

SAFETY DATA SHEET

According to Regulation 2012 OSHA Hazard Communication Standard: 29 CFR 1910.1200

1. Identification of the substance or mixture and of the supplier

1.1 Product identifier:

Product name: BLUESIL TETRAMERE D4 A2

Product No.: PRCO90060345

Additional identification:

Chemical name: Octamethylcyclotetrasiloxane

CAS-No.: 556-67-2

1.2 Relevant identified uses of the substance or mixture and uses advised against:

Identified uses: Manufacturing intermediates.

Uses advised against: None known.

1.3 Details of the supplier of the safety data sheet:

Manufacturer:

Jiangxi Bluestar Xinghuo Silicones Co., Ltd.
Xinghuo Industry Park
CH-330319 Jiangxi Province, Jiujiang City, Yongxiu County
P.R.CHINA

Telephone: +86 792 3171403

E-mail: sds.apac@elkem.com

Supplier:

Elkem Silicones USA Corp.
Two Tower Blvd, Suite 1601
08816-1100 East Brunswick, NJ
USA

Telephone: +1 (732) 227-2060

Fax: +1 (732) 249-7000

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

2. Hazards identification

2.1 Classification of the substance or mixture:

The product has been classified according to the legislation in force.

Hazard Classification:

Physical Hazards:

Flammable liquids	Category 3	H226: Flammable liquid and vapor.
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Health Hazards:

Toxic to reproduction	Category 2	H361f: Suspected of damaging fertility.
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Environmental Hazards:

Chronic hazards to the aquatic environment	Category 1	H410: Very toxic to aquatic life with long lasting effects.
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2.2 Label Elements:

Hazard pictograms:

Signal Word:

Warning

Hazard statements:

H226: Flammable liquid and vapor.
 H361f: Suspected of damaging fertility.
 H410: Very toxic to aquatic life with long lasting effects.

Precautionary Statements:
Prevention:

P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P240: Ground and bond container and receiving equipment.
 P241: Use explosion-proof electrical equipment.
 P242: Use non-sparking tools.
 P243: Take action to prevent static discharges.
 P281: Use personal protective equipment as required.
 P273: Avoid release to the environment.

Response:

P308+P313: IF exposed or concerned: Get medical advice/attention.

Storage:

P403+P233: Store in a well-ventilated place. Keep container tightly closed.

Disposal:

P501: 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.

2.3 Other hazards which do not result in GHS classification:

No other information noted.

3. Composition/information on ingredients

Substances:

Chemical name:	Octamethylcyclotetrasiloxane
CAS-No.:	556-67-2
Purity:	>99%

4. First-aid measures

General information:

Move into fresh air and keep at rest. Take off contaminated clothing and wash it before reuse. Get medical attention if symptoms occur.

4.1 Description of first aid measures:
Inhalation:

Under normal conditions of intended use, this material is not expected to be an inhalation hazard. In case of inhalation: Move person into fresh air and keep at rest. Get medical attention if symptoms occur.

Skin contact:

Remove contaminated clothing and shoes. Wash skin with soap and water. Get medical attention if symptoms occur. Wash contaminated clothing before reuse.

Eye contact:

In the event of contact with the eyes, rinse thoroughly with clean water for at least 15 minutes. Get medical attention if symptoms occur.

Ingestion:

Do not induce vomiting. Rinse mouth thoroughly with water. Get medical attention if symptoms occur.

Personal Protection for First-aid Responders:

First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). Refer to sections 5 and 8 for information on emergency procedures and protective equipment.

4.2 Most important symptoms and effects, both acute and delayed:

Any important symptoms and effects are described in Section 11 (Toxicological information) of this SDS.

4.3 Indication of any immediate medical attention and special treatment needed:**Notes to the physician:**

No specific recommendations. Show this Safety Data Sheet to the attending physician.

5. Fire-fighting measures**General Fire Hazards:**

Vapors may travel considerable distance to a source of ignition and flash back. Containers may explode (due to the build-up of pressure) when exposed to extreme heat.

5.1 Extinguishing media:**Suitable extinguishing media:**

Water spray, foam, dry powder or carbon dioxide.

Unsuitable extinguishing media:

Avoid water in straight hose stream; will scatter and spread fire.

5.2 Special hazards arising from the substance or mixture:

Flammable liquid. Thermal decomposition or combustion may liberate carbon oxides, silicon oxides and other toxic gases or vapors.

5.3 Advice for firefighters:**Special fire fighting procedures:**

Use standard firefighting procedures and consider the hazards of other involved materials. Remove undamaged containers from fire area if it is safe to do so. Evacuate to a safe location and contact the emergency services. 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**6.1 Personal precautions, protective equipment and emergency procedures:**

Use personal protective equipment. See Section 8 of the SDS for Personal Protective Equipment.

6.2 Environmental Precautions:

Do not discharge into drains, water courses or onto the ground. Collect spillage. Use containment for a large spill.

Spills may be reportable to the National Response Center (800-424-8802).

6.3 Methods and material for containment and cleaning up:

Absorb with sand or other inert absorbent and place into containers.

6.4 Reference to other sections:

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

7. Handling and storage

7.1 Precautions for safe handling:

Precautions:

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharges. In partly emptied containers formation of explosive mixture is possible. Nitrogen blanketing of containers is recommended. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Use spark-proof tools and/or explosion-proof equipment. Avoid inhalation of vapors/aerosols/dusts and contact with skin and eyes. See Section 8 of the SDS for Personal Protective Equipment. For further information, refer to section 10: "Stability and Reactivity". Take care to prevent spills, waste and minimize release to the environment. In case of spills, beware of slippery floors and surfaces.

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.

7.2 Conditions for safe storage, including any incompatibilities:

Store in accordance with local/regional/national regulations. Store in original tightly closed container. Store in a cool, dry place with adequate ventilation. Keep away from incompatible materials, open flames, and high temperatures. Keep in properly labelled containers. Nitrogen blanketing of containers is recommended.

Packaging frequently used at our sites:

Steel drums coated with epoxy-resin.

7.3 Specific end use(s):

See the technical data sheet on this product for further information.

8. Exposure controls/personal protection

8.1 Control Parameters:

Occupational Exposure Limits:

Octamethylcyclotetrasiloxane

Type	Exposure Limit Values	Source	Date	Remarks
TWA	10 ppm -	WEEL	2014	

8.2 Exposure controls:

Appropriate Engineering Controls:

Use explosion-proof ventilation equipment to stay below exposure limits. In case of inadequate ventilation: Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

Individual protection measures, such as personal protective equipment:

Avoid inhalation of vapors/aerosols/dusts and contact with skin and eyes. Personal protective equipment should be chosen according to applicable standards, adapted to the conditions of use of the product and in discussion with the supplier of the personal protective equipment.

Eye/face protection:	Safety glasses with side shields.
Hand Protection:	Protective gloves are recommended.
Skin and Body Protection:	Wear appropriate clothing to prevent any possibility of skin contact.
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.

Environmental Controls:

See sections 7 and 13 of the Safety Data Sheet.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties:

Appearance:

Physical state:	Liquid
Form:	Mobile
Color:	Colorless
Odor:	Odorless
pH:	Not applicable. By definition, pH measurement consists in the determination of hydrogen ions concentration in solution, generally aqueous. Silicones products are hydrophobic and therefore, not soluble in water. By consequence, it is not possible to measure the pH value.

Melting point/freezing point:	17.5 °C
Boiling Point:	175 °C (1,013 hPa)
Flash Point:	57 °C / 135 °F (Closed cup according to method Afnor T 60103.)
Flammability:	No data available.
Flammability Limit - Upper (%):	11.7 %(V)
Flammability Limit - Lower (%):	0.4 %(V)
Vapor pressure:	1.2 hPa (20 °C) 8 hPa (50 °C)
Relative vapor density:	10.2
Evaporation Rate:	No data available.
Density:	Approximate 0.96 kg/dm ³ (20 °C)
Solubility(ies):	
Solubility in Water:	< 0.0001 g/l (20 °C,) Practically Insoluble
Solubility (other):	Common organic solvents.: Miscible (in all proportions).
Partition coefficient (n-octanol/water):	Log Kow: 6.49 (25 °C, OECD 123)
Self Ignition Temperature:	420 °C
Decomposition Temperature:	> 250 °C
Kinematic viscosity:	Approximate 2.5 - 2.6 mm ² /s (25 °C)
Particle characteristics:	Not applicable.

9.2 Other information:

Dynamic viscosity:	Approximate 2.4 - 2.5 mPa.s (25 °C)
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Explosive properties:

The molecule has no chemical groups that are associated with explosive properties.

Oxidizing properties:

Not considered as oxidizing. (evaluation by structure-activity relationship)

10. Stability and reactivity

10.1 Reactivity:

No other information noted.

10.2 Chemical Stability:

Stable

10.3 Possibility of hazardous reactions:

Will not occur.

10.4 Conditions to avoid:

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible Materials:

Strong oxidizing agents.

10.6 Hazardous Decomposition Products:

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:

Inhalation: No data available.

Ingestion: No data available.

Skin contact: No data available.

Eye contact: No data available.

11.1 Information on toxicological effects:**Acute toxicity:****Oral: Based on our knowledge of the composition information:**

OCTAMETHYLCYCLOTETRASILOXANE (556-67-2):

LD 50 (Rat ; Male): > 4,800 mg/kg ; Method: Similar to OECD 401

Dermal: Based on our knowledge of the composition information:

OCTAMETHYLCYCLOTETRASILOXANE (556-67-2):

LD 50 (Rat ; Female, Male): > 2,375 mg/kg ; Method: Similar to OECD 402

Inhalation: Based on our knowledge of the composition information:

OCTAMETHYLCYCLOTETRASILOXANE (556-67-2):

LC 50 (Rat ; Female, Male ; 4 h ; Aerosol): 36 mg/l ; Method: OECD 403 ; Repeated dose inhalation studies generally show signs of respiratory tract irritation.

Repeated dose toxicity:**Based on our knowledge of the composition information:**

OCTAMETHYLCYCLOTETRASILOXANE (556-67-2):

NOAEL: 1.82 mg/l ; (Rat ; Female, Male ; Inhalation - vapour) ; Method: Similar to OECD 453 ; Chronic exposure.

NOAEL: 960 mg/kg ; (Rabbit ; Female, Male ; Dermal) ; Method: Similar to OECD 410 ; Subacute exposure.

Skin Corrosion/Irritation:**Based on our knowledge of the composition information:**

OCTAMETHYLCYCLOTETRASILOXANE (556-67-2):

Not irritating (Rabbit) ; Method: Similar to OECD 404

Serious Eye Damage/Eye Irritation:**Based on our knowledge of the composition information:**

OCTAMETHYLCYCLOTETRASILOXANE (556-67-2):

Not irritating (Rabbit) ; Method: OECD 405

Respiratory or Skin Sensitization:**Based on our knowledge of the composition information:**

OCTAMETHYLCYCLOTETRASILOXANE (556-67-2):

Skin sensitization: Not a skin sensitizer. (Guinea Pig) ; Method: OECD 406

Germ Cell Mutagenicity:**In vitro: Based on our knowledge of the composition information:**

OCTAMETHYLCYCLOTETRASILOXANE (556-67-2):

Bacterial reverse mutation test: No mutagenic effect. (Salmonella typhimurium ; with and without metabolic activation) ; Method: OECD 471

In vitro gene mutations test on mammalian cells: No mutagenic effect. (Mouse lymphoma cells ; with and without metabolic activation) ; Method: Similar to OECD 476

In vitro mammalian chromosomal aberration test: No clastogenic effect. (Chinese hamster ovary cells ; with and without metabolic activation) ; Method: Similar to OECD 473

In vivo: Based on our knowledge of the composition information:

OCTAMETHYLCYCLOTETRASILOXANE (556-67-2):

Mammalian bone marrow chromosomal aberration test: negative (Rat ; Female, Male ; Inhalation) ; Method: Similar to OECD 475

Rodent dominant Lethal test: negative (Rat ; Female, Male ; Gavage (Oral)) ; Method: Similar to OECD 478

Carcinogenicity:

No data available.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

No carcinogens present or none present in regulated quantities.

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

No carcinogens present or none present in regulated quantities.

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

No carcinogens present or none present in regulated quantities.

Reproductive toxicity:

Fertility: Based on our knowledge of the composition information: Suspected of damaging fertility.

OCTAMETHYLCYCLOTETRASILOXANE (556-67-2):

Suspected of damaging fertility.

Fertility study 2 generations: NOAEL (parent): 3.64 mg/l ; NOAEL (F1): 3.64 mg/l ; NOAEL (F2): None. (Rat ; Female, Male ; Inhalation) ; Method: Similar to OECD 416 ; Effects on fertility

Teratogenicity: Based on our knowledge of the composition information: Suspected of damaging fertility.

OCTAMETHYLCYCLOTETRASILOXANE (556-67-2):

NOAEL (terato): \geq 8.492 mg/l ; NOAEL (mater): 3.64 mg/l (Rat ; Inhalation - vapor) ; Method: Similar to OECD 414 ; The product is not considered to be toxic for development.

NOAEL (terato): \geq 6.066 mg/l ; NOAEL (mater): 3.64 mg/l (Rabbit ; Inhalation - vapor) ; Method: Similar to OECD 414 ; The product is not considered to be toxic for development.

Specific Target Organ Toxicity - Single Exposure:

Based on our knowledge of the composition information:

OCTAMETHYLCYCLOTETRASILOXANE (556-67-2):

Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity - Repeated Exposure:

Based on our knowledge of the composition information:

OCTAMETHYLCYCLOTETRASILOXANE (556-67-2):

Based on available data, the classification criteria are not met.

Aspiration Hazard:

Based on our knowledge of the composition information:

OCTAMETHYLCYCLOTETRASILOXANE (556-67-2):

Based on available data, the classification criteria are not met.

12. Ecological information

12.1 Toxicity:

Acute toxicity:

Fish: Based on our knowledge of the composition information:

OCTAMETHYLCYCLOTETRASILOXANE (556-67-2):

LC 50 (Oncorhynchus mykiss; 96 h ; Flow through) : $>$ 0.022 mg/l ; Method: According to a standardised method.

Aquatic Invertebrates: Based on our knowledge of the composition information:

OCTAMETHYLCYCLOTETRASILOXANE (556-67-2):

EC 50 (Water flea (Daphnia magna); 48 h ; Flow through) : $>$ 0.015 mg/l ; Method: According to a standardised method.

Aquatic plants: Based on our knowledge of the composition information:

OCTAMETHYLCYCLOTETRASILOXANE (556-67-2):

ErC50 (Algae (Pseudokirchneriella subcapitata); 96 h) : $>$ 0.022 mg/l ; Method: According to a standardised method.

ErC10 (Algae (Pseudokirchneriella subcapitata); 96 h) : \geq 0.022 mg/l ; Method: According to a standardised method.

Toxicity to microorganisms: Based on our knowledge of the composition information:

OCTAMETHYLCYCLOTETRASILOXANE (556-67-2):

EC 50 (3 h) : $>$ 10,000 mg/l

Chronic Toxicity: Very toxic to aquatic life with long lasting effects.

Fish: Based on our knowledge of the composition information:*OCTAMETHYLCYCLOTETRASILOXANE (556-67-2):*NOEC (Oncorhynchus mykiss; 93 d ; Flow through) : ≥ 0.0044 mg/l ; Method: According to a standardised method.**Aquatic Invertebrates: Based on our knowledge of the composition information:***OCTAMETHYLCYCLOTETRASILOXANE (556-67-2):*NOEC (Water flea (Daphnia magna); 21 d ; Flow through) : ≥ 0.015 mg/l ; Method: According to a standardised method.**12.2 Persistence and Degradability:****Biodegradation: Based on our knowledge of the composition information:***OCTAMETHYLCYCLOTETRASILOXANE (556-67-2):*

3.7 % (activated sludge and sewage, soil ; 28 d) ; Method: OECD 310 ; The product is not considered to be readily biodegradable.

BOD/COD Ratio: No data available.**12.3 Bioaccumulative potential:****Bioconcentration Factor (BCF): Based on our knowledge of the composition information:***OCTAMETHYLCYCLOTETRASILOXANE (556-67-2):*

Bioconcentration Factor (BCF): 14,900 (Fathead Minnow) ; Method: OECD 305 ; Not bioaccumulable based on the depuration rate constant

Partition coefficient (n-octanol/water):

Log Kow: 6.49 (25 °C) ; Method: OECD 123

12.4 Mobility in soil:

No data available.

12.5 Other adverse effects:

No data available.

13. Disposal considerations**13.1 Waste treatment methods:****Disposal methods:**

Dispose of waste at an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal. Disposal of unused product may be subject to RCRA regulations (40 CFR 261). Disposal of the used product may also be regulated due to ignitability.

Contaminated Packaging:

Contaminated packages should be as empty as possible.

Waste code:

EPA RCRA HAZARDOUS WASTE CODE: D001

14. Transport information

DOT

14.1 UN number or ID number:	UN 1993
14.2 UN Proper Shipping Name:	FLAMMABLE LIQUID, N.O.S. (Octamethylcyclotetrasiloxane)
14.3 Transport Hazard Class(es):	
Class:	3
Label(s):	3
EmS No.:	128,
14.4 Packing Group:	III
14.5 Environmental hazards:	No
14.6 Special precautions for user:	None.

IMDG / IMO

14.1 UN number or ID number:	UN 1993
14.2 UN Proper Shipping Name:	FLAMMABLE LIQUID, N.O.S. (Octamethylcyclotetrasiloxane)
14.3 Transport Hazard Class(es):	
Class:	3
Label(s):	3
EmS No.:	F-E , <u>S-E</u>
14.4 Packing Group:	III
14.5 Environmental hazards:	No
14.6 Special precautions for user:	None.
14.7 Maritime transport in bulk according to IMO instruments:	Not applicable.

IATA

14.1 UN number or ID number:	UN 1993
14.2 Proper Shipping Name:	Flammable liquid, n.o.s. (Octamethylcyclotetrasiloxane)
14.3 Transport Hazard Class(es):	
Class:	3
Label(s):	3
14.4 Packing Group:	III
14.5 Environmental hazards:	Dangerous for the environment.
14.6 Special precautions for user:	None.
Other information	
Passenger and cargo aircraft:	Allowed.
Cargo aircraft only:	Allowed.

15. Regulatory information

US Federal Regulations:
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D):

<u>Chemical Identity:</u>	<u>Reportable quantity:</u>
Octamethylcyclotetrasiloxane	De minimis concentration::TSCA 4 - 1.0 % - One-Time Export Notification only.

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:

Flammable liquids, Reproductive toxicity

SARA 304 Emergency Release Notification: None present or none present in regulated quantities.

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required: None present or none present in regulated quantities.

US State Regulations:

US. California Proposition 65: No ingredient requiring a warning under CA Prop 65.

US. New Jersey Worker and Community Right-to-Know Act: No ingredient regulated by NJ Right-to-Know Law present.

US. Massachusetts RTK - Substance List: No ingredient regulated by MA Right-to-Know Law present.

US. Pennsylvania RTK - Hazardous Substances: No ingredient regulated by PA Right-to-Know Law present.

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.
China Inv. Existing Chemical Substances:	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.
New Zealand Inventory of Chemicals:	On or in compliance with the inventory.
Philippines PICCS:	On or in compliance with the inventory.
Taiwan Chemical Substance Inventory:	On or in compliance with the inventory.
US TSCA Inventory:	On or in compliance with the inventory.
EINECS, ELINCS or NLP:	On or in compliance with the inventory.

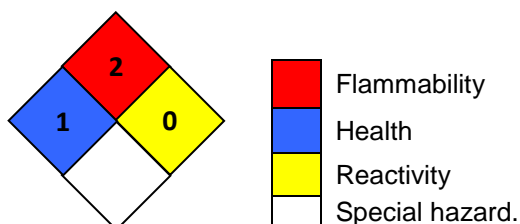
16. Other information, including date of preparation or last revision

HMIS Hazard ID:

Health	*	1
Flammability	2	
Physical Hazards	0	
PERSONAL PROTECTION	B	

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

NFPA Hazard ID:



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

Issue Date: 01/31/2022

Version #: 2.0

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.