

SAFETY DATA SHEET

1. Identification

Product identifier: BLUESIL V-1022 A

Other means of identification

Synonyms: RHODORSIL V-1022 PART A

Recommended use and restriction on use

Recommended use: Molding diverse objects.

Restrictions on use: None known.



Manufacturer/Importer/Supplier/Distributor Information

Manufacturer

Company Name: Elkem Silicones USA Corp.
Address: 7979 Park Place Road
29745 York, SC
Telephone: +1 (803) 792-3000
Fax: +1 (803) 684-7202
Contact Person:
E-mail: product.stewardship@elkem.com

Supplier

Company Name: Elkem Silicones USA Corp.
Address: Two Tower Blvd, Suite 1601
08816-1100 East Brunswick, NJ
Telephone: +1 (732) 227-2060
Fax: +1 (732) 249-7000

Emergency telephone number: +1 (800) 424-9300 CHEMTREC

2. Hazard(s) identification

Hazard Classification

Health Hazards

Toxic to reproduction

Category 2

Label Elements

Hazard Symbol:



Signal Word: Warning

Hazard Statement: Suspected of damaging fertility.
Quartz, Calcium Carbonate, Cristobalite and Kieselguhr:
When encapsulated in a polymer, are not expected to pose a health hazard
when processed under normal conditions of use.

Precautionary Statements

Prevention: Use personal protective equipment as required.

Response: IF exposed or concerned: Get medical advice/attention.

Other hazards which do not result in GHS classification: No data available.

3. Composition/information on ingredients

Mixtures

Chemical Identity	CAS number	Content in percent (%)*
Octamethylcyclotetrasiloxane	556-67-2	0.5 - 1.5%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

Composition Comments: Mixture of Polyorganosiloxanes, fillers, additives.

4. First-aid measures

General information: For further information refer to section 8 "Exposure-controls/personal protection".

Ingestion: Do not induce vomiting. Rinse mouth thoroughly. Get medical attention if symptoms occur.

Inhalation: Under normal conditions of intended use, this material is not expected to be an inhalation hazard.

Skin Contact: Wash skin thoroughly with soap and water. Get medical attention if symptoms occur after washing.

Eye contact: In the event of contact with the eyes, rinse thoroughly with clean water. Get medical attention if irritation persists after washing.

Most important symptoms/effects, acute and delayed

Symptoms: None known.

Hazards: No specific recommendations.

Indication of immediate medical attention and special treatment needed

Treatment: No specific recommendations.

5. Fire-fighting measures

General Fire Hazards: No specific recommendations.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Water spray, fog, CO₂, dry chemical, or alcohol resistant foam.

Unsuitable extinguishing media: None known.

Specific hazards arising from the chemical: Product will burn under fire conditions. Hazardous Decomposition Products : formaldehyde, oxides of carbon and silica.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: Water spray should be used to cool containers.

Special protective equipment for fire-fighters: Firefighters should wear standard protective equipment and a positive pressure self-contained breathing apparatus (SCBA).

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. See Section 8 of the SDS for Personal Protective Equipment.

Methods and material for containment and cleaning up: Sweep or scoop up and remove.

Notification Procedures: Caution: Contaminated surfaces may be slippery. For waste disposal, see Section 13 of the SDS.

Environmental Precautions: Do not allow to enter drains, sewers or watercourses.

7. Handling and storage

Precautions for safe handling: Observe good industrial hygiene practices. Use personal protective equipment as required. See Section 8 of the SDS for Personal Protective Equipment.

Conditions for safe storage, including any incompatibilities: No special storage precautions noted.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

Quartz, Calcium Carbonate, Cristobalite and Kieselguhr: When encapsulated in a polymer, is not expected to pose a health hazard when processed under normal conditions of use.

Appropriate Engineering Controls No specific recommendations.

Individual protection measures, such as personal protective equipment

General information:	Provide sufficient ventilation during operations which cause vapor formation. This product can form formaldehyde vapors when heated to temperatures above 150 degrees C in the presence of air.
Eye/face protection:	Wear approved chemical safety glasses.
Skin Protection	
Hand Protection:	Protective gloves are recommended.
Other:	Wear suitable protective clothing.
Respiratory Protection:	No protection is ordinarily required under normal conditions of use and with adequate ventilation.
Hygiene measures:	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties:

Appearance

Physical state:	Solid
Form:	Paste
Color:	White
Odor:	Odorless
Odor threshold:	No data available.
pH:	Not applicable
Melting Point:	No data available.
Boiling Point:	> 500 °F (260 °C)
Flash Point:	> 298 °F (148 °C) (Pensky-Martens Closed Cup)
Evaporation rate:	No data available.
Flammability (solid, gas):	No data available.
Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Vapor pressure:	No data available.
Vapor density:	No data available.
Relative density:	No data available.
Solubility(ies)	
Solubility in water:	Insoluble
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	No data available.

10. Stability and reactivity

Reactivity:	No data available.
--------------------	--------------------

Chemical Stability:	Stable.
Possibility of hazardous reactions:	Will not occur.
Conditions to avoid:	None known.
Incompatible Materials:	Strong oxidizers, strong acids, and strong bases.
Hazardous Decomposition Products:	This product can form formaldehyde vapors when heated to temperatures above 150 degrees C in the presence of air. Thermal decomposition or combustion may liberate carbon oxides, other toxic gases or vapors and amorphous silica.

11. Toxicological information

Information on likely routes of exposure

Ingestion:	No data available.
Inhalation:	No data available.
Skin Contact:	No data available.
Eye contact:	No data available.

Symptoms related to the physical, chemical and toxicological characteristics

Ingestion:	No data available.
Inhalation:	No data available.
Skin Contact:	No data available.
Eye contact:	No data available.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral Product:	ATEmix: 2,025.41 mg/kg
----------------------	------------------------

Dermal Product:	No data available.
------------------------	--------------------

Inhalation Product:	No data available.
----------------------------	--------------------

Specified substance(s): Octamethylcyclotetrasiloxane	LC 50 (Rat, 4 h): 36 mg/l
--	---------------------------

Repeated dose toxicity Product:	No data available.
--	--------------------

Specified substance(s): Octamethylcyclotetrasiloxane	NOAEL (Rat, Inhalation, 24 months): 1.820 mg/l NOAEL (Rabbit, Dermal, 3 weeks): 960 mg/kg
--	--

Skin Corrosion/Irritation

Product: No data available.

Specified substance(s):

Octamethylcyclotetrasiloxane (Rabbit, 24 h): Not irritating

Serious Eye Damage/Eye Irritation

Product: No data available.

Specified substance(s):

Octamethylcyclotetrasiloxane (Rabbit, 24 h): Not irritating

Respiratory or Skin Sensitization

Product: No data available.

Specified substance(s):

Octamethylcyclotetrasiloxane (Pig) Not a skin sensitizer.

Carcinogenicity

Product: No data available.

Specified substance(s):

Octamethylcyclotetrasiloxane No effects expected.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

Cristobalite

Quartz (SiO₂) Overall evaluation: Carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens:

Cristobalite Known carcinogen. Known carcinogen.

Quartz (SiO₂) Known carcinogen.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No carcinogenic components identified

Germ Cell Mutagenicity**In vitro****Product:** No data available.**Specified substance(s):**

Octamethylcyclotetrasiloxane
Bacteria: No mutagenic components identified.
Chromosomal aberration: No mutagenic components identified.
In vitro gene mutations test on mammalian cells: No mutagenic components identified.

In vivo**Product:** No data available.**Specified substance(s):**

Octamethylcyclotetrasiloxane
(Rat) No mutagenic components identified.

Reproductive toxicity**Product:** No data available.**Specified substance(s):**

Octamethylcyclotetrasiloxane
Suspected of damaging fertility.

Specific Target Organ Toxicity - Single Exposure**Product:** No data available.**Specific Target Organ Toxicity - Repeated Exposure****Product:** No data available.**Aspiration Hazard****Product:** No data available.**Specified substance(s):**

Octamethylcyclotetrasiloxane
No effects expected.

Other effects: No data available.**12. Ecological information****Ecotoxicity:****Acute hazards to the aquatic environment:****Fish****Product:** No data available.**Specified substance(s):**

Octamethylcyclotetrasiloxane
LC 50 (Oncorhynchus mykiss, 96 h): ≥ 0.022 mg/l

Aquatic Invertebrates**Product:** No data available.**Specified substance(s):**

Octamethylcyclotetrasiloxane
EC 50 (Water flea (Daphnia magna), 48 h): > 0.015 mg/l

ane

Chronic hazards to the aquatic environment:**Fish****Product:** No data available.**Specified substance(s):**Octamethylcyclotetrasiloxane NOEC (Oncorhynchus mykiss, 93 d): ≥ 0.0044 mg/l**Aquatic Invertebrates****Product:** No data available.**Specified substance(s):**

Octamethylcyclotetrasiloxane NOEC (Water flea (Daphnia magna), 21 d): 0.015 mg/l

Toxicity to Aquatic Plants**Product:** No data available.**Specified substance(s):**Octamethylcyclotetrasiloxane EC 50 (Green algae (Selenastrum capricornutum), 96 h): > 0.022 mg/l**Persistence and Degradability****Biodegradation****Product:** No data available.**Specified substance(s):**

Octamethylcyclotetrasiloxane 3.7 % (29 d)

BOD/COD Ratio**Product:** No data available.**Bioaccumulative potential****Bioconcentration Factor (BCF)****Product:** No data available.**Specified substance(s):**

Octamethylcyclotetrasiloxane Fathead Minnow, Bioconcentration Factor (BCF): 12,400

Partition Coefficient n-octanol / water (log Kow)**Product:** No data available.**Mobility in soil:** No data available.**Known or predicted distribution to environmental compartments**

Octamethylcyclotetrasiloxane No data available.

Other adverse effects: No data available.

13. Disposal considerations

Disposal instructions: Dispose of waste at an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal. Contaminated packages should be as empty as possible.

14. Transport information

This material is not subject to transport regulations.

Environmental hazards: Not regulated.

Special precautions for user: No special precautions.

15. Regulatory information

US Federal Regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

None present or none present in regulated quantities.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

☐ Acute (Immediate) ☒ Chronic (Delayed) ☐ Fire ☐ Reactive ☐ Pressure Generating

SARA 302 Extremely Hazardous Substance

None present or none present in regulated quantities.

SARA 304 Emergency Release Notification

None present or none present in regulated quantities.

SARA 313 (TRI Reporting)

None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None present or none present in regulated quantities.

US State Regulations

US. California Proposition 65

This product contains chemical(s) known to the State of California to cause cancer and/or to cause birth defects or other reproductive harm.

Cristobalite
Cristobalite
Quartz (SiO₂)

Carcinogenic.
Carcinogenic.
Carcinogenic.

US. New Jersey Worker and Community Right-to-Know Act**Chemical Identity**

Kieselguhr, soda ash flux-calcined
Cristobalite

US. Massachusetts RTK - Substance List**Chemical Identity**

Cristobalite
Quartz (SiO₂)

US. Pennsylvania RTK - Hazardous Substances**Chemical Identity**

Calcium carbonate
Kieselguhr, soda ash flux-calcined
Cristobalite

US. Rhode Island RTK

No ingredient regulated by RI Right-to-Know Law present.

Inventory Status:

US TSCA Inventory:	On or in compliance with the inventory.
Canada DSL Inventory List:	On or in compliance with the inventory.
EU EINECS List:	On or in compliance with the inventory.
Japan (ENCS) List:	On or in compliance with the inventory.
China Inv. Existing Chemical Substances:	On or in compliance with the inventory.
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory.
Australia AICS:	On or in compliance with the inventory.
Philippines PICCS:	On or in compliance with the inventory.
New Zealand Inventory of Chemicals:	On or in compliance with the inventory.

16. Other information, including date of preparation or last revision

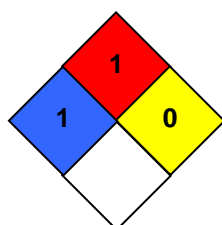
HMIS Hazard ID

Health	*	1
Flammability		1
Physical Hazards		0
PERSONAL PROTECTION		B

B - Safety Glasses & Gloves

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible; *Chronic health effect

NFPA Hazard ID



Red	Flammability
Blue	Health
Yellow	Reactivity
White	Special hazard.

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible

Issue Date: 10/03/2017

Revision Date: No data available.

Version #: 7.2

SDS_US

Further Information:

No data available.

Disclaimer:

The information given is based on data available for the material, the components of the material, and similar materials. The information is believed to be correct. It is given in good faith. This information should be used to make an independent determination of the methods to safeguard workers and the environment.

SAFETY DATA SHEET

1. Identification

Product identifier: BLUESIL V-1022 B

Other means of identification

Synonyms: RHODORSIL V-1022 PART B

Recommended use and restriction on use

Recommended use: Molding diverse objects.

Restrictions on use: None known.

Manufacturer/Importer/Supplier/Distributor Information

Manufacturer

Company Name: Elkem Silicones USA Corp.
Address: 7979 Park Place Road
29745 York, SC
Telephone: +1 (803) 792-3000
Fax: +1 (803) 684-7202
Contact Person:
E-mail: product.stewardship@elkem.com

Supplier

Company Name: Elkem Silicones USA Corp.
Address: Two Tower Blvd, Suite 1601
08816-1100 East Brunswick, NJ
Telephone: +1 (732) 227-2060
Fax: +1 (732) 249-7000

Emergency telephone number: +1 (800) 424-9300 CHEMTREC

2. Hazard(s) identification

Hazard Classification

Physical Hazards

Flammable liquids Category 3

Health Hazards

Acute toxicity (Inhalation - vapor) Category 4
Skin irritation Category 2
Serious eye damage Category 1
Skin sensitizer Category 1
Carcinogenicity Category 1A
Specific Target Organ Toxicity -
Single Exposure Category 1

Label Elements

Hazard Symbol:



Signal Word: Danger

Hazard Statement: Flammable liquid and vapor.
Harmful if swallowed or if inhaled.
Causes skin irritation.
Causes serious eye damage.
May cause an allergic skin reaction.
May cause cancer.
Causes damage to organs.

Precautionary Statements

Prevention: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground and bond container and receiving equipment. Use explosion-proof [electrical/ventilating/lighting/] equipment. Use non-sparking tools. Take action to prevent static discharges. Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe dust/fume/gas/mist/vapors/spray.

Response: IF INHALED: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER/doctor. IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. IF IN EYES: Rinse cautiously with water for several minutes. Get immediate medical advice/attention. IF SWALLOWED: Rinse mouth. Call a POISON CENTER/doctor if you feel unwell.

Storage: Store in well-ventilated place. Keep container tightly closed.

Disposal: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in GHS classification: No data available.

Substance(s) formed under the conditions of use:

Chemical Identity	CAS-No.	Concentration
Butanone oxime	96-29-7	<1%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

3. Composition/information on ingredients

Mixtures

Chemical Identity	CAS number	Content in percent (%)*
Chemical Identity	CAS number	Content in percent (%)*
N-(3-(Trimethoxysilyl)propyl)ethylenediamine	1760-24-3	45 - 55%
Tetraethyl orthosilicate	78-10-4	5 - 10%
Butan-2-one O,O',O''-(vinylsilyldiene)trioxime	2224-33-1	2 - 7%
Methanol	67-56-1	1 - 5%
Ethanol	64-17-5	1 - 5%
N-(3-(Trimethoxysilyl)propyl)ethylenediamine	1760-24-3	50 - <100%
Tetraethyl orthosilicate	78-10-4	5 - <10%
Butan-2-one O,O',O''-(vinylsilyldiene)trioxime	2224-33-1	3 - <5%
Methanol	67-56-1	1 - <5%
Ethanol	64-17-5	1 - <5%
1,2-Ethanediamine	107-15-3	0.1 - <1%
1,2-Benzenedicarboxylic acid, 1,2-diisooctyl ester	27554-26-3	0.1 - <1%
Dibutyltin oxide	818-08-6	0.1 - <0.3%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

Composition Comments: Mixture of organosiloxanes, additives.

4. First-aid measures

General information:	For further information refer to section 8 "Exposure-controls/personal protection".
Ingestion:	Drink plenty of water. Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs. Get medical attention immediately.
Inhalation:	Remove from the source of contamination or move to fresh air. For breathing difficulties, oxygen may be necessary. If breathing stops, provide artificial respiration. Get medical attention immediately.
Skin Contact:	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention if irritation persists after washing.
Eye contact:	Immediately rinse with water. Continue to rinse for at least 15 minutes and seek medical attention.
Most important symptoms/effects, acute and delayed	
Symptoms:	None known.
Hazards:	No specific recommendations.

Indication of immediate medical attention and special treatment needed

Treatment: No specific recommendations.

5. Fire-fighting measures

General Fire Hazards: No specific recommendations.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Dry chemical, alcohol resistant foam or carbon dioxide (CO₂).

Unsuitable extinguishing media: Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical: Product will burn under fire conditions. Hazardous Decomposition Products : formaldehyde, oxides of carbon and silica.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: Water spray should be used to cool containers.

Special protective equipment for fire-fighters: Firefighters should wear standard protective equipment and a positive pressure self-contained breathing apparatus (SCBA).

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. See Section 8 of the SDS for Personal Protective Equipment.

Methods and material for containment and cleaning up: Absorb with sand or other inert absorbent and place into containers.

Notification Procedures: Caution: Contaminated surfaces may be slippery. For waste disposal, see Section 13 of the SDS.

Environmental Precautions: Do not allow to enter drains, sewers or watercourses. Spills may be reportable to the National Response Center (800-424-8802). and to state and/or local agencies.

7. Handling and storage

Precautions for safe handling: Observe good industrial hygiene practices. Use personal protective equipment as required. See Section 8 of the SDS for Personal Protective Equipment.

Conditions for safe storage, including any incompatibilities: No special storage precautions noted.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

Chemical Identity	Type	Exposure Limit Values	Source
Tetraethyl orthosilicate	TWA	10 ppm	US. ACGIH Threshold Limit Values (01 2010)
	REL	10 ppm 85 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	PEL	100 ppm 850 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	10 ppm 85 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
Methanol	STEL	250 ppm	US. ACGIH Threshold Limit Values (01 2010)
	TWA	200 ppm	US. ACGIH Threshold Limit Values (01 2010)
	STEL	250 ppm 325 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	REL	200 ppm 260 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	PEL	200 ppm 260 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	STEL	250 ppm 325 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	TWA	200 ppm 260 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	STEL	1,000 ppm	US. ACGIH Threshold Limit Values (01 2010)
Ethanol	PEL	1,000 ppm 1,900 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	1,000 ppm 1,900 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	STEL	1,000 ppm	US. ACGIH Threshold Limit Values (01 2010)
1,2-Ethanediamine	TWA	10 ppm	US. ACGIH Threshold Limit Values (01 2010)
	REL	10 ppm 25 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	PEL	10 ppm 25 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	10 ppm 25 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	TWA	10 ppm 25 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
	ST ESL	250 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2009)
	AN ESL	25 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2009)
	ST ESL	100 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2009)
	AN ESL	10 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2009)
	TWA PEL	10 ppm 25 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (09 2006)
	TWA	0.1 mg/m3	US. ACGIH Threshold Limit Values (01 2010)
	STEL	0.2 mg/m3	US. ACGIH Threshold Limit Values (01 2010)
Dibutyltin oxide - as Sn	REL	0.1 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	PEL	0.1 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	0.1 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	TWA	0.1 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
	ST ESL	1 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2009)
	AN ESL	0.1 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2009)
Dibutyltin oxide	STEL	0.2 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (09 2006)
	TWA PEL	0.1 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (09 2006)

			2006)
--	--	--	-------

Biological Limit Values

Chemical Identity	Exposure Limit Values	Source
Methanol (methanol: Sampling time: End of shift.)	15 mg/l (Urine)	ACGIH BEL (01 2010)

Additional exposure limits under the conditions of use

Chemical Identity	Type	Exposure Limit Values	Source
Butanone oxime	AN ESL	295 µg/m ³	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2009)
	ST ESL	2,950 µg/m ³	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2009)
	TWA	10 ppm 36 mg/m ³	US. OARS. WEELs Workplace Environmental Exposure Level Guide (2009)

Appropriate Engineering Controls

Use explosion-proof ventilation equipment.

Individual protection measures, such as personal protective equipment

General information:	Provide adequate ventilation. Observe occupational exposure limits and minimize the risk of inhalation of vapors and mist.
Eye/face protection:	Use approved safety goggles or face shield.
Skin Protection	
Hand Protection:	Protective gloves are recommended.
Other:	Wear appropriate clothing and protective gloves to prevent any possibility of skin contact. Apron and long sleeves are recommended.
Respiratory Protection:	If ventilation is insufficient, suitable respiratory protection must be provided. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to fumes at levels exceeding the exposure limits.
Hygiene measures:	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties:

Appearance

Physical state:	Liquid
Form:	Mobile
Color:	Amber
Odor:	Slight amine
Odor threshold:	No data available.
pH:	Not applicable
Freezing point:	No data available.
Boiling Point:	> 171 °F (77 °C)
Flash Point:	111 °F (44 °C) (Pensky-Martens Closed Cup)

Evaporation rate:	No data available.
Flammability (solid, gas):	No data available.
Flammability limit - upper (%):	36 %(V)
Flammability limit - lower (%):	1.3 %(V)
Vapor pressure:	< 2.7 hPa (68 °F (20 °C))
Vapor density:	No data available.
Relative density:	1.03 (77 °F (25 °C))
Solubility(ies)	
Solubility in water:	Practically Insoluble
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	No data available.

10. Stability and reactivity

Reactivity:	No data available.
Chemical Stability:	Stable.
Possibility of hazardous reactions:	Will not occur.
Conditions to avoid:	Avoid heat, sparks, open flames and other ignition sources. None known.
Incompatible Materials:	Strong oxidizers, strong acids, and strong bases. Contact with moisture or water may generate sufficient heat to ignite nearby combustible materials.
Hazardous Decomposition Products:	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.

11. Toxicological information

Information on likely routes of exposure

Ingestion:	No data available.
Inhalation:	No data available.
Skin Contact:	No data available.
Eye contact:	No data available.

Symptoms related to the physical, chemical and toxicological characteristics

Ingestion:	No data available.
Inhalation:	No data available.
Skin Contact:	No data available.
Eye contact:	No data available.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral

Product: ATEmix: 1,192.63 mg/kg

Dermal

Product: ATEmix: 1,598.3 mg/kg

Inhalation

Product: ATEmix: 4.52 mg/l

Repeated dose toxicity

Product: No data available.

Specified substance(s):

N-(3-(Trimethoxysilyl)propyl)ethylenediamine
NOAEL (Rat(Female, Male), Oral): ≥ 500 mg/kg

Specified substance(s):

Tetraethyl orthosilicate
NOAEL (Rat(Male), Oral): 10 mg/kg
NOAEL (Rat(Female), Oral): 50 mg/kg
LOAEL (Mouse, Inhalation - vapor): 0.426 mg/l

Specified substance(s):

Butan-2-one O,O',O''-(vinylsilyldiyl)trioxime
NOAEL (Rat(Female, Male), Oral): 10 mg/kg LOAEL (Rat(Female, Male), Oral): 50 mg/kg Results obtained on a similar product.

Specified substance(s):

Methanol
LOAEL (Rat(Female, Male), Inhalation - vapor): 1.3 mg/l

Specified substance(s):

Ethanol
NOAEL (Mouse(Female), in Water): $> 9,400$ mg/kg
NOAEL (Rat, Inhalation - vapor): > 20 mg/l

Skin Corrosion/Irritation

Product: No data available.

Specified substance(s):

Tetraethyl orthosilicate
OECD 404 (Rabbit): Not irritating

Specified substance(s):

Butan-2-one O,O',O''-(vinylsilyldiyl)trioxime
OECD 404 (Rabbit): Not irritating

Specified substance(s):

Ethanol
Draize test (Human): Not irritating

Serious Eye Damage/Eye Irritation

Product: No data available.

Specified substance(s):

N-(3-(Trimethoxysilyl)propyl)ethylenediamine
OECD 405 (Rabbit): Causes serious eye damage.

Specified substance(s):

Tetraethyl orthosilicate
Expert judgement. (Human): Irritant.

Specified substance(s):

Butan-2-one O,O',O''-(vinylsilyldiyl)trioxime
Specified substance(s):
Methanol
Specified substance(s):
Ethanol

OECD 405 (Rabbit): Risk of serious damage to eyes.
(Rabbit): Not irritating
OECD 405 (Rabbit): Irritant.

Respiratory or Skin Sensitization

Product: No data available.

Specified substance(s):
N-(3-(Trimethoxysilyl)propyl)ethylenediamine
Specified substance(s):
Tetraethyl orthosilicate
Specified substance(s):
Butan-2-one O,O',O''-(vinylsilyldiyl)trioxime
Specified substance(s):
Methanol

, OECD 406 (Guinea Pig) May cause an allergic skin reaction.
, OECD 406 (Guinea Pig) Not a skin sensitizer.
, According to a standardised method. (Guinea Pig) May cause sensitisation by skin contact. Results obtained on a similar product.
, According to a standardised method. (Guinea Pig) Not a skin sensitizer.

Carcinogenicity

Product: No data available.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:

Ethanol Known carcinogen.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No carcinogenic components identified

Germ Cell Mutagenicity

In vitro

Product: No data available.

Specified substance(s):

N-(3-(Trimethoxysilyl)propyl)ethylenediamine
Bacteria (OECD 471): No mutagenic effects.
(OECD 476)No mutagenic effects.

Specified substance(s):

Tetraethyl orthosilicate
Bacteria (According to a standardised method.): No mutagenic effects.
Chromosomal aberration (OECD 473): No clastogenic effect.
(OECD 476)No mutagenic effects.

Specified substance(s):

Butan-2-one O,O',O''-(vinylsilyldiyl)trioxime
Bacteria (OECD 471): No mutagenic effects.
Chromosomal aberration (OECD 473): Mutagen.

Specified substance(s):

Methanol
Bacteria (OECD 471): No mutagenic effects.
(OECD 476)No mutagenic effects.

Specified substance(s):

Ethanol
Bacteria (OECD 471): No mutagenic effects.
(OECD 476)No mutagenic effects.

In vivo

Product: No data available.

Specified substance(s):

N-(3-(Trimethoxysilyl)propyl)ethylenediamine
(OECD 474) Intraperitoneal (Mouse, Female, Male)No mutagenic effects.

Specified substance(s):

Butan-2-one O,O',O''-(vinylsilyldiyl)trioxime
(OECD 474) Intraperitoneal (Mouse)No mutagenic effects.

Specified substance(s):

Methanol
(Expert judgement.) (Mouse)No mutagenic effects.

Reproductive toxicity

Product: No data available.

Specific Target Organ Toxicity - Single Exposure

Product: No data available.

Specified substance(s):

N-(3-(Trimethoxysilyl)propyl)ethylenediamine
Not classified

Specified substance(s):

Tetraethyl orthosilicate
Inhalation: Respiratory system - May cause respiratory irritation.

Specified substance(s):

Butan-2-one O,O',O''-(vinylsilyldiyl)trioxime
Not classified

Specified substance(s):

Methanol
Central nervous system. - Causes damage to organs.

Specified substance(s):

Ethanol
Not classified

Specific Target Organ Toxicity - Repeated Exposure

Product: No data available.

Specified substance(s):

N-(3-(Trimethoxysilyl)propyl)ethylendiamine

Not classified

Specified substance(s):

Tetraethyl orthosilicate

Not classified

Specified substance(s):

Butan-2-one O,O',O''-(vinylsilyldiyl)trioxime

Oral: Blood / hematological system, Cardiovascular system - May cause damage to organs through prolonged or repeated exposure.

Specified substance(s):

Ethanol

Not classified

Aspiration Hazard

Product:

No data available.

Other effects:

No data available.

Additional toxicological Information under the conditions of use

Symptoms related to the physical, chemical and toxicological characteristics under the condition of use

Ingestion:

Specified substance(s):

Butanone oxime

No data available.

Inhalation:

Specified substance(s):

Butanone oxime

No data available.

Skin Contact:

Specified substance(s):

Butanone oxime

No data available.

Eye contact:

Specified substance(s):

Butanone oxime

No data available.

Additional toxicological Information under the conditions of use:

Acute toxicity

Oral Specified substance(s):

Butanone oxime

LD 50 (Rat, Male): 2,326 mg/kg (OECD 401)

Dermal

Specified substance(s):

Butanone oxime

LD 50 (Rabbit): > 180 - < 1,800 mg/kg (According to a standardised method.)
Occluded (Dermal)

Inhalation

Specified substance(s):

Butanone oxime

LC 50 (Rat, Female, Male, 4 h): > 13.2 mg/l (Expert judgement.) Vapor

Repeated dose toxicity Specified substance(s):

Butanone oxime

NOAEL (Rat(Male), in Water): 25 mg/kg
NOAEL (Rat(Female), in Water): 30 mg/kg
NOAEL (Rat(Female, Male), Inhalation - vapor): 0.09 mg/l

Skin Corrosion/Irritation

Specified substance(s):

Butanone oxime (Rabbit, 24 h): Occluded (Dermal)

Serious Eye Damage/Eye Irritation**Specified substance(s):**

Butanone oxime OECD 405 (Rabbit): Causes serious eye damage.

Respiratory or Skin Sensitization**Specified substance(s):**

Butanone oxime , OECD 406 (Guinea Pig) May cause an allergic skin reaction.

Carcinogenicity**Specified substance(s):**

Butanone oxime No data available.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:**Specified substance(s):**

Butanone oxime

US. National Toxicology Program (NTP) Report on Carcinogens:**Specified substance(s):**

Butanone oxime

Germ Cell Mutagenicity**In vitro****Specified substance(s):**

Butanone oxime Bacteria (OECD 471): No mutagenic effects.

Germ Cell Mutagenicity**In vivo****Specified substance(s):**

Butanone oxime Chromosomal aberration (According to a standardised method.) Oral (Rat, Female, Male): No mutagenic effects.

Reproductive toxicity**Specified substance(s):**

Butanone oxime No data available.

Specific Target Organ Toxicity - Single Exposure**Specified substance(s):**

Butanone oxime No data available.

Specific Target Organ Toxicity - Repeated Exposure**Specified substance(s):**

Butanone oxime Not classified

Aspiration Hazard**Specified substance(s):**

Butanone oxime No data available.

12. Ecological information**Ecotoxicity:****Acute hazards to the aquatic environment:****Fish**

Product: No data available.

Specified substance(s):

N-(3-(Trimethoxysilyl)propyl)ethylenediamine LC 50 (Zebra Fish, 96 h): 597 mg/l

Tetraethyl orthosilicate	LC 50 (Zebra Fish, 96 h): > 245 mg/l
Butan-2-one O,O',O''-(vinylsilyldiyl)trioxime	LC 50 (Fish, 96 h): 55,000 mg/l
Methanol	LC 50 (Bluegill Sunfish, 96 h): 15,400 mg/l
Ethanol	LC 50 (Pimephales promelas, 96 h): 14,200 mg/l

Aquatic Invertebrates

Product: No data available.

Specified substance(s):

N-(3-(Trimethoxysilyl)propyl)ethylenediamine
EC 50 (Water flea (Daphnia magna), 48 h): 81 mg/l

Tetraethyl orthosilicate
EC 50 (Water flea (Daphnia magna), 48 h): > 75 mg/l Mortality

Butan-2-one O,O',O''-(vinylsilyldiyl)trioxime
EC 50 (48 h): 17,168 mg/l

Methanol
EC 50 (Water flea (Daphnia magna), 48 h): 18,260 mg/l

Ethanol
LC 50 (Water flea (Ceriodaphnia dubia), 48 h): 5,012 mg/l

Chronic hazards to the aquatic environment:

Fish

Product: No data available.

Specified substance(s):

Methanol
NOEC (Fish, 28 d): 446.7 mg/l

Aquatic Invertebrates

Product: No data available.

Specified substance(s):

N-(3-(Trimethoxysilyl)propyl)ethylenediamine
NOEC (Water flea (Daphnia magna), 21 d): > 1 mg/l

Butan-2-one O,O',O''-(vinylsilyldiyl)trioxime
NOEC (Water flea (Daphnia magna), 21 d): >= 100 mg/l Results obtained on a similar product.

Methanol
NOEC (Aquatic invertebrates, 21 d): 208 mg/l

Ethanol
NOEC (Water flea (Daphnia magna), 10 d): 9.6 mg/l

Toxicity to Aquatic Plants

Product: No data available.

Specified substance(s):

N-(3-(Trimethoxysilyl)propyl)ethylenediamine
EC 50 (Algae (Pseudokirchneriella subcapitata), 72 h): 8.8 mg/l
NOEC (Algae (Pseudokirchneriella subcapitata), 72 h): 3.1 mg/l

Tetraethyl orthosilicate
EC 50 (Algae (Pseudokirchneriella subcapitata), 72 h): > 22 mg/l
NOEC (Algae (Pseudokirchneriella subcapitata), 72 h): >= 22 mg/l

Butan-2-one O,O',O''-(vinylsilyldiyl)trioxime	EC 50 (Alga, 96 h): 1,429 mg/l
Methanol	EC 50 (Algae (Pseudokirchneriella subcapitata), 96 h): 22,000 mg/l
Ethanol	EC 50 (Green algae (Chlorella vulgaris), 72 h): 275 mg/l EC10 (Green algae (Chlorella vulgaris), 72 h): 11.5 mg/l

Persistence and Degradability

Biodegradation

Product: No data available.

Specified substance(s):

N-(3-(Trimethoxysilyl)propyl)ethylenediamine 39 % (28 d, According to a standardised method.) The product is not readily biodegradable.

Tetraethyl orthosilicate 98 % (28 d, According to a standardised method.) Readily biodegradable

Butan-2-one O,O',O''-(vinylsilyldiyl)trioxime 0 % (28 d, OECD 301 A) The product is not biodegradable. Results obtained on a similar product.

Methanol 95 % (20 d) Readily biodegradable

Ethanol 74 % (5 d) Readily biodegradable

BOD/COD Ratio

Product: No data available.

Bioaccumulative potential

Bioconcentration Factor (BCF)

Product: No data available.

Specified substance(s):

Butan-2-one O,O',O''-(vinylsilyldiyl)trioxime Fish, Bioconcentration Factor (BCF): 2.5 (OECD 305) Results obtained on a similar product.

Methanol (Expert judgement.) No effects expected.

Partition Coefficient n-octanol / water (log Kow)

Product: No data available.

Specified substance(s):

N-(3-(Trimethoxysilyl)propyl)ethylenediamine Log Kow: -3.4 (estimated) Results obtained on a similar product.

Tetraethyl orthosilicate Log Kow: 3.18 40 °C (Measured) at pH 7

Butan-2-one O,O',O''-(vinylsilyldiyl)trioxime Log Kow: -2 (estimated)

Methanol Log Kow: -0.77

Ethanol Log Kow: -0.35 24 °C (OECD 107) at pH 7.4

Mobility in soil:

No data available.

Known or predicted distribution to environmental compartments

N-(3-(Trimethoxysilyl)propyl)ethylenediamine	No data available.
Tetraethyl orthosilicate	No data available.
Butan-2-one O,O',O''-(vinylsilyldiene)trioxime	No data available.
Methanol	No data available.
Ethanol	No data available.

Known or predicted distribution to environmental compartments

N-(3-(Trimethoxysilyl)propyl)ethylenediamine	No data available.
Tetraethyl orthosilicate	No data available.
Butan-2-one O,O',O''-(vinylsilyldiene)trioxime	No data available.
Methanol	No data available.
Ethanol	No data available.
	No data available.
	No data available.
Dibutyltin oxide	No data available.

Other adverse effects: No data available.

13. Disposal considerations

Disposal instructions: Dispose of waste at an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal. Contaminated packages should be as empty as possible.

14. Transport information

This material is not subject to transport regulations.

Environmental hazards: Not regulated.

Special precautions for user: This product does not sustain combustion as determined by a test method specified in 49 CFR 173 - Appendix H to Part 173 Method for Sustained Combustibility.

15. Regulatory information

US Federal Regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

<u>Chemical Identity</u>	<u>Reportable quantity</u>
Methanol	lbs. 5000
Ethanol	lbs. 100

Superfund Amendments and Reauthorization Act of 1986 (SARA)**Hazard categories**

☒ Acute (Immediate) ☒ Chronic (Delayed) ☒ Fire ☐ Reactive ☐ Pressure Generating

SARA 302 Extremely Hazardous Substance

None present or none present in regulated quantities.

SARA 304 Emergency Release Notification

<u>Chemical Identity</u>	<u>Reportable quantity</u>
Methanol	lbs. 5000
Ethanol	lbs. 100

SARA 313 (TRI Reporting)

<u>Chemical Identity</u>	<u>Reporting threshold for other users</u>	<u>Reporting threshold for manufacturing and processing</u>
Methanol		

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None present or none present in regulated quantities.

US State Regulations**US. California Proposition 65**

This product contains chemical(s) known to the State of California to cause cancer and/or to cause birth defects or other reproductive harm.

Ethanol	Carcinogenic.
Ethanol	Developmental toxin.

US. New Jersey Worker and Community Right-to-Know Act

<u>Chemical Identity</u>
Tetraethyl orthosilicate
Methanol
Ethanol

US. Massachusetts RTK - Substance List

<u>Chemical Identity</u>
Methanol
1,2-Ethanediamine

US. Pennsylvania RTK - Hazardous Substances

<u>Chemical Identity</u>
Silicic acid, ethyl ester
Tetraethyl orthosilicate
Methanol
Ethanol

US. Rhode Island RTK

No ingredient regulated by RI Right-to-Know Law present.

Inventory Status:

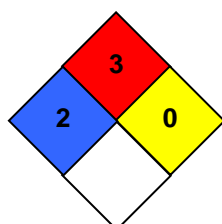
Australia AICS:	On or in compliance with the inventory.
Canada DSL Inventory List:	On or in compliance with the inventory.
EU EINECS List:	On or in compliance with the inventory.
Japan (ENCS) List:	On or in compliance with the inventory.
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory.
US TSCA Inventory:	On or in compliance with the inventory.

16. Other information, including date of preparation or last revision
HMIS Hazard ID

Health	*	2
Flammability	3	
Physical Hazards	0	
PERSONAL PROTECTION		H

H - Goggles, Gloves, Apron & Vapor Respirator

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible; *Chronic health effect

NFPA Hazard ID


	Flammability
	Health
	Reactivity
	Special hazard.

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible

Issue Date:	10/03/2017
Revision Date:	No data available.
Version #:	13.1
Further Information:	No data available.

Disclaimer:

The information given is based on data available for the material, the components of the material, and similar materials. The information is believed to be correct. It is given in good faith. This information should be used to make an independent determination of the methods to safeguard workers and the environment.