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

SAFETY DATA SHEET

GHS
United States

Section 1. Product and company identification

Product name VAROX® 130 XL

Code 70775

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

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

Synonym 2,5-Dimethyl-2,5-di(t-butyl-peroxy) hexyne-3

Material uses Peroxide Accelerator

Product type Powder.

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 ORGANIC PEROXIDES - Type D
COMBUSTIBLE DUSTS

GHS label elements

Hazard pictograms

Signal word Danger

Hazard statements Heating may cause a fire.
May form combustible dust concentrations in air.

Precautionary statements

Prevention Wear protective gloves: > 8 hours (breakthrough time): butyl rubber. Wear protective clothing: Recommended: lab coat. Wear eye or face protection: Recommended: splash goggles. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep away from clothing and other combustible materials. Keep only in original packaging.

Response Not applicable.

Storage Store at temperatures not exceeding 40 °C/104 °F. Store separately.

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

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

Hazards not otherwise classified None known.

Section 3. Composition/information on ingredients

Substance/mixture Mixture

Ingredient name	CAS number	% by weight
2,5-Dimethyl-2,5-di-(t-butyl-peroxy) hexyne-3	1068-27-5	≥45 - <50
carbonic acid calcium salt (1:1)	471-34-1	≥35 - <40
amorphous silica	7631-86-9	≥15 - <20

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 Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact 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.

Over-exposure signs/symptoms

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.

Section 4. First aid measures

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.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

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

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

Specific hazards arising from the chemical Runoff to sewer may create fire or explosion hazard. This material increases the risk of fire and may aid combustion. Heating may cause a fire. May re-ignite itself after fire is extinguished. Hazardous decomposition may occur. May form explosible dust-air mixture if dispersed.

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.

Remark Decomposition products are flammable.

Remark(s) This material may form flammable dust-air mixtures. 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.

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 dust. 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".

Section 6. Accidental release measures

Environmental precautions

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill

Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Avoid contamination with reactive substances. Avoid dust generation. Mix with an inert material and then wet the mixture down with water. Place in a sealed container. Place spilled material 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. Avoid contamination with reactive substances. Avoid dust generation. Do not dry sweep. Mix with an inert material and then wet the mixture down with water. Place in a sealed 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. May form explosible dust-air mixture if dispersed. 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. 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. Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Use only non-sparking tools. 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. Keep away from clothing, incompatible materials and combustible materials. Temperature control may be required. 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

To avoid the risk of formation of shock-sensitive crystals or loss of stability, it is important to store the product within the recommended temperature range. Temperature control may be required. 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. Store at temperatures not exceeding 40 °C/104 °F. Eliminate all ignition sources. Separate from oxidizing materials. Separate from reducing agents and combustible materials. Keep away from rust, iron and copper. Keep container tightly closed and sealed until ready for use. Prevent product contamination. 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.

Detached storage is preferred. To maintain active oxygen content store below 100°F.

Section 7. Handling and storage

Keep container closed. Use with adequate ventilation. Wash thoroughly after handling.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
carbonic acid calcium salt (1:1) amorphous silica	**OSHA PEL (United States, 2/2013).** TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 15 mg/m³ 8 hours. Form: Total dust **RQMT (United States, 1994).** TWA: 6 mg/m³ **NIOSH REL (United States, 10/2013).** TWA: 6 mg/m³ 10 hours. **OSHA PEL Z3 (United States).** TWA: 0.8 mg/m³, (The exposure limit is calculated from the equation , 80/(% SiO2), using a value of 100% SiO2. Lower values of % SiO2 will give higher exposure limits.)

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: 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. > 8 hours (breakthrough time): butyl rubber

Body protection

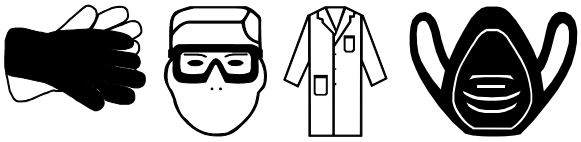
Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Recommended: lab coat

Section 8. Exposure controls/personal protection

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: Filter type P

Personal protective equipment (Pictograms)



Section 9. Physical and chemical properties

Appearance

Physical state Solid. [Powder.]

Color Off-white.

Odor Mild

Odor threshold Not available.

pH Not available.

Melting point Not available.

Boiling point Not available.

Flash point Not available.

Burning time Not available.

Burning rate Not available.

Evaporation rate Not available.

Flammability (solid, gas) Extremely flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and heat.
Decomposition products are flammable.

Lower and upper explosive (flammable) limits Not available.

Vapor pressure Not available.

Vapor density Not available.

Density Not available.

Relative density 1.26

Solubility Insoluble in the following materials: cold water.

Solubility in water Not available.

Partition coefficient: n-octanol/water Not available.

Auto-ignition temperature Not available.

Decomposition temperature Not available.

SADT 80°C (176°F)

Viscosity Not available.

Section 10. Stability and reactivity

Reactivity

This product, in laboratory testing, either detonates partially, deflagrates slowly or shows a medium effect when heated under confinement.

Chemical stability

The product may not be stable under certain conditions of storage or use. See "Possibility of Hazardous Reactions" for further information.

Possibility of hazardous reactions

Hazardous reactions or instability may occur under certain conditions of storage or use.
Conditions may include the following:
temperature increase
high temperature
Reactions may include the following:
hazardous decomposition
risk of causing fire

Conditions to avoid

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

Incompatible materials

Reactive or incompatible with the following materials:
oxidizing materials
combustible materials
reducing materials
Copper
iron
rust

Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Instability Remarks

Thermal decomposition
Ca. 80°C
Method: SADT (UN test H.4)
Rapid, exothermic reaction may occur above the Self Accelerated Decomposition Temperature (SADT).
SADT – Self Accelerating Decomposition Temperature. Lowest temperature at which the tested package size will undergo a self-accelerating decomposition reaction. This reaction will generate flammable vapors which may autoignite.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Section 11. Toxicological information

Product/ingredient name	Result	Species	Dose	Exposure
2,5-Dimethyl-2,5-di-(t-butyl-peroxy) hexyne-3	LD50 Dermal	Rat	>2000 mg/kg	-
	LD50 Oral	Rat	>2000 mg/kg	-
carbonic acid calcium salt (1:1)	LD50 Dermal	Rat	>2000 mg/kg	-
	LD50 Oral	Rat	4500 mg/kg	-
amorphous silica	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	>3300 mg/kg	-

Irritation/Corrosion

Not available.

Conclusion/Summary

Skin

2,5-Dimethyl-2,5-di-(t-butyl-peroxy) hexyne-3: Non-irritating to the skin.
carbonic acid calcium salt (1:1): Non-irritating to the skin.
amorphous silica: Non-irritating to the skin.

Eyes

2,5-Dimethyl-2,5-di-(t-butyl-peroxy) hexyne-3: Non-irritating to the eyes.
carbonic acid calcium salt (1:1): Non-irritating to the eyes.
amorphous silica: Non-irritating to the eyes.

Sensitization

Product/ingredient name	Route of exposure	Species	Result
carbonic acid calcium salt (1:1)	skin	Mouse	Not sensitizing

Conclusion/Summary

Skin

2,5-Dimethyl-2,5-di-(t-butyl-peroxy) hexyne-3: Not a sensitizer.

Mutagenicity

Product/ingredient name	Test	Experiment	Result
2,5-Dimethyl-2,5-di-(t-butyl-peroxy) hexyne-3	OECD 473	Experiment: In vitro Subject: Mammalian-Animal	Negative
	OECD 476	Experiment: In vitro Subject: Mammalian-Animal	Negative
carbonic acid calcium salt (1:1)	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
amorphous silica	OECD 471	Experiment: In vitro Subject: Bacteria	Negative

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Section 11. Toxicological information

Conclusion/Summary

2,5-Dimethyl-2,5-di-(t-butyl-peroxy) hexyne-3:
Species: Rat
Application Route: Oral
Developmental Toxicity: NOAEL: 300 mg/kg body weight
Method: OECD Test Guideline 414

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: 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.

Section 11. Toxicological information

Potential chronic health effects

Product/ingredient name	Result	Species	Dose	Exposure
2,5-Dimethyl-2,5-di-(t-butyl-peroxy) hexyne-3	Chronic NOAEL Oral	Rat	150 mg/kg	90 days

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

Not available.

Other information Not available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
2,5-Dimethyl-2,5-di-(t-butyl-peroxy) hexyne-3	Acute EC50 6.17 mg/l	Algae	72 hours
	Acute EC50 >5.31 mg/l	Daphnia	48 hours
	Acute NOEC 1.88 mg/l	Algae	72 hours
	Acute NOEC >100 mg/l No effect up to the limit of solubility.	Fish	96 hours
	Acute NOEC >1000 mg/l	Micro-organism	3 hours
carbonic acid calcium salt (1:1)	Acute EC50 14 mg/l No effect up to the limit of solubility.	Algae	72 hours
	Acute EC50 14 mg/l No effect up to the limit of solubility.	Daphnia	48 hours
	Acute EC50 >1000 mg/l	Micro-organism	3 hours
	Acute LC50 14 mg/l No effect up to the limit of solubility.	Fish	96 hours
amorphous silica	Acute EC50 >10000 mg/l	Algae	72 hours
	Acute EC50 >1000 mg/l	Daphnia	24 hours
	Acute LC50 >10000 mg/l	Fish	96 hours

Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
2,5-Dimethyl-2,5-di-(t-butyl-peroxy) hexyne-3	-	-	Not readily

Bioaccumulative potential

Section 12. Ecological information

Product/ingredient name	$LogP_{ow}$	BCF	Potential
2,5-Dimethyl-2,5-di-(t-butyl-peroxy) hexyne-3	>6.5	-	high

Mobility in soil

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

Other adverse effects No known significant effects or critical hazards.

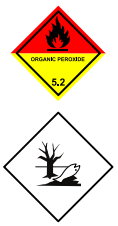
Section 13. Disposal considerations

Disposal methods The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. 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.

RCRA classification D003

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	UN3106	ORGANIC PEROXIDE TYPE D, SOLID (2,5-Dimethyl-2,5-di-(tert-butylperoxy)hexyne-3, 45%)	5.2	-		**Remarks** Marine pollutant
TDG Classification	UN3106	ORGANIC PEROXIDE TYPE D, SOLID (2,5-Dimethyl-2,5-di-(tert-butylperoxy)hexyne-3, 45%)	5.2	-		**Remarks** Marine pollutant

Section 14. Transport information

ADR/RID Class	UN3106	ORGANIC PEROXIDE TYPE D, SOLID (2,5-Dimethyl-2,5-di-(tert-butylperoxy)hexyne-3, 45%)	5.2	-		**Remarks** Marine pollutant
IMDG Class	UN3106	ORGANIC PEROXIDE TYPE D, SOLID (2,5-Dimethyl-2,5-di-(tert-butylperoxy)hexyne-3, 45%)	5.2	-		**Remarks** Marine pollutant
IATA-DGR Class	UN3106	ORGANIC PEROXIDE TYPE D, SOLID (2,5-Dimethyl-2,5-di-(tert-butylperoxy)hexyne-3, 45%)	5.2	-		**Remarks** Marine pollutant

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 ORGANIC PEROXIDES - Type D
COMBUSTIBLE DUSTS

Composition/information on ingredients

Name	%	Classification
2,5-Dimethyl-2,5-di-(t-butyl-peroxy) hexyne-3	≥45 - <50	FLAMMABLE LIQUIDS - Category 4 ORGANIC PEROXIDES - Type B

State regulations

Massachusetts The following components are listed: calcium carbonate; DIATOMACEOUS EARTH; AMORPHOUS SILICA

New York None of the components are listed.

New Jersey None of the components are listed.

Pennsylvania The following components are listed: calcium carbonate; SILICA

California Prop. 65 None of the components are listed.

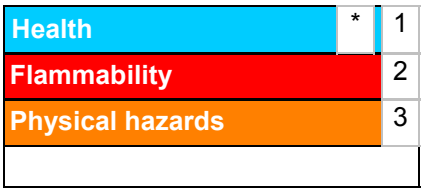
International regulations

Section 15. Regulatory information

Australia inventory (AICS)	All components are listed or exempted.
Canada inventory	All components are listed or exempted.
China inventory (IECSC)	All components are listed or exempted.
Europe inventory	All components are listed or exempted.
Japan inventory (ENCS)	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)	All components are listed or exempted.
Taiwan Chemical Substances Inventory (TCSI)	All components are listed or exempted.

Section 16. Other information

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



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

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Validation date	2/10/2021
Date of previous issue	5/31/2019
Version	6

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 for more information.

Notice to reader