MATERIAL SAFETY DATA SHEET

1. Product and company identification

a. Product Name Micro Sized, Spherical Silica Powder Coated with Triethoxycaprylylsilane.
SILNOS 190TE

b. Recommended use of the chemical And restrictions on use

Relevant identified uses Cosmetics

Uses advised against No data available

c. Manufacturer/Supplier/Distributor Information

Name ABC NANOTECH CO., LTD.

Address 551 Yongsan-Dong. Yuseong-Gu, Daejeon City 305-500, KOREA

Emergency phone number +82-42-936-9001

Department Quality Control Team

2. Hazerds identification

a. Hazard·Risk Classification Not Classified

b. Label elements including precautionary statements

Symbol Not applicable

Signal Word Not applicable

Hazard·Risk Statement Not applicable

Precautionary Statement Avoid breathing dust/fume/gas/mist/vapours/spray
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection protection.

Response Remove to fresh air. Take a rest by comfortable position
Get medical advice/attention if you feel unwell.
IF ON SKIN: Wash with plenty of soap and water.

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

Disposal Dispose of contents/container in accordance with local/ regional/ national/ international regulations.

c. Other Hazard·Risk which are not included in the classification criteria (e.g. dust explosion hazard)

Health 1

Flammabilty 0

Reactivity 0

3. Composition/Information on ingredients

Chemical Name	Common names and synonyms	Molecular formula	CAS number	Content (%)
Synthetic Amorphous Silica	Silica	SiO_2	7631-86-9	90~97
Triethoxycaprylylsilane	1-OCTYLTRIETHOXYSILANE	C14H32O3Si	2943-75-1	3~10

4. First aid measures

a. Eye contact Immediately flush lightly with plenty of water for at least 20 minutes. If symptoms develop, seek medical attention

b. Skin contact Wash skin for personal hygienic reasons. If symptoms develop, seek medical attention

c. Inhalation Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If symptoms develop, seek medical attention..

d. Ingestion Do not induce vomiting. If conscious, rinse mouth with water. If symptoms develop, seek medical attention..

e. Indication of immediate medical attention and notes for physician

Treat symptomatically for lung or eye irritation, if present.

5. Fire-Fighting measures

a. Suitable (and unsuitable) extinguishing media

Use alcohol foam, carbon dioxide, water spray, sand for extinction

b. Specific hazards arising from the chemical
(e.g. nature of any hazardous combustion products)

Pyrolysate Crystal form Silica

Fire or Explosion Silica is an inorganic dust and will not create nor support conditions that would result in a dust explosion or fire.

C. Special protective equipment and precautions for fire-fighters

Wear proper protective equipment..
Fight fire with normal precautions from a reasonable distance.
Dig a ditch for slaking water to be disposed and prevent the loss of the substances..
Stop leak if safe to do so
Extinguish the fire from a distance or use an unmanned fire extinguisher when fires on a tank occurrs..
Cool the container down with much water after putting out the fire on a tank..
Step back immediately if the pressure relief device makes high pitched

sound or tank discolors after the fire.
Step back from the tank engulfed in flames after the fire on the tank.
If possible, use an unmanned fire extinguisher when large scale fire occurs, and if not, just let it burn.

6. Accidental release measures

a. Personal precautions, protective equipment and emergency procedures

Do not breathe dust/fume/gas/mist/vapours/spray..
Wear goggles if release creates conditions where eye contact is probable.
Ventilate area if necessary
If user operations generate dust, then an approved respirator for dust/mists is recommended..

b. Environmental precautions and protective procedures

Prevent inflow of it into waterway, drain, basement or enclosed space.

c. Methods and materials for containment and cleaning up

Spills may be collected, preferably by vacuum, and placed in suitable container for disposal

7. Handling and storage

a. Precautions for safe handling

Do no eat, drink or smoke when using this product.
Do not breathe dust/fume/gas/mist/vapours/spray.
Contaminated work clothing should not be allowed out of the workplace.
Follow the precaution for MSDS/label because there can be residues from the pruduct after emptying out the container.
Handle/store it with care.
Drew the cork out with care.
Prevent prolonged or continuous contact with skin.
Note the substances and conditions to avoid.
Note the manual for engineered safeguard and personal protective equipment when working.

b. Conditions for safe storage (including any incompatibilities).

Store at the storage with locking device.
Product should be stored dry and away from volatile chemicals
2 years from the date of receipt under proper storage condition

8. Exposure controls & personal protection

a. Control parameters (e.g. occupational exposure limit values, biological limit values)

Korea Limit TWA - 10mg/m3

ACGIH	None
BEI	None
b. Appropriate engineering controls	If user operations generate dust, fume, or mist, use ventilation to minimize dust levels.
c. Personal protective equipment	
	An approved air-purifying respirator (APR) for particulates may be appropriate to control exposure to dust . Protection provided by air-purifying respirators is limited. Use a positive-pressure, air supplied respirator if there is any potential for uncontrolled release, exposure levels are not known, or any circumstances where air-purifying respirators may not provide adequate protection. Use of respirators must include a complete respiratory protection program in accordance with national standards and current best practices. The following agencies/organizations approve respirators and/or criteria for respirator programs.
US	NIOSH Approval under 42 CFR 84 Required OSHA (29 CFR 1910.134)
EU	CR592 Guidelines for the Selection and Use of Respiratory Protection. Germany: DIN/EN 143 Respiratory Protective Devices for Dusty Materials.
UK	BS 4275 Recommendations for the Selection. Use and Maintenance of Respiratory Protective Equipment. HSE Guidance Note HS(G)53 Respiratory Protective Equipment.

9. Physical and chemical properties

a. Appearance (physical state, color etc)	
Appearance	Soild(powder)
Color	Fine white
b. Odour	Typical
c. Odour threshold	None
d. pH	6~9 (approximately 10% silica in the distilled water)
e. Meting point/freezing point	> 150 ℃ (Estimates)
f. Initial boiling point and boiling range	None
g. Flashing point	135~335 ° C (Estimates)
h. Evaporation rate	None
i. Flammability (solid, gas)	None
j. Upper/lower flammability or explosive limits	- / -
k. Vapor pressure	None
l. Solubility	None
m. Vapor density	None
n. Specific gravity	< 1
o. Partition coefficient: n-octanol/water	None
p. Auto-ignition temperature	None
q. Decomposition temperature	None
r. Viscosity	None

s. Formula mass None

10. Stability and reactivity

a. Chemical stability and possibility of hazardous reactions

High temperatures can cause toxic gas through evaporation.
Explosion risk in case of fire.
It is not very flammable; however, it can become partially burnt..
Nonflammability: it is not very flammable, but it can cause corrosive/toxic fumes when heating up..

b. Conditions to avoid (e.g. static discharge, shock or vibration, etc):

Heat, sparks, flames etc. sources of ignition

c. Incompatible materials Combustible materials, Reducing substances

d. Hazardous decomposition products Causticity/Toxic fume

Irritation, Causticity, Toxic gases

11. Toxicological information

a. Information on the likely routes of Exposure May cause respiratory irritation.

b. Health hazards information

Acute toxic

Silicon Dioxide

Oral	LD50 3,300 ㎎/㎏	※ SIDS
Skin	LD50 5,000 ㎎/㎏	※ SIDS
Inhalation	Dust LC50> 2.0 ㎎/ℓ	※ SIDS

TRIETHOXYOCTYLSILANE

Oral	LD50 (Rat): > 5,110 mg/kg Assessment: The substance or mixture has no acute oral toxicity.
Skin	LD50 (Rat): 6,730 mg/kg Assessment: The substance or mixture has no acute dermal toxicity. Remarks: Based on test data
Inhalation	None

Skin corrosive/irritant	No irritation (Experimental phase)	※ SIDS
Serious eye damage/eye irritation	No irritation (Experimental phase)	※ SIDS
Respiratory sensitization	None	
Skin sensitization	None	
Carcinogenicity		
IARC	Group 3 Silica, amorphous	
NTP	None	
OSHA	None	

EU CLP	None
ACGIH	None
Germ Cell Mutagenicity	Experiment result , No mutagenic ※ SIDS
Reproductive toxicity	None
Specific target organ toxicity (single exposure)	None
Specific target organ toxicity (repeated exposure)	None
Aspiration hazard	None

12. Ecological information

a. Aquatic and terrestrial ecotoxicity

Silicon Dioxide	
Fish	LC50 5000 ㎎/ℓ 96 hr
Shellfish	LC50 7600 ㎎/ℓ 48 hr
Birds	EC50 440 ㎎/ℓ 72 hr
TRIETHOXYOCTYLSILANE	
Fish	LC50 1.607 ㎎/ℓ 96 hr
Shellfish	LC50 2.010 ㎎/ℓ 48 hr
Birds	EC50 < 1.000 ㎎/ℓ 96 hr

b. Persistence and degradability

Persistence	
Silicon Dioxide	log Kow 0.53
TRIETHOXYOCTYLSILANE	log Kow 4.24
Degradability	None

c. Bioaccumulative potential

Condenasability	Silicon Dioxide	BCF 3.162
Biodegradable		None
d. Mobility in soil		None
e. Other adverse effects		None

13. Disposal considerations

a. Disposal method (According to the related laws) dispose the container and contents.

b. Disposal precaution (including the disposal method of contaminated container and packaging)
(According to the related laws) dispose the container and contents.

14. Transport information

a. UN Number	Not applicable
b. UN proper shipping name	Not applicable
c. Transport hazard class	Not applicable
d. Packing group (if applicable)	Not applicable
e. Marin pollution (yes/no)	None

f. Special precaution which a user to be aware of or needs to comply with in connection with transport or

conveyance either within or outside their premises	
Emergency measures in case of fire	Not applicable
Emergency measures in case of outflow	Not applicable
g. Shipping Name (CFR):	Non-hazardous
h. Hazard Class (CFR):	Not applicable
i. Additional Hazard Class (CFR):	Not applicable
j. Packaging Group (CFR):	Not applicable
k. UN ID Number (CFR):	Not applicable
l. Shipping Name (IATA):	Non-hazardous
m.Hazard Class (IATA):	Not applicable
n. Additional Hazard Class (IATA):	Not applicable
o. Packaging Group (IATA):	Not applicable
p. UN ID Number (IATA):	Not applicable

15. Regulatory information

a. Korea regulation

Industrial Safety and Health Act Silicon Dioxide	Meterial measured about working environment (period of measurement: 6 months. Special medical examination Substance (period of diagnosis : 12 months). Meterial with exposure standard setting.
Toxic Chemical Control Act	Not applicable
Dangerous Material Safety Control Act	Not applicable
Wastes Management Act	Designated waste
POPs Control act	Not applicable

b. International regulation

US Administration Informatio (OSHA regulation)	Not applicable
US Administration Information (CERCLA regulation)	Not applicable
US Administration Information (EPCRA 302 regulation)	Not applicable
US Administration Information(EPCRA 304 regulation)	Not applicable
US Administration Information (EPCRA 313 regulation)	Not applicable
US Administration Information (Rotterdam agreement substance)	Not applicable
US Administration Information (Stockholm agreement substance)	Not applicable
US Administration Information (Montreal Protocol substance)	Not applicable
EU classification information (Confilm classification result)	Not applicable
EU classification information (danger word)	Not applicable
EU classification information (safety word)	Not applicable

16. Other information

a. Information source and references

SIDS, TOMES; HAZARDTEXT(Oral)
SIDS, IUCLID (Skin)
SIDS, IUCLID (Inhalation)
SIDS, IUCLID (Skin corrosion or Irritation)
SIDS, (Skin Sensitization)
IUCLID(Fish)
IUCLID(Shellfish)
IUCLID(Birds)
Korea Occupational Safety Health Agency,
KE No.: KE-31032/KE-32733

b. Issuing date	2002-10-01
c. Revision number	9.0
d. Last revision date	2019-07-19
e. others	None

The information contained herein relates only to this product or material and may not be valid when used in combination with any other product or material or in any process. If the product is not to be used for a purpose or under conditions which are normal or reasonably foreseeable, this information cannot be relied upon as complete or applicable.
ABC Nanotech Co., Ltd. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose.

ABC NANOTECH CO., LTD. MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, NANOTECH CO., LTD. WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.

Prepared by: Environmental Health & Safety
Phone Number: +82-42-936-9001 (KOREA)