

SAFETY DATA SHEET

according to GB/T 16483 and GB/T 17519



Starblast™ Ultra Staurolite Sand Blasting Abrasives

| | | | |
|---------|----------------|---------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 2023/04/21 |
| 9.0 | 2023/10/19 | 1331992-00049 | Date of first issue: 2017/02/27 |

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Starblast™ Ultra Staurolite Sand Blasting Abrasives

SDS-Identcode : 130000030941

Manufacturer or supplier's details

Company : The Chemours Chemical (Shanghai) Co., Ltd.

Address : 9F, SCG Parkside, 868 Yinghua Road, Pudong New District
201204, Shanghai, China

Telephone : 86 400 8056 528

Emergency telephone number : 86 532 8388 9090

E-mail address : SDS.ChinaPSR@chemours.com

Telefax : 86 21 2612 0862

Recommended use of the chemical and restrictions on use

Recommended use : Abrasive blasting
Sand blasting

Restrictions on use : For industrial use only.

2. HAZARDS IDENTIFICATION

Emergency Overview

| | |
|------------|-------------------------------------|
| Appearance | : solid, dry, free flowing granules |
| Colour | : red brown |
| Odour | : odourless |

Not a hazardous substance or mixture.

GHS Classification

Not a hazardous substance or mixture.

GHS label elements

No hazard pictogram, no signal word, no hazard statement(s), no precautionary statement(s) required

Physical and chemical hazards

Not classified based on available information.

SAFETY DATA SHEET

according to GB/T 16483 and GB/T 17519



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| | | | |
|---------|----------------|---------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 2023/04/21 |
| 9.0 | 2023/10/19 | 1331992-00049 | Date of first issue: 2017/02/27 |

Health hazards

Not classified based on available information.

Environmental hazards

Not classified based on available information.

Other hazards which do not result in classification

None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

| Chemical name | CAS-No. | Concentration (% w/w) |
|---------------|------------|-----------------------|
| Staurolite# | 12182-56-8 | ≥ 70 -< 90 |
| Quartz | 14808-60-7 | ≥ 1 -< 10 |

Voluntarily-disclosed substance

4. FIRST AID MEASURES

| | |
|---|---|
| If inhaled | : If inhaled, remove to fresh air. Get medical attention if symptoms occur. |
| In case of skin contact | : Wash with water and soap as a precaution. Get medical attention if symptoms occur. |
| In case of eye contact | : Flush eyes with water as a precaution. Get medical attention if irritation develops and persists. |
| If swallowed | : If swallowed, DO NOT induce vomiting. Get medical attention if symptoms occur. Rinse mouth thoroughly with water. |
| Most important symptoms and effects, both acute and delayed | : irritant effects |
| Protection of first-aiders | : No special precautions are necessary for first aid responders. |
| Notes to physician | : Treat symptomatically and supportively. |

5. FIREFIGHTING MEASURES

Suitable extinguishing media : Not applicable
Will not burn

SAFETY DATA SHEET

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| | | | |
|---------|----------------|---------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 2023/04/21 |
| 9.0 | 2023/10/19 | 1331992-00049 | Date of first issue: 2017/02/27 |

| | | |
|---|---|---|
| Unsuitable extinguishing media | : | Not applicable Will not burn |
| Specific hazards during fire-fighting | : | Exposure to combustion products may be a hazard to health. |
| Hazardous combustion products | : | No hazardous combustion products are known |
| Specific extinguishing methods | : | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Remove undamaged containers from fire area if it is safe to do so. Evacuate area. |
| Special protective equipment for firefighters | : | Wear self-contained breathing apparatus for firefighting if necessary. Use personal protective equipment. |

6. ACCIDENTAL RELEASE MEASURES

| | | |
|---|---|---|
| Personal precautions, protective equipment and emergency procedures | : | Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8). |
| Environmental precautions | : | Prevent further leakage or spillage if safe to do so. Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained. |
| Methods and materials for containment and cleaning up | : | Sweep up or vacuum up spillage and collect in suitable container for disposal. Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable. Sections 13 and 15 of this SDS provide information regarding certain local or national requirements. |

7. HANDLING AND STORAGE

Handling

| | | |
|-------------------------|---|---|
| Technical measures | : | See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section. |
| Local/Total ventilation | : | Use only with adequate ventilation. |

SAFETY DATA SHEET

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| | | | |
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Advice on safe handling : Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment

Avoidance of contact : None.

Storage

Conditions for safe storage : Keep in properly labelled containers.
Store in accordance with the particular national regulations.

Materials to avoid : No special restrictions on storage with other products.

Packaging material : Unsuitable material: None known.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

| Components | CAS-No. | Value type (Form of exposure) | Control parameters / Permissible concentration | Basis |
|--|------------|-------------------------------------|--|--------|
| Quartz | 14808-60-7 | PC-TWA (Total dust) | 0.5 mg/m ³ | CN OEL |
| Further information: G1 - Carcinogenic to humans | | | | |
| | | PC-TWA (Respirable dust) | 0.2 mg/m ³ | CN OEL |
| Further information: G1 - Carcinogenic to humans | | | | |
| | | TWA (Respirable particulate matter) | 0.025 mg/m ³ (Silica) | ACGIH |

This substance(s) is not bioavailable and therefore does not contribute to a dust inhalation hazard.

Quartz

Engineering measures : If using this product as an abrasive blast agent in confined areas, airborne dust levels should be controlled by physical enclosure of the abrasive blasting operation. The enclosure should be exhaust ventilated.

Personal protective equipment

Respiratory protection : If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.

SAFETY DATA SHEET

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| | | | |
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| 9.0 | 2023/10/19 | 1331992-00049 | Date of first issue: 2017/02/27 |

| | | |
|-----------------------------|---|---|
| Filter type | : | Particulates type |
| Eye/face protection | : | Wear the following personal protective equipment: Safety glasses |
| Skin and body protection | : | Skin should be washed after contact. |
| Hand protection Material | : | Protective gloves |
| Remarks | : | Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work. For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday. Breakthrough time is not determined for the product. Change gloves often! |
| Hygiene measures | : | If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use. |

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | |
|---|---|-----------------------------------|
| Appearance | : | solid, dry, free flowing granules |
| Colour | : | red brown |
| Odour | : | odourless |
| Odour Threshold | : | No data available |
| pH | : | No data available |
| Melting point/freezing point | : | 1,370 °C |
| Initial boiling point and boiling range | : | No data available |

SAFETY DATA SHEET

according to GB/T 16483 and GB/T 17519



Starblast™ Ultra Staurolite Sand Blasting Abrasives

| | | | |
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| 9.0 | 2023/10/19 | 1331992-00049 | Date of first issue: 2017/02/27 |

| | | |
|--|---|---|
| Flash point | : | Not applicable |
| Evaporation rate | : | Not applicable |
| Flammability (solid, gas) | : | Will not burn |
| | | Not expected to form explosive dust-air mixtures. |
| Upper explosion limit / Upper flammability limit | : | No data available |
| Lower explosion limit / Lower flammability limit | : | No data available |
| Vapour pressure | : | Not applicable |
| Relative vapour density | : | Not applicable |
| Relative density | : | 3.7 |
| Solubility(ies) | | |
| Water solubility | : | insoluble |
| Partition coefficient: n-octanol/water | : | Not applicable |
| Auto-ignition temperature | : | No data available |
| Decomposition temperature | : | The substance or mixture is not classified self-reactive. |
| Viscosity | | |
| Viscosity, kinematic | : | Not applicable |
| Explosive properties | : | Not explosive |
| Oxidizing properties | : | The substance or mixture is not classified as oxidizing. |
| Particle size | : | No data available |

10. STABILITY AND REACTIVITY

| | | |
|------------------------------------|---|--|
| Reactivity | : | Not classified as a reactivity hazard. |
| Chemical stability | : | Stable under normal conditions. |
| Possibility of hazardous reactions | : | None known. |

SAFETY DATA SHEET

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Starblast™ Ultra Staurolite Sand Blasting Abrasives

| | | | |
|---------|----------------|---------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 2023/04/21 |
| 9.0 | 2023/10/19 | 1331992-00049 | Date of first issue: 2017/02/27 |

Conditions to avoid : None known.

Incompatible materials : None.

Hazardous decomposition products : No hazardous decomposition products are known.

11. TOXICOLOGICAL INFORMATION

Exposure routes : Skin contact
Ingestion
Eye contact

Acute toxicity

Not classified based on available information.

Product:

Acute inhalation toxicity : Remarks: The objective of the study was to compare the lung toxicity of a set of abrasive substitutes for silica dust (garnet, staurolite, coal slag, specular hematite, and treated sand) to that of blasting sand. Rats were intratracheally instilled with 2.5 or 10 mg/kg of the various test substances and pulmonary toxicity endpoints were measured at 4 weeks postexposure. The biomarkers included lung inflammation and cytotoxicity endpoints. In addition, the investigators measured alveolar macrophage activation. The results indicated that blasting sand produced evidence of pulmonary toxicity/inflammation and lung fibrosis. Garnet, staurolite, and treated sand exposures induced pulmonary hazard effects and inflammation that were viewed as similar to blasting sand, while coal slag instillation produced greater pulmonary damage and inflammation than blasting sand. In contrast, specular hematite did not significantly increased levels of inflammation and cytotoxicity and did not stimulate macrophage activation. [Hubbs AF et al., Toxicological Sciences volume 61: 135-143, 2001] The results of this study should be viewed as a preliminary, screening-type pulmonary toxicity study which utilized very high, overload doses. Subsequently, the NIOSH researchers followed up on the Hubbs et al., study with another lung toxicity screening study of blasting agents ["Comparative pulmonary toxicity of blasting sand and five substitute abrasive blasting agents" – DW Porter et al., J Toxicol Environ Health A 65:1121-40, 2002]. The additional test substances included steel grit, copper slag, nickel slag, crushed glass and olivine. The authors reported that steel grit produced less lung toxicity than blasting sand or any of the other abrasive blasting substitutes

SAFETY DATA SHEET

according to GB/T 16483 and GB/T 17519



Starblast™ Ultra Staurolite Sand Blasting Abrasives

| | | | |
|---------|----------------|---------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 2023/04/21 |
| 9.0 | 2023/10/19 | 1331992-00049 | Date of first issue: 2017/02/27 |

Components:

Staurolite:

| | |
|---------------------------|--|
| Acute oral toxicity | : LD50 (Rat): > 5,000 mg/kg |
| Acute inhalation toxicity | : LC50 (Rat): > 5 mg/l Exposure time: 4 h Test atmosphere: dust/mist |
| Acute dermal toxicity | : LD50 (Rabbit): > 2,000 mg/kg |

Quartz:

| | |
|---------------------|-----------------------------|
| Acute oral toxicity | : LD50 (Rat): > 5,000 mg/kg |
|---------------------|-----------------------------|

Skin corrosion/irritation

Not classified based on available information.

Serious eye damage/eye irritation

Not classified based on available information.

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

Components:

Quartz:

| | |
|-------------------|--|
| Species | : Humans |
| Application Route | : inhalation (dust/mist/fume) |
| Result | : positive |
| Remarks | : This substance(s) is not bioavailable and therefore does not contribute to a dust inhalation hazard. |

| | |
|------------------------------|---|
| Carcinogenicity - Assessment | : Positive evidence from human epidemiological studies (inhalation) |
|------------------------------|---|

Reproductive toxicity

Not classified based on available information.

SAFETY DATA SHEET

according to GB/T 16483 and GB/T 17519



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| | | | |
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| Version | Revision Date: | SDS Number: | Date of last issue: 2023/04/21 |
| 9.0 | 2023/10/19 | 1331992-00049 | Date of first issue: 2017/02/27 |

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

Components:

Quartz:

| | |
|-----------------|---|
| Exposure routes | : inhalation (dust/mist/fume) |
| Target Organs | : Lungs |
| Assessment | : Shown to produce significant health effects in animals at concentrations of 0.02 mg/l/6h/d or less. |

Repeated dose toxicity

Components:

Quartz:

| | |
|-------------------|--|
| Species | : Humans |
| LOAEL | : 0.053 mg/m ³ |
| Application Route | : inhalation (dust/mist/fume) |
| Remarks | : This substance(s) is not bioavailable and therefore does not contribute to a dust inhalation hazard. |

Aspiration toxicity

Not classified based on available information.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

Quartz:

Ecotoxicology Assessment

| | |
|--------------------------|--|
| Acute aquatic toxicity | : No toxicity at the limit of solubility |
| Chronic aquatic toxicity | : No toxicity at the limit of solubility |

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

SAFETY DATA SHEET

according to GB/T 16483 and GB/T 17519



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| | | | |
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| 9.0 | 2023/10/19 | 1331992-00049 | Date of first issue: 2017/02/27 |

Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

Disposal methods

| | |
|------------------------|---|
| Waste from residues | : Do not dispose of waste into sewer. Dispose of in accordance with local regulations. |
| Contaminated packaging | : Empty containers should be taken to an approved waste handling site for recycling or disposal. If not otherwise specified: Dispose of as unused product. |

14. TRANSPORT INFORMATION

International Regulations

UNRTDG

| | |
|----------------------|------------------|
| UN number | : Not applicable |
| Proper shipping name | : Not applicable |
| Class | : Not applicable |
| Subsidiary risk | : Not applicable |
| Packing group | : Not applicable |
| Labels | : Not applicable |

IATA-DGR

| | |
|--|------------------|
| UN/ID No. | : Not applicable |
| Proper shipping name | : Not applicable |
| Class | : Not applicable |
| Subsidiary risk | : Not applicable |
| Packing group | : Not applicable |
| Labels | : Not applicable |
| Packing instruction (cargo aircraft) | : Not applicable |
| Packing instruction (passenger aircraft) | : Not applicable |

IMDG-Code

| | |
|----------------------|------------------|
| UN number | : Not applicable |
| Proper shipping name | : Not applicable |
| Class | : Not applicable |
| Subsidiary risk | : Not applicable |
| Packing group | : Not applicable |
| Labels | : Not applicable |
| EmS Code | : Not applicable |
| Marine pollutant | : Not applicable |

SAFETY DATA SHEET

according to GB/T 16483 and GB/T 17519



Starblast™ Ultra Staurolite Sand Blasting Abrasives

| | | | |
|---------|----------------|---------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 2023/04/21 |
| 9.0 | 2023/10/19 | 1331992-00049 | Date of first issue: 2017/02/27 |

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

GB 6944/12268

| | | |
|----------------------|---|----------------|
| UN number | : | Not applicable |
| Proper shipping name | : | Not applicable |
| Class | : | Not applicable |
| Subsidiary risk | : | Not applicable |
| Packing group | : | Not applicable |
| Labels | : | Not applicable |

Special precautions for user

Not applicable

15. REGULATORY INFORMATION

National regulatory information

Law on the Prevention and Control of Occupational Diseases

Yangtze River Protection Law

This product does not contain any dangerous chemicals prohibited for inland river transport.

16. OTHER INFORMATION

Revision Date : 2023/10/19

Other information : Starblast™ and any associated logos are trademarks or copyrights of The Chemours Company FC, LLC.
Chemours™ and the Chemours Logo are trademarks of The Chemours Company.
Before use read Chemours safety information.
For further information contact the local Chemours office or nominated distributors.
Do not use or resell Chemours™ materials in medical applications involving implantation in the human body or contact with internal body fluids or tissues unless agreed to by Seller in a written agreement covering such use. For further information, please contact your Chemours representative.
The stated hazards of this material are based on non-inhalable particles that are the bulk fraction of the delivered product. However, if during handling or use the particles are broken down to the inhalable or respirable size range, the dusts may be harmful to the respiratory system. Respirable quartz is an IARC Category 1 carcinogen and applicable exposure limits should be referenced.
This product contains Naturally Occurring Radioactive Materials (NORMs) at levels below U.S. Nuclear Regulatory Com-

SAFETY DATA SHEET

according to GB/T 16483 and GB/T 17519



Starblast™ Ultra Staurolite Sand Blasting Abrasives

| | | | |
|---------|----------------|---------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 2023/04/21 |
| 9.0 | 2023/10/19 | 1331992-00049 | Date of first issue: 2017/02/27 |

mission licensing requirements at 10 CFR 40. Many local jurisdictions are developing new regulations for the disposal of waste containing Naturally Occurring Radioactive Materials (NORM) or Technologically Enhanced Naturally Occurring Radioactive Materials (TENORM) above background levels. Consult and comply with current regulations.

For a total dust with aerodynamic diameter of 1 μm , the calculated reference dust level is 6.9 mg/m^3 . For a total dust with aerodynamic diameter of 5 μm , the calculated reference dust level is 10.8 mg/m^3 . For a total dust with aerodynamic diameter of 10 μm , the calculated reference dust level is 15.9 mg/m^3 .

Further information

Sources of key data used to compile the Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

Date format : yyyy/mm/dd

Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
CN OEL : Occupational exposure limits for hazardous agents in the workplace - Chemical hazardous agents.

ACGIH / TWA : 8-hour, time-weighted average
CN OEL / PC-TWA : Permissible concentration - time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect

SAFETY DATA SHEET

according to GB/T 16483 and GB/T 17519



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| | | | |
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| Version | Revision Date: | SDS Number: | Date of last issue: 2023/04/21 |
| 9.0 | 2023/10/19 | 1331992-00049 | Date of first issue: 2017/02/27 |

Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

CN / EN