

SAFETY DATA SHEET

GHS
United States
English (US)

Section 1. Product and company identification

Product name	VANLUBE® 692E	<u>In case of emergency</u>
Code	52508	1-203-853-1400
Supplier/Manufacturer	Vanderbilt Chemicals, LLC 30 Winfield Street Norwalk, CT 06855	Chemtrec: 1-800-424-9300 Outside US: +1-703-527-3887
Chemical name	Phosphate oil blend	
Synonym	dodecylaniline salt of butyl acid phosphate, dodecylaniline salt of methyl acid phosphate oil blend	
Material uses	Lubricant Additive	
Product type	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	FLAMMABLE LIQUIDS - Category 4 SKIN IRRITATION - Category 2 SKIN SENSITIZATION - Category 1B Percentage of the mixture consisting of ingredient(s) of unknown acute dermal toxicity: 70 - 90% Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 100%

GHS label elements

Hazard pictograms



Signal word	Warning
Hazard statements	Combustible liquid. Causes skin irritation. May cause an allergic skin reaction.

Precautionary statements

Prevention	Wear protective gloves. Wear eye or face protection: Recommended: splash goggles. Keep away from flames and hot surfaces. - No smoking. Avoid breathing vapor. Wash hands thoroughly after handling. Contaminated work clothing must 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	Store in a well-ventilated place. Keep cool.

Section 2. Hazards identification

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 Mixture

Ingredient name	CAS number	% by weight
Phosphoric acid, butyl ester, compds. with branched dodecylbenzenamine	1412893-78-7	35 - 45
Phosphoric acid, methyl ester, compds. with branched dodecylbenzenamine	1412893-77-6	35 - 45
petroleum process oil, <3.0% DMSO extractable material	64742-52-5	18
trimethyl phosphate	512-56-1	<0.1

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.
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.
Skin contact	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.
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	Causes skin irritation. May cause an allergic skin reaction.
Ingestion	No known significant effects or critical hazards.

Over-exposure signs/symptoms

Section 4. First aid measures

Eye contact	Adverse symptoms may include the following: pain or irritation watering redness
Inhalation	No specific data.
Skin contact	Adverse symptoms may include the following: irritation redness
Ingestion	No specific data.

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

Notes to physician	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
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. 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 dry chemical, CO ₂ , water spray (fog) or foam.
Unsuitable extinguishing media	Do not use water jet.

Specific hazards arising from the chemical

Combustible liquid. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.

Hazardous thermal decomposition products

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

Special protective actions for fire-fighters

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. 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. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

Section 6. Accidental release measures

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. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. 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). 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. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. 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.

When stored at low temperatures, some crystallization or gelling may occur. The product may be re-liquified by agitation and heating at 40 to 50°C.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

None.

Appropriate engineering controls

Use only with adequate ventilation. 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. 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: chemical splash goggles. 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

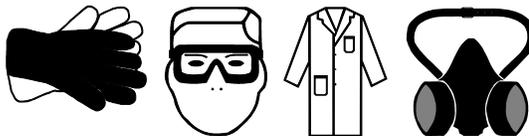
Other skin protection

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

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. Recommended: Vapor and dust respirator.

Personal protective equipment (Pictograms)



Section 9. Physical and chemical properties

Appearance

Physical state	Liquid.
Color	Amber. [Dark]
Odor	Not available.
Odor threshold	Not available.
pH	Not available.
Melting point	Not available.
Boiling point	Not available.
Flash point	Closed cup: $\geq 65^{\circ}\text{C}$ ($\geq 149^{\circ}\text{F}$) [Pensky-Martens]
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.
Vapor pressure	Not available.
Vapor density	Not available.
Density	0.99 g/cm^3 [15.6°C (60.1°F)]
Relative density	0.97
Solubility	Insoluble in the following materials: cold water.
Solubility in water	Not available.
Partition coefficient: n-octanol/water	Not applicable.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
SADT	Not available.
Viscosity	Kinematic (room temperature): $126.78\text{ cm}^2/\text{s}$ (12678 cSt) [at 25°C]

Section 10. Stability and reactivity

Reactivity	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	The product is stable.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
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 10. Stability and reactivity

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
petroleum process oil, <3.0% DMSO extractable material	LD50 Dermal	Rabbit	>2000 mg/kg	-
Phosphoric acid, butyl ester, compds. with branched dodecylbenzenamine	LD50 Oral	Rat	>5000 mg/kg	-
	LD50 Oral	Rat	>2000 mg/kg	-
Phosphoric acid, methyl ester, compds. with branched dodecylbenzenamine	LD50 Oral	Rat	>2000 mg/kg	-
	LD50 Oral	Rat	840 mg/kg	-

Irritation/Corrosion

Not available.

Conclusion/Summary

Skin

Phosphoric acid, butyl ester, compds. with branched dodecylbenzenamine: Non-irritating to the skin. (Reconstructed Human Epidermis Test Method)

Phosphoric acid, methyl ester, compds. with branched dodecylbenzenamine:

Causes skin irritation. (Reconstructed Human Epidermis Test Method)

Eyes

Phosphoric acid, butyl ester, compds. with branched dodecylbenzenamine: Non-irritating to the eyes. (Bovine Corneal Opacity and Permeability Test Method)

Phosphoric acid, methyl ester, compds. with branched dodecylbenzenamine: Non-irritating to the eyes. (Bovine Corneal Opacity and Permeability Test Method)

Sensitization

Product/ingredient name	Route of exposure	Species	Result
Phosphoric acid, butyl ester, compds. with branched dodecylbenzenamine	skin	Mouse	Sensitizing
Phosphoric acid, methyl ester, compds. with branched dodecylbenzenamine	skin	Mouse	Sensitizing
petroleum process oil, <3.0% DMSO extractable material	skin	Guinea pig	Not sensitizing

Mutagenicity

Section 11. Toxicological information

Product/ingredient name	Test	Experiment	Result
Phosphoric acid, butyl ester, compds. with branched dodecylbenzenamine	OECD 471	Experiment: In vitro Subject: Bacteria	Negative
Phosphoric acid, methyl ester, compds. with branched dodecylbenzenamine	OECD 471	Experiment: In vitro 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

Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.

Potential acute health effects

Eye contact

No known significant effects or critical hazards.

Inhalation

No known significant effects or critical hazards.

Skin contact

Causes skin irritation. May cause an allergic skin reaction.

Ingestion

May be harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact

Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation

No specific data.

Skin contact

Adverse symptoms may include the following:
irritation
redness

Ingestion

No specific data.

Section 11. Toxicological information

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

Product/ingredient name	Result	Species	Dose	Exposure
petroleum process oil, <3.0% DMSO extractable material	Sub-chronic LOAEL Oral	Rat	125 mg/kg (Based on tests of similar materials)	-

General Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

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	3125 mg/kg

Other information Not available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Phosphoric acid, butyl ester, compds. with branched dodecylbenzenamine	Acute EC50 1.1 mg/l	Algae	72 hours
	Acute EL50 >1 mg/l	Daphnia	48 hours
	Acute LL50 >100 mg/L No effect up to the limit of solubility.	Fish	96 hours
	Acute NOEC 0.58 mg/l	Algae	72 hours
Phosphoric acid, methyl ester, compds. with branched dodecylbenzenamine	Acute NOELR 1 mg/l	Daphnia	48 hours
	Acute NOEL 100 mg/L No effect up to the limit of solubility.	Fish	96 hours
	Acute EL50 3.6 mg/l	Algae	72 hours

Section 12. Ecological information

	Acute EL50 0.71 mg/l Acute LL50 >100 mg/L No effect up to the limit of solubility.	Daphnia Fish	48 hours 96 hours
	Acute NOELR <0.32 mg/l Acute NOELR 0.2 mg/l Acute NOEL 100 mg/L No effect up to the limit of solubility.	Algae Daphnia Fish	72 hours 48 hours 96 hours

Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
Phosphoric acid, butyl ester, compds. with branched dodecylbenzenamine	OECD 301B	0 % - Not readily - 28 days	-	-
Phosphoric acid, methyl ester, compds. with branched dodecylbenzenamine	OECD 301B	0 % - Not readily - 28 days	-	-
petroleum process oil, <3.0% DMSO extractable material	Based on tests of similar materials	2 to 4 % - Not readily - 28 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Phosphoric acid, butyl ester, compds. with branched dodecylbenzenamine	-	-	Not readily
Phosphoric acid, methyl ester, compds. with branched dodecylbenzenamine	-	-	Not readily

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Phosphoric acid, butyl ester, compds. with branched dodecylbenzenamine	1.51	-	Low
Phosphoric acid, methyl ester, compds. with branched dodecylbenzenamine	1.81	-	Low

Mobility in soil

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

Other adverse effects No known significant effects or critical hazards.

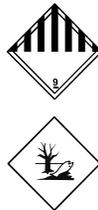
Section 13. Disposal considerations

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. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. 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.	-	-	-		Remarks For bulk (> 119 gallons) packages, this material is regulated under U. S. Department of Transportation regulations for domestic shipments. Its proper shipping description is NA 1993, combustible liquid, n.o.s., PG III.
TDG Classification	Not regulated.	-	-	-		-
ADR/RID Class	UN3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (dodecylaniline salt of butyl acid phosphate, dodecylaniline salt of methyl acid phosphate)	9	III		Remarks Marine pollutant

Section 14. Transport information

IMDG Class	UN3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (dodecylaniline salt of butyl acid phosphate, dodecylaniline salt of methyl acid phosphate)	9	III	 	Remarks Marine pollutant
IATA-DGR Class	UN3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (dodecylaniline salt of butyl acid phosphate, dodecylaniline salt of methyl acid phosphate)	9	III	 	-

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

TSCA 8(c) calls for record of SAR: trimethyl phosphate

[SARA 302/304](#)

[Composition/information on ingredients](#)

No products were found.

[SARA 304 RQ](#)

Not applicable.

[SARA 311/312](#)

[Classification](#)

FLAMMABLE LIQUIDS - Category 4
SKIN IRRITATION - Category 2
SKIN SENSITIZATION - Category 1B

[Composition/information on ingredients](#)

Name	%	Classification
Phosphoric acid, butyl ester, compds. with branched dodecylbenzenamine	35 - 45	SKIN SENSITIZATION - Category 1B
Phosphoric acid, methyl ester, compds. with branched dodecylbenzenamine	35 - 45	SKIN IRRITATION - Category 2 SKIN SENSITIZATION - Category 1B

[State regulations](#)

[Massachusetts](#)

The following components are listed: OIL MIST, MINERAL

[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](#)

Section 15. Regulatory information



WARNING: This product can expose you to Trimethyl phosphate, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

Ingredient name

No significant risk level

Maximum acceptable dosage level

Ingredient name	No significant risk level	Maximum acceptable dosage level
Trimethyl phosphate	Yes.	-

[International regulations](#)

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

All components are listed or exempted.

[Canada Inventory](#)

At least one component is not listed in DSL but all such components are listed in NDSL.

[China Inventory \(IECSC\)](#)

All components are listed or exempted.

[Europe inventory](#)

All components are listed or exempted.

[Japan Inventory \(CSCL\)](#)

All components are listed or exempted.

[Korea inventory \(KECI\)](#)

All components are listed or exempted.

[New Zealand Inventory of Chemicals \(NZIoC\)](#)

All components are listed or exempted.

[Philippines Inventory \(PICCS\)](#)

Not determined.

[Taiwan Chemical Substances Inventory \(TCSI\)](#)

All components are listed or exempted.

Phosphoric acid, butyl ester, compds. with branched dodecylbenzenamine (CAS 1412893-78-7) K-REACH Registration Number: 04-2007-00462.
Phosphoric acid, methyl ester, compds. with branched dodecylbenzenamine (CAS 1412893-77-6) K-REACH Registration Number: 04-2007-00461.

Section 16. Other information

[Hazardous Material Identification System \(U.S.A.\)](#)

Health	2
Flammability	2
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.

[National Fire Protection Association \(U.S.A.\)](#)

Section 16. Other information



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	4/24/2024
Validation date	4/24/2024
Date of previous issue	4/2/2021
Version	9

Key to abbreviations

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

References

Not available.

Information contact

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

Visit www.vanderbiltchemicals.com for more information.

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