SAFETY DATA SHEET

According to OSHA Hazcom Standard 29 CFR 1910.1200

QS119R-BLACK

1. IDENTIFICATION

A. Product name

- QS119R-BLACK

B. Recommended use and restriction on use

- General use : Sealant
- Restriction on use : Do not use except for purpose

C. Manufacturer / Supplier / Distributor information

○ Manufacturer information

- Company name : KCC SILICONE Corporation
- Address : 801, GWAHAK-RO, BONGDONG-EUP, WANJU-GUN, JEOLLABUK-DO, 55321, Republic of KOREA
- Emergency telephone number : 82-63-260-1700

○ Supplier/Distributor information

- Company name : KCC SILICONE Corporation
- Address : 801, GWAHAK-RO, BONGDONG-EUP, WANJU-GUN, JEOLLABUK-DO, 55321, Republic of KOREA
- Emergency telephone number : 82-63-260-1700

2. HAZARD IDENTIFICATION

A. GHS Classification

- Flammable liquids : Category4
- Acute toxicity (inhalation: vapor) : Category4
- Skin sensitization : Category1B

B. GHS label elements

○ Hazard symbols



○ Signal words

- Warning

○ Hazard statements

- H227 Combustible liquid
- H317 May cause an allergic skin reaction
- H332 Harmful if inhaled

○ Precautionary statements

1) Prevention

- P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
- P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
- P271 Use only outdoors or in a well-ventilated area.
- P272 Contaminated work clothing should not be allowed out of the workplace.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.

2) Response

- P302+P352 IF ON SKIN: Wash with plenty of soap and water.
- P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P312 Call a POISON CENTER or doctor/physician if you feel unwell.
- P321 Specific treatment (if in eyes, wash with plenty of running water; if in contact with skin, wash with plenty of running water; if inhaled, move to fresh air; if ingested, seek medical advice on whether to induce vomiting).
- P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
- P362+P364 Take off contaminated clothing and wash before reuse.
- P370+P378 In case of fire: Use Suitable extinguishing media for extinction(Refer Section SDS 5).

3) Storage

- P403 Store in a well-ventilated place.

4) Disposal

- P501 Dispose of contents/container in accordance with local/regional/national/international regulation

C. Other hazards which do not result in classification

- Not available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Trade names and Synonyms	CAS No.	Content(%)
Siloxanes and Silicones, di-Me, hydroxy-terminated	Siloxanes and silicones, dimethyl, hydroxy terminated ; Di methyl polysiloxane hydroxy ; Methyl hydroxy terminated siloxane ; Poly(dimethylsiloxane), hydroxy-terminated ;	70131-67-8	26 ~ 33
Calcium carbonate	Carbonic acid calcium salt (1:1) ; Calcite ; Limestone ; Marble ;	471-34-1	20 ~ 27
Siloxanes and Silicones, di-Me	Dimethyl silicones and siloxanes ; Polydimethylsiloxane ; Dimethylpolysiloxane ; Silicone oil ;	63148-62-9	8 ~ 15
Aluminium hydroxide	Trihydroxyaluminum ; Aluminum oxide, Trihydrate ; Alumina hydrated ; Alumina trihydrate ; Alpha-alumina trihydrate ;	21645-51-2	8 ~ 15
Manganese ferrite black spinel (C.I. pigment black 026)	Daipyroxide Black 9550	68186-94-7	1 ~ 10
Trimethoxyvinylsilane	Vinyltrimethoxysilane ; Silane, ethenyltrimethoxy- ; (Trimethoxysilyl)ethene ; Ethenyltrimethoxysilane ; Silane, trimethoxyvinyl- ;	2768-02-7	1 ~ 10
Bis(ethyl 3-oxobutanoato-O1',O3)bis(2-propanolato)titanium	Diisopropoxy-bisethylacetoacetatotitanate	27858-32-8	1 ~ 10
Carbon black	Inorganic,carbon black ; Acetylene Black ; Channel black	1333-86-4	0.1~1

N-(3-(trimethoxysilyl)propyl)ethylenediamine	1,2-Ethanediamine, N1-[3-(trimethoxysilyl)propyl]- ; 1,2-Ethanediamine, N-[3-(trimethoxysilyl)propyl]- ; N-[3-(Trimethoxysilyl)propyl]-1,2-ethanediamine ; Ethane-1,2-diamine, n-[3-(trimethoxysilyl)propyl]- ; (2-Aminoethyl)(3-(trimethoxysilyl)propyl)amine ; (Trimethoxysilylpropyl)ethylenediamine ; g-(2-Aminoethyl)aminopropyltrimethoxysilane ; g-(Ethylenediamino)propyltrimethoxysilane ; 3-(2-Aminoethyl)aminopropyltrimethoxysilane ; 3-(N-Aminoethyl)aminopropyltrimethoxysilane ; 3-(Trimethoxysilyl)propylethylenedia	1760-24-3	0.1~1

4. FIRST AID MEASURES

A. Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

B. Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Wash contaminated clothing thoroughly before re-using.
- Go to the hospital immediately if symptoms(flare, irritate) occur.
- Wash thoroughly after handling.

C. Inhalation contact

- Take specific treatment if needed.
- When exposed to large amounts of steam and mist, move to fresh air.
- If breathing is stopped or irregular, give artificial respiration and supply oxygen.

D. Ingestion contact

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

E. Delayed and immediate effects and also chronic effects from short and long term exposure

- Not available

F. Notes to physician

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

5. FIREFIGHTING MEASURES

A. Suitable (Unsuitable) extinguishing media

- Avoid use of water jet for extinguishing
- Dry chemical, carbon dioxide, regular foam extinguishing agent, spray

B. Specific hazards arising from the chemical

- Combustible liquid
- Harmful if inhaled
- May cause an allergic skin reaction

C. Special protective actions for firefighters

- Avoid inhalation of materials or combustion by-products.
- Cool containers with water until well after fire is out.
- Do not approach the tank surrounded by fire until it is extinguished.

- In case of conflagration, use automatic fire sprinkler. Major fire may require withdrawal, allowing the object itself to burn.
- Keep unauthorized personnel out.

6. ACCIDENTAL RELEASE MEASURES

A. Personal precautions, protective equipment and emergency procedures

- Do not touch spilled material. Stop leak if you can do it without risk.
- Handle the damaged containers or spilled material after wearing appropriate protective equipment
- Move container to safe area from the leak area.
- Must work against the wind, let the upwind people to evacuate.
- Remove all sources of ignition.

B. Environmental precautions

- If large amounts have been spilled, inform the relevant authorities.
- Prevent runoff and contact with waterways, drains or sewers.

C. Methods and materials for containment and cleaning up

- Appropriate container for disposal of spilled material collected.
- Dike for later disposal.
- Disposal of waste shall be in compliance with the Wastes Control Act
- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notify the central and local government if the emission reach the standard threshold.

7. HANDLING AND STORAGE

A. Precautions for safe handling

- Avoid contact with incompatible materials.
- Avoid direct physical contact.
- Comply with all applicable laws and regulations for handling
- Dealing only with a well-ventilated place.
- Do not handle until all safety precautions have been read and understood.

B. Conditions for safe storage, including any incompatibilities

- Avoid direct sunlight.
- Check regularly for leaks.
- Do not apply any physical shock to container.
- Do not apply direct heat.
- Do not use damaged containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

A. Exposure limits

○ ACGIH TLV

- [Manganese ferrite black spinel (C.I. pigment black 026)] : TWA, 0.02 mg/m3, as Mn, Respirable particulate matter, 0.1 mg/m3, as Mn, Inhalable particulate matter
- [Carbon black] : TWA, 3 mg/m3, Inhalable particulate matter

○ OSHA PEL

- [Carbon black] : 3.5 mg/m3

B. Engineering controls

- Business owner is recommended to maintain below recommended exposure limits for the working place with general exhaust of gas/vapour/mist/fume.

C. Individual protection measures, such as personal protective equipment

○ Respiratory protection

- Any air-purifying respirator with a full facepiece and an organic vapor canister.
- Any chemical cartridge respirator with a full facepiece and organic vaporcartridge(s).
- Any chemical cartridge respirator with organic vapor cartridge(s).

- Consider warning properties before use.

- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.

- Respiratory protection is ranked in order from minimum to maximum.

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.

○ Eye protection

- Provide an emergency eye wash station and quick drench shower in the immediate work area.

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.

○ Hand protection

- Wear appropriate chemical resistant glove.

○ Skin protection

- Wear appropriate chemical resistant protective clothing.

○ Others

- Not available

9. PHYSICAL AND CHEMICAL PROPERTIES

A. Appearance	
- Appearance	Liquid(paste)
- Color	BLACK
B. Odor	Characteristic odor
C. Odor threshold	Not available
D. pH	Not available
E. Melting point/Freezing point	Not available
F. Initial Boiling Point/Boiling Ranges	Not available
G. Flash point	70°C
H. Evaporation rate	Not available
I. Flammability(solid, gas)	Not available
J. Upper/Lower Flammability or explosive limits	Not available
K. Vapour pressure	Not available
L. Solubility	Not available
M. Vapour density	Not available
N. Specific gravity(Relative density)	1.43 ± 0.05
O. Partition coefficient of n-octanol/water	Not available
P. Autoignition temperature	Not available
Q. Decomposition temperature	Not available
R. Viscosity	Not available
S. Molecular weight	Not available

10. STABILITY AND REACTIVITY

A. Chemical Stability

- This material is stable under recommended storage and handling conditions.

B. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

C. Conditions to avoid

- Avoid contact with incompatible materials and condition.

- Avoid: Heating, Flames and hot surfaces

D. Incompatible materials

- Sparks, flames, static electricity, strong acids and base substances

E. Hazardous decomposition products

- May emit flammable vapour if involved in fire.

11. TOXICOLOGICAL INFORMATION

A. Information on the likely routes of exposure

○ Respiratory tracts

- Not available

○ Oral

- Not available

○ Eye·Skin

- May cause an allergic skin reaction

B. Delayed and immediate effects and also chronic effects from short and long term exposure

○ Acute toxicity

* Oral

- Product (ATEmix) : >5000mg/kg
- [Calcium carbonate] : LD50 > 2000 mg/kg Rat No death Not classified (OECD TG 420, GLP) (ECHA)
- [Siloxanes and Silicones, di-Me] : LD50 > 17000 ㎎/㎏ Rat (NLM)
- [Aluminium hydroxide] : LD50 > 2000 mg/kg Rat (female) (OECD TG 423, GLP) (ECHA)
- [Trimethoxyvinylsilane] : LD50 6899~7012 mg/kg Rat (7.34~7.46 mL/kg) (OECD TG 401) (ECHA)
- [Bis(ethyl 3-oxobutanoato-O1',O3)bis(2-propanolato)titanium] : LC50 23020 mg/kg Rat (OECD TG 401) (ECHA)
- [Carbon black] : LD50 > 8000 mg/kg Rat (OECD TG 401) (ECHA)
- [N-(3-(trimethoxysilyl)propyl)ethylenediamine (AEAPTMS)] : LD50 2295 mg/kg Rat (EPA OPPTS 870.1100, GLP) (ECHA)

* Dermal

- Product (ATEmix) : 2000mg/kg < ATEmix <= 5000mg/kg
- [Calcium carbonate] : LD50 > 2000 mg/kg Rat No death Not classified (OECD TG 402, GLP) (ECHA)
- [Siloxanes and Silicones, di-Me] : LD50 > 2000 ㎎/㎏ Rabbit (NLM)
- [Trimethoxyvinylsilane] : LD50 3158 mg/kg (3.36 mL/kg) (OECD TG 402) (ECHA)
- [Bis(ethyl 3-oxobutanoato-O1',O3)bis(2-propanolato)titanium] : LD50 12870 mg/kg Rabbit (Read-across 67-63-0) (ECHA)
- [Carbon black] : LD50 > 3000 mg/kg Rabbit (NITE), LD50 > 2000 mg/kg Rabbit (40 CFR, GLP) (ECHA)
- [N-(3-(trimethoxysilyl)propyl)ethylenediamine (AEAPTMS)] : LD50 > 2000 mg/kg Rabbit (EPA OPPTS 870.1200, GLP) (ECHA)

* Inhalation

- Product (ATEmix) : 10.0mg/L 4hr < ATEmix <= 20.0mg/L 4hr
- [Calcium carbonate] : Aerosol LC50 > 3 mg/L 4 hr Rat No death Not classified (OECD TG 403, GLP) (ECHA)
- [Aluminium hydroxide] : Aerosol LC50 > 2.3 mg/L 4 hr Rat No death (Read-across Fumed alumina) (OECD TG 403, GLP) (ECHA)
- [Trimethoxyvinylsilane] : Vapor LC50 16.8 mg/L 4 hr Rat (2773 ppm) (OECD TG 403) (ECHA)
- [Bis(ethyl 3-oxobutanoato-O1',O3)bis(2-propanolato)titanium] : Vapour LC50 > 10000 ppm (> 24.6 mg/L) 6 hr mg/kg Rat No death Not classified (Read-across 67-63-0) (ECHA)
- [Carbon black] : Dust LC0 4.6 mg/m3 4 hr Rat No death Not classified (OECD TG 403) (ECHA)
- [N-(3-(trimethoxysilyl)propyl)ethylenediamine (AEAPTMS)] : Aerosol LC50 > 1.49 ~ < 2.44 mg/L 4hr Rat (OECD TG 403, GLP) (ECHA)

○ Skin corrosion/irritation

- Not available

○ Serious eye damage/irritation

- Not available

○ Respiratory sensitization

- Not available

○ Skin sensitization

- May cause an allergic skin reaction

○ Carcinogenicity

* IARC

- [Carbon black] : Group 2B

* OSHA

- Not available

* ACGIH

- [Manganese ferrite black spinel (C.I. pigment black 026)] : A4
- [Carbon black] : A3

* NTP

- Not available

* EU CLP

- Not available

* Other information

- Not available

○ Germ cell mutagenicity

- Not available

○ Reproductive toxicity

- Not available

○ STOT-single exposure

- Not available

○ STOT-repeated exposure

- Not available

○ Aspiration hazard

- Not available

12. ECOLOGICAL INFORMATION

A. Ecotoxicity

○ Fish

- [Calcium carbonate] : LC50 > 100 % v/v saturated solution 96 hr Oncorhynchus mykiss (OECD TG 203, GLP) (ECHA)
- [Aluminium hydroxide] : LC50 > 50 mg/L 96hr Lepomis cyanellus, NOEC 56.4766 mg/L 7d Pimephales promelas (ECHA)
- [Trimethoxyvinylsilane] : LC50 191 mg/L 96 hr Oncorhynchus mykiss (ECHA)
- [Bis(ethyl 3-oxobutanoato-O1',O3)bis(2-propanolato)titanium] : LC50 9640 mg/L 96 hr Pimephales promelas (Read-across 67-63-0) (ECHA)
- [Carbon black] : LC50 > 1000 mg/L 96 hr Leuciscus idus (ECHA)
- [N-(3-(trimethoxysilyl)propyl)ethylenediamine (AEAPTMS)] : LC50 597 mg/L 96hr Danio rerio (EU Method C.1, GLP) (ECHA)

○ Crustaceans

- [Calcium carbonate] : EC50 > 100 % v/v saturated solution 48 hr Daphnia magna (OECD TG 202, GLP) (ECHA)
- [Aluminium hydroxide] : EC50 > 99.6 mg/L 48hr, NOEC 1.1 mg/L 7d Ceriodaphnia dubia (ECHA)
- [Trimethoxyvinylsilane] : EC50 168.7 mg/L 48 hr Daphnia magna (EU Method C.2, GLP), NOEC 28.1 mg/L 21 d Daphnia magna (OECD TG 211, GLP) (ECHA)
- [Bis(ethyl 3-oxobutanoato-O1',O3)bis(2-propanolato)titanium] : EC50 > 9.8 mg/L 48 hr Daphnia magna (OECD TG

202, GLP) (ECHA)

- [Carbon black] : LC50 > 5600 mg/L 24 hr Daphnia magna (OECD TG 202, GLP) (ECHA)

- [N-(3-(trimethoxysilyl)propyl)ethylenediamine (AEAPTMS)] : EC50 81 mg/L 48hr Daphnia magna (EU Method C.2, GLP), NOEC >= 1 ppm 21d Daphnia magna (ECHA)

○ Algae

- [Calcium carbonate] : EC50 > 14 mg/L 72 hr, NOEC 14 mg/L 72 hr Desmodesmus subspicatus (OECD TG 201, GLP) (ECHA)

- [Trimethoxyvinylsilane] : EC50 > 89 mg/L 72 hr, NOEC > 89 mg/L 72 hr Raphidocelis subcapitata (GLP) (ECHA)

- [Bis(ethyl 3-oxobutanoato-O1',O3)bis(2-propanolato)titanium] : EC50 > 11 mg/L, NOEC 11 mg/L 72 hr Raphidocelis subcapitata (OECD TG 201, GLP) (ECHA)

- [Carbon black] : EC50 > 10000 mg/L 72 hr, NOEC >= 10000 mg/L 72 hr Desmodesmus subspicatus (OECD TG 201, GLP) (ECHA)

- [N-(3-(trimethoxysilyl)propyl)ethylenediamine (AEAPTMS)] : EC50 8.8 mg/L, NOEC 3.1 mg/L 72hr Raphidocelis subcapitata (OECD TG 201, GLP) (ECHA)

B. Persistence and degradability

○ Persistence

- [Bis(ethyl 3-oxobutanoato-O1',O3)bis(2-propanolato)titanium] : log Pow 0.05 (25 ℃) (Read-across 67-63-0) (ECHA)

○ Degradability

- Not available

C. Bioaccumulative potential

○ Bioaccumulative potential

- Not available

○ Biodegradation

- [Calcium carbonate] : Readily biodegradable, 90 % 28 d (CO_2 evolution) (OECD TG 301 B, GLP) (ECHA)

- [Trimethoxyvinylsilane] : Not readily biodegradable, 51 % degradation (O_2 consumption) 28d (OECD TG 301 F, GLP) (ECHA)

- [Bis(ethyl 3-oxobutanoato-O1',O3)bis(2-propanolato)titanium] : Readily biodegradable, 72 % 20 d (O_2 consumption) (Read-across 67-63-0) (EU Method C.5) (ECHA)

- [Carbon black] : 6 % 28 d, Not readily biodegradable (OECD TG 301 B, GLP) (ECHA)

- [N-(3-(trimethoxysilyl)propyl)ethylenediamine (AEAPTMS)] : Not readily biodegradable, 39 % degradation (DOC removal) 28 d (EU Method C.4-A, GLP) (ECHA)

D. Mobility in soil

- [Bis(ethyl 3-oxobutanoato-O1',O3)bis(2-propanolato)titanium] : Koc 1.53 (Read-across 67-63-0) (ECHA)

E. Other adverse effects

- Not available

13. DISPOSAL CONSIDERATIONS

A. Disposal methods

- It shall be treated by incineration

- Oil water separation technology shall be applied as pre-waste treatment if it is applicable

- Stabilization and minimization treatment by incineration or similar method can be applied, if more than two kinds of designated wastes are in mixture state and it is impractical to separate them

B. Special precautions for disposal

- Anyone with business license number who generates industrial wastes shall treat the waste by him/herself or by entrusting to the legal entities who treat the wastes, recycle the wastes of others or install and operate the waste treatment facilities according to the Wastes Control Act

- Dispose of waste in accordance with all applicable laws and regulations.

14. TRANSPORT INFORMATION

A. UN No. (IMDG CODE/IATA DGR)

- Not applicable

B. Proper shipping name

- Not applicable

C. Hazard Class

- Not applicable

D. IMDG CODE/IATA DGR Packing group

- Not applicable

E. Marine pollutant

- Not applicable

F. Special precautions for user related to transport or transportation measures

- Air transport(IATA): Not subject to IATA regulations.
- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency requirements.
- EmS FIRE SCHEDULE : Not available
- EmS SPILLAGE SCHEDULE : Not available

15. REGULATORY INFORMATION

A. National and/or international regulatory information

○ POPs Management Law

- [Siloxanes and Silicones, di-Me, hydroxy-terminated] : Not applicable
- [Calcium carbonate] : Not applicable
- [Siloxanes and Silicones, di-Me] : Not applicable
- [Aluminium hydroxide] : Not applicable
- [Manganese ferrite black spinel (C.I. pigment black 026)] : Not applicable
- [Trimethoxyvinylsilane] : Not applicable
- [Bis(ethyl 3-oxobutanoato-O1',O3)bis(2-propanolato)titanium] : Not applicable
- [Carbon black] : Not applicable
- [N-(3-(trimethoxysilyl)propyl)ethylenediamine (AEAPTMS)] : Not applicable

○ Information of EU Classification

* Classification
  - Not applicable

○ U.S. Federal regulations

* OSHA PROCESS SAFETY (29CFR1910.119)
  - Not applicable
* CERCLA Section 103 (40CFR302.4)
  - Not applicable
* EPCRA Section 302 (40CFR355.30)
  - Not applicable
* EPCRA Section 304 (40CFR355.40)
  - Not applicable
* EPCRA Section 313 (40CFR372.65)
  - Not applicable

○ Rotterdam Convention listed ingredients

- Not applicable

○ Stockholm Convention listed ingredients

- Not applicable

○ Montreal Protocol listed ingredients

- Not applicable

16. OTHER INFORMATION

A. Reference

- The information contained herein is believed to be accurate. It is provided independently of any sale of the product for purpose of hazard communication. It is not intended to constitute performance information concerning the product. No express warranty, or implied warranty of merchantability or fitness for a particular purpose is made with respect to the product or the information contained herein.

- This Safety Data Sheet was compiled with data and information from the following sources: KOSHA, NITE, ESIS, NLM, SIDS, IPCS

B. Issue date

- 2023-02-17

C. Revision number and Last date revised

- 1 times, 2026-07-15

D. Other

- This SDS is prepared according to the Globally Harmonized System (GHS).