b>	
<b>Hazard pictograms</b>	
<b>Signal word</b>	Warning
<b>Hazard statements</b>	Suspected of causing cancer.
<b>Precautionary statements</b>	
<b>Prevention</b>	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear protective clothing: Recommended: lab coat. Wear eye or face protection: Recommended: safety glasses with side-shields..
<b>Response</b>	IF exposed or concerned: Get medical advice or attention.
<b>Storage</b>	Store locked up.
<b>Disposal</b>	Dispose of contents and container in accordance with all local, regional, national and international regulations.
<b>Hazards not otherwise classified</b>	None known.

## Section 3. Composition/information on ingredients

### Substance/mixture

Substance

Ingredient name	CAS number	% by weight
dinonyldiphenylamine	-	>80
diphenylamine	122-39-4	≥0.1 - <1

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.
<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 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 contaminated skin with soap and water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
<b>Ingestion</b>	Wash out mouth with water. Remove dentures if any. 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. 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>	No known significant effects or critical hazards.
<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>	No specific data.
<b>Inhalation</b>	No specific data.
<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.

## Section 4. First aid measures

**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<sub>2</sub>.

**Unsuitable extinguishing media** Do not use water jet.

### 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

### 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

**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.

## Section 6. Accidental release measures

### Large spill

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

#### Protective measures

Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. 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.

#### 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 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. Store locked up. 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
diphenylamine	<p><b>ACGIH TLV (United States, 1/2022).</b> TWA: 10 mg/m<sup>3</sup> 8 hours.</p> <p><b>OSHA PEL 1989 (United States, 3/1989).</b> TWA: 10 ppm 8 hours.</p> <p><b>NIOSH REL (United States, 10/2020).</b> TWA: 10 mg/m<sup>3</sup> 10 hours.</p>

#### Appropriate engineering controls

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.

#### 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.

## Section 8. Exposure controls/personal protection

### 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

#### 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. Recommended: nitrile rubber, butyl rubber

#### 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	Liquid.
Color	Amber to Brown.
Odor	Slight
Odor threshold	Not available.
pH	6 to 9
Melting point	Not available.
Boiling point	>300°C (>572°F)(989 hPa)
Flash point	Open cup: 200 to 250°C (392 to 482°F) [ASTM D 92]
Burning time	Not applicable.
Burning rate	Not applicable.
Evaporation rate	Not available.

## Section 9. Physical and chemical properties

<b>Flammability (solid, gas)</b>	Not available.
<b>Lower and upper explosive (flammable) limits</b>	Not available.
<b>Vapor pressure</b>	<0.01 hPa [25°C (77°F)]
<b>Vapor density</b>	Not available.
<b>Density</b>	0.97 g/cm <sup>3</sup> [20°C (68°F)]
<b>Relative density</b>	0.93 to 0.98 [25°C (77°F)]
<b>Solubility</b>	Not available.
<b>Solubility in water</b>	<0.01 g/l [20°C (68°F)]
<b>Partition coefficient: n-octanol/water</b>	Not applicable.
<b>Auto-ignition temperature</b>	440°C (824°F)(1030 hPa)
<b>Decomposition temperature</b>	Not available.
<b>SADT</b>	Not available.
<b>Viscosity</b>	(40°C (104°F)): 450 to 900 mPa.s [ASTM D 445]

## 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 heat, sparks, flame, and build-up of static electricity.
<b>Incompatible materials</b>	Avoid strong oxidizing agents.
<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
dinonyldiphenylamine	LD50 Dermal	Rat	>2000 mg/kg Based on tests of similar materials	-
diphenylamine	LD50 Oral	Rat	>5000 mg/kg	-
	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Mouse	2720 mg/kg	-
	LD50 Oral	Rat	>800 mg/kg	-
	LD50 Oral	Rat	1165 mg/kg	-

## Section 11. Toxicological information

### Irritation/Corrosion

Not available.

### Conclusion/Summary

#### Skin

dinonyldiphenylamine: Non-irritating to the skin. (Rabbit)  
diphenylamine: Non-irritating to the skin. (Rabbit)

#### Eyes

dinonyldiphenylamine: Non-irritating to the eyes. (Rabbit)  
diphenylamine: Causes eye irritation. (Rabbit)

### Sensitization

Product/ingredient name	Route of exposure	Species	Result
dinonyldiphenylamine	skin	Guinea pig	Not sensitizing
diphenylamine	skin	Guinea pig	Not sensitizing

### Mutagenicity

Product/ingredient name	Test	Experiment	Result
dinonyldiphenylamine	OECD 487	Experiment: In vitro Subject: Mammalian-Human	Negative
diphenylamine	OECD 471	Experiment: In vitro Subject: Bacteria	Negative
	OECD 473	Experiment: In vitro Subject: Mammalian-Animal	Negative
	OECD 476	Experiment: In vitro Subject: Mammalian-Animal	Negative
	OECD 474	Experiment: In vivo Subject: Mammalian-Animal	Negative
	OECD 486	Experiment: In vivo Subject: Mammalian-Animal	Negative

### Carcinogenicity

Product/ingredient name	Result	Species	Dose	Exposure
diphenylamine	Positive - Oral - TC	Rat - Male, Female	0 to 250 ppm	2 years

### Conclusion/Summary

diphenylamine: IARC Group 2B (possibly carcinogenic to humans).

Product/ingredient name	OSHA	IARC	NTP
diphenylamine	-	2B	-

### Reproductive toxicity

Not available.

### Teratogenicity

Not available.

### Specific target organ toxicity (single exposure)

Not available.

### Specific target organ toxicity (repeated exposure)

## Section 11. Toxicological information

Name	Category	Route of exposure	Target organs
diphenylamine	Category 2	oral	blood system, kidneys, liver, spleen

### Aspiration hazard

Not available.

### Information on the likely routes of exposure

Not available.

### Potential acute health effects

<b>Eye contact</b>	No known significant effects or critical hazards.
<b>Inhalation</b>	No known significant effects or critical hazards.
<b>Skin contact</b>	May be harmful in contact with skin.
<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>	No specific data.
<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

Product/ingredient name	Result	Species	Dose	Exposure
diphenylamine	Chronic LOAEL Oral Chronic NOAEL Oral	Rat Rat	30 mg/kg 3 mg/kg	- -

#### **Conclusion/Summary**

Diphenylamines: Overexposure to vapors from heating the product may cause eye and/or skin irritation, and respiratory tract irritation with symptoms such as, but not limited to, dizziness and flu-like symptoms.

#### **General**

No known significant effects or critical hazards.

#### **Carcinogenicity**

Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

#### **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.

## Section 11. Toxicological information

### Numerical measures of toxicity

#### Acute toxicity estimates

Route	ATE value
Dermal	3094.06 mg/kg

### Other information

Not available.

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
dinonyldiphenylamine	Acute EC50 >100 mg/l	Algae	72 hours
	Acute EC50 >100 mg/l	Daphnia	48 hours
	Acute LC50 >0.011 mg/l	Fish	96 hours
diphenylamine	Acute EC50 2.17 mg/l	Algae	72 hours
	Acute EC50 2 mg/l	Daphnia	48 hours
	Acute EC50 1.2 mg/l	Daphnia	48 hours
	Acute LC50 2.2 mg/l	Fish	96 hours
	Acute NOEC 0.37 mg/l	Algae	72 hours
	Chronic NOEC 0.16 mg/l	Daphnia	21 days

### Conclusion/Summary

dinonyldiphenylamine: No effect up to the limit of solubility.

### Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
diphenylamine	OECD 301D	26 % - Not readily - 28 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
dinonyldiphenylamine	-	-	Not readily
diphenylamine	-	-	Not readily

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
dinonyldiphenylamine	3.64 to 7.02	1730	High
diphenylamine	3.5	151.36	Low

### 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
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 active or exempted.

### [U.S. Federal regulations](#)

TSCA 8(a) PAIR: diphenylamine

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](#)

CARCINOGENICITY - Category 2

#### [Composition/information on ingredients](#)

## Section 15. Regulatory information

Name	%	Classification
diphenylamine	≥0.1 - <1	ACUTE TOXICITY (oral) - Category 3 ACUTE TOXICITY (dermal) - Category 3 ACUTE TOXICITY (inhalation) - Category 3 EYE IRRITATION - Category 2A CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2

### SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	diphenylamine	122-39-4	≥0.1 - <1
Supplier notification	diphenylamine	122-39-4	≥0.1 - <1

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

<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 (AIC)</a>	All components are listed or exempted.
<a href="#">Canada Inventory</a>	All components are listed or exempted.
<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

## 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.

[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** 6/5/2024

**Validation date** 6/5/2024

**Date of previous issue** 5/13/2024

**Version** 4

### 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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