SAFETY DATA SHEET

Starblast™ Ultra Staurolite Sand Blasting Abrasives

Version	Revision Date:	SDS Number:	Date of last issue: 05/20/2017
2.0	10/11/2017	1575787-00003	Date of first issue: 04/27/2017

SECTION 1. IDENTIFICATION

Product name : Starblast™ Ultra Staurolite Sand Blasting Abrasives

SDS-Identcode : 130000030941

Manufacturer or supplier's details

Company name of supplier : The Chemours Company TT, LLC.

Address : 1007 Market Street
Wilmington, DE 19899 United States of America (USA)

Telephone : 1-844-773-CHEM (outside the U.S. 1-302-773-1000)

Emergency telephone : Medical emergency: 1-866-595-1473 (outside the U.S. 1-302-773-2000) ; Transport emergency: +1-800-424-9300 (outside the U.S. +1-703-527-3887)

Recommended use of the chemical and restrictions on use

Recommended use : Abrasive blasting
Sand blasting

Restrictions on use : For industrial use only.
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.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200

Carcinogenicity (Inhalation) : Category 1A

Specific target organ systemic toxicity - repeated exposure : Category 1 (Lungs)

GHS label elements

Hazard pictograms :

Signal Word : Danger

Hazard Statements : H350i May cause cancer by inhalation.

H372 Causes damage to organs (Lungs) through prolonged or repeated exposure.

Precautionary Statements :

Prevention:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

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

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous ingredients

Chemical name	CAS-No.	Concentration (% w/w)
Rutile (TiO2)	1317-80-2	Trade secret (>= 1 - < 5)
Quartz	14808-60-7	Trade secret (>= 1 - < 5)
Zircon	14940-68-2	Trade secret (>= 1 - < 5)
Kyanite	1302-76-7	Trade secret (>= 1 - < 5)
Sillimanite	12141-45-6	Trade secret (>= 1 - < 5)

SECTION 4. FIRST AID MEASURES

General advice : In the case of accident or if you feel unwell, seek medical advice immediately.
When symptoms persist or in all cases of doubt seek medical advice.

If inhaled : If inhaled, remove to fresh air.
Get medical attention.

In case of skin contact : In case of contact, immediately flush skin with soap and plenty of water.

		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 May cause cancer by inhalation. Causes damage to organs through prolonged or repeated exposure.
Protection of first-aiders	:	First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists.
Notes to physician	:	Treat symptomatically and supportively.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Not applicable Will not burn
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	:	Silicon oxides Metal oxides
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 fire-fighters	:	In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment. Follow safe handling advice and personal protective equipment recommendations.
Environmental precautions	:	Discharge into the environment must be avoided. 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.

SECTION 7. HANDLING AND STORAGE

Technical measures : See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

Local/Total ventilation : Use with local exhaust ventilation.

Advice on safe handling : Do not get on skin or clothing.
Do not swallow.
Avoid contact with eyes.
Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment
Keep container tightly closed.
Take care to prevent spills, waste and minimize release to the environment.

Conditions for safe storage : Keep in properly labeled containers.
Store locked up.
Keep tightly closed.
Store in accordance with the particular national regulations.

Materials to avoid : Do not store with the following product types:
Strong oxidizing agents
Organic peroxides
Explosives
Gases

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Ingredients	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Rutile (TiO2)	1317-80-2	TWA	10 mg/m³ (Titanium dioxide)	ACGIH
Quartz	14808-60-7	TWA (respirable)	10 mg/m3 / %SiO2+2	OSHA Z-3

		TWA (respirable)	250 mppcf / %SiO2+5	OSHA Z-3
		TWA (Respirable fraction)	0.025 mg/m³ (Silica)	ACGIH
		TWA (Respirable dust)	0.05 mg/m³ (Silica)	NIOSH REL
		TWA (Respirable dust)	0.05 mg/m³	OSHA Z-1
Zircon	14940-68-2	TWA	5 mg/m³ (Zirconium)	OSHA Z-1
		TWA	5 mg/m³ (Zirconium)	ACGIH
		STEL	10 mg/m³ (Zirconium)	ACGIH
		TWA	5 mg/m³ (Zirconium)	NIOSH REL
		ST	10 mg/m³ (Zirconium)	NIOSH REL
Kyanite	1302-76-7	TWA (Respirable fraction)	1 mg/m³ (Aluminum)	ACGIH
Sillimanite	12141-45-6	TWA (Respirable fraction)	1 mg/m³ (Aluminum)	ACGIH

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.
Use with local exhaust ventilation.
Dust formation may be relevant in the processing of this product. In addition to substance-specific OELs, general limitations of concentrations of particulates in the air at workplaces have to be considered in workplace risk assessment. Relevant limits include: OSHA PEL for Particulates Not Otherwise Regulated of 15 mg/m3 - total dust, 5 mg/m3 - respirable fraction; and ACGIH TWA for Particles (insoluble or poorly soluble) Not Otherwise Specified of 3 mg/m3 - respirable particles, 10 mg/m3 - inhalable particles.

Personal protective equipment

Respiratory protection : General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled

release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

Hand protection

Material	:	Chemical-resistant gloves
Remarks	:	Choose gloves to protect hands against chemicals depending on the concentration specific to place of work. Breakthrough time is not determined for the product. Change gloves often! 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.
Eye protection	:	Wear the following personal protective equipment: Safety glasses
Skin and body protection	:	Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential. Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc).
Hygiene measures	:	Ensure that eye flushing systems and safety showers are located close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	solid
Color	:	red brown
Odor	:	odorless
Odor Threshold	:	No data available
pH	:	No data available
Melting point/freezing point	:	1,370 °C
Initial boiling point and boiling range	:	No data available
Flash point	:	does not flash
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
Vapor pressure	:	Not applicable
Relative vapor density	:	Not applicable
Relative density	:	No data available
Solubility(ies)		
Water solubility	:	insoluble
Partition coefficient: n-octanol/water	:	Not applicable
Autoignition 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

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Not classified as a reactivity hazard.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Can react with strong oxidizing agents.
Conditions to avoid	:	None known.
Incompatible materials	:	Oxidizing agents
Hazardous decomposition products	:	No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

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

Ingredients:

Rutile (TiO2):

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

Acute inhalation toxicity : LC50 (Rat): > 6.82 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity

Quartz:

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

Zircon:

Acute oral toxicity	:	LD50 (Rat): > 5,000 mg/kg Remarks: Based on data from similar materials
Acute inhalation toxicity	:	LC50 (Rat): > 4.3 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 436 Assessment: The substance or mixture has no acute inhalation toxicity Remarks: Based on data from similar materials

Kyanite:

Acute oral toxicity	:	LD50 (Rat): > 2,000 mg/kg Method: OECD Test Guideline 423 Remarks: Based on data from similar materials
Acute dermal toxicity	:	LD50 (Rabbit): > 5,000 mg/kg Remarks: Based on data from similar materials

Sillimanite:

Acute oral toxicity	:	LD50 (Rat): > 2,000 mg/kg Method: OECD Test Guideline 423 Remarks: Based on data from similar materials
Acute dermal toxicity	:	LD50 (Rabbit): > 5,000 mg/kg Remarks: Based on data from similar materials

Skin corrosion/irritation

Not classified based on available information.

Ingredients:

Rutile (TiO2):

Species: Rabbit
Result: No skin irritation

Quartz:

Species: Rabbit
Method: OECD Test Guideline 404
Result: No skin irritation
Remarks: Based on data from similar materials

Zircon:

Species: Rabbit
Method: OECD Test Guideline 404

Result: No skin irritation
Remarks: Based on data from similar materials

Kyanite:

Species: Rabbit
Method: OECD Test Guideline 404
Result: No skin irritation
Remarks: Based on data from similar materials

Sillimanite:

Species: Rabbit
Method: OECD Test Guideline 404
Result: No skin irritation
Remarks: Based on data from similar materials

Serious eye damage/eye irritation

Not classified based on available information.

Ingredients:

Rutile (TiO2):

Species: Rabbit
Result: No eye irritation

Quartz:

Species: Rabbit
Result: No eye irritation
Method: OECD Test Guideline 405
Remarks: Based on data from similar materials

Zircon:

Species: Rabbit
Result: No eye irritation
Remarks: Based on data from similar materials

Kyanite:

Species: Rabbit
Result: No eye irritation
Remarks: Based on data from similar materials

Sillimanite:

Species: Rabbit
Result: No eye irritation
Remarks: Based on data from similar materials

Respiratory or skin sensitization

Skin sensitization

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

Ingredients:

Rutile (TiO2):

Test Type: Local lymph node assay (LLNA)
Species: Mouse
Result: negative

Test Type: Buehler Test
Species: Guinea pig
Result: negative

Zircon:

Test Type: Maximization Test
Routes of exposure: Skin contact
Species: Guinea pig
Result: negative
Remarks: Based on data from similar materials

Kyanite:

Test Type: Local lymph node assay (LLNA)
Routes of exposure: Skin contact
Species: Mouse
Method: OECD Test Guideline 429
Result: negative
Remarks: Based on data from similar materials

Sillimanite:

Test Type: Local lymph node assay (LLNA)
Routes of exposure: Skin contact
Species: Mouse
Method: OECD Test Guideline 429
Result: negative
Remarks: Based on data from similar materials

Germ cell mutagenicity

Not classified based on available information.

Ingredients:

Rutile (TiO2):

Germ cell mutagenicity - Assessment	:	Weight of evidence does not support classification as a germ cell mutagen.

Zircon:

Genotoxicity in vitro	:	Test Type: Chromosome aberration test in vitro Method: OECD Test Guideline 473 Result: negative Remarks: Based on data from similar materials
Genotoxicity in vivo	:	Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis) Species: Rat Application Route: inhalation (dust/mist/fume) Result: negative Remarks: Based on data from similar materials

Kyanite:

Genotoxicity in vitro	:	Test Type: In vitro mammalian cell gene mutation test Method: OECD Test Guideline 476 Result: negative Remarks: Based on data from similar materials
Genotoxicity in vivo	:	Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis) Species: Rat Application Route: Ingestion Result: negative Remarks: Based on data from similar materials

Sillimanite:

Genotoxicity in vitro	:	Test Type: In vitro mammalian cell gene mutation test Method: OECD Test Guideline 476 Result: negative Remarks: Based on data from similar materials
Genotoxicity in vivo	:	Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis) Species: Rat Application Route: Ingestion Result: negative Remarks: Based on data from similar materials

Carcinogenicity

May cause cancer by inhalation.

Ingredients:

Rutile (TiO2):

Carcinogenicity - Assessment	:	Weight of evidence does not support classification as a carcinogen

Quartz:

Species: Humans
Application Route: inhalation (dust/mist/fume)

Result: positive
Remarks: These substance(s) are inextricably bound in the product and therefore do not contribute to a dust inhalation hazard.

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

Zircon:

Species: Rat
Application Route: Ingestion
Exposure time: 103 weeks
Result: negative
Remarks: Based on data from similar materials

Kyanite:

Species: Rat
Application Route: Ingestion
Exposure time: 2 Years
Result: negative
Remarks: Based on data from similar materials

Sillimanite:

Species: Rat
Application Route: Ingestion
Exposure time: 2 Years
Result: negative
Remarks: Based on data from similar materials

IARC	Group 1: Carcinogenic to humans	
	Quartz	14808-60-7
	Group 2B: Possibly carcinogenic to humans	
	Rutile (TiO2)	1317-80-2
OSHA	No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.	
NTP	Known to be human carcinogen	
	Quartz	14808-60-7

Reproductive toxicity

Not classified based on available information.

Ingredients:

Zircon:

Effects on fetal development : Test Type: Embryo-fetal development
Species: Rat

Application Route: Ingestion
Result: negative
Remarks: Based on data from similar materials

Kyanite:

Effects on fetal development : Test Type: Embryo-fetal development
Species: Rabbit
Application Route: Ingestion
Result: negative
Remarks: Based on data from similar materials

STOT-single exposure

Not classified based on available information.

STOT-repeated exposure

Causes damage to organs (Lungs) through prolonged or repeated exposure.

Ingredients:

Rutile (TiO2):

Assessment: No significant health effects observed in animals at concentrations of 100 mg/kg bw or less.

Quartz:

Routes of exposure: 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.

Zircon:

Routes of exposure: inhalation (dust/mist/fume)
Assessment: No significant health effects observed in animals at concentrations of 0.2 mg/l/6h/d or less.

Repeated dose toxicity

Ingredients:

Rutile (TiO2):

Species: Rat
NOAEL: 24,000 mg/kg
LOAEL: > 24,000 mg/kg
Application Route: Ingestion
Exposure time: 28 d
Remarks: No significant adverse effects were reported
Based on data from similar materials

Quartz:

Species: Rat
LOAEL: 0.002 mg/l

Application Route: inhalation (dust/mist/fume)
Exposure time: 13 Weeks

Zircon:

Species: Rat
NOAEL: > 100.8 mg/m³
Application Route: inhalation (dust/mist/fume)
Exposure time: 30 Days
Remarks: Based on data from similar materials

Kyanite:

Species: Rat
NOAEL: 1,760 - 3,000 mg/kg
Application Route: Ingestion
Exposure time: 2 y
Remarks: Based on data from similar materials

Sillimanite:

Species: Rat
NOAEL: 1,760 - 3,000 mg/kg
Application Route: Ingestion
Exposure time: 2 y
Remarks: Based on data from similar materials

Aspiration toxicity

Not classified based on available information.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Ingredients:

Rutile (TiO2):

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): > 1,000 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 1,000 mg/l Exposure time: 48 h
Toxicity to algae	:	EC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l Exposure time: 72 h Remarks: Based on data from similar materials NOEC (algae): 5,600 mg/l Exposure time: 72 h

Quartz:

Toxicity to fish	:	LL50 (Danio rerio (zebra fish)): > 10,000 mg/l

Exposure time: 96 h
Method: OECD Test Guideline 203
Remarks: Based on data from similar materials

Zircon:

Toxicity to fish	:	LC50 (Danio rerio (zebra fish)): > 100 mg/l Exposure time: 96 h Method: OECD Test Guideline 203 Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 48 h Remarks: Based on data from similar materials
Toxicity to algae	:	NOEC (Chlorella vulgaris (Fresh water algae)): > 200 mg/l Exposure time: 15 d Remarks: Based on data from similar materials

Kyanite:

Ecotoxicology Assessment

Chronic aquatic toxicity	:	No toxicity at the limit of solubility.

Sillimanite:

Ecotoxicology Assessment

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

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	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.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG
Not regulated as a dangerous good

IATA-DGR
Not regulated as a dangerous good

IMDG-Code
Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable for product as supplied.

Domestic regulation

49 CFR
Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity
This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity
This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity
This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Carcinogenicity
Specific target organ toxicity (single or repeated exposure)

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

US State Regulations

Pennsylvania Right To Know

Staurolite	12182-56-8
Rutile (TiO2)	1317-80-2
Zircon	14940-68-2
Quartz	14808-60-7
Ilmenite	12168-52-4

California Prop. 65

WARNING: This product can expose you to chemicals including Quartz, which is/are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

California List of Hazardous Substances

Zircon	14940-68-2

California Permissible Exposure Limits for Chemical Contaminants

Zircon	14940-68-2
Quartz	14808-60-7

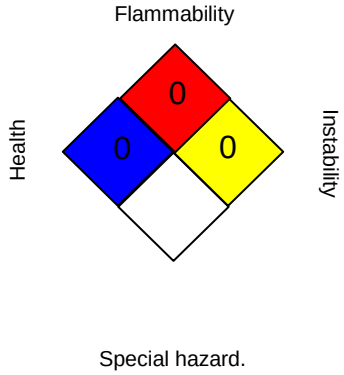
California Regulated Carcinogens

Quartz	14808-60-7

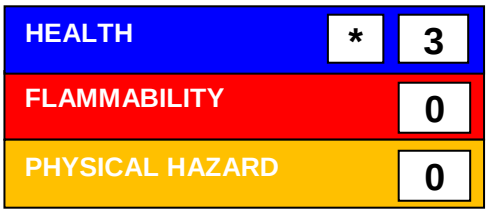
SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS® IV:



HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Before use read Chemours safety information.
For further information contact the local Chemours office or nominated distributors.
All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical Substances.
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. Inhalable quartz is an IARC Category 1 carcinogen and applicable exposure limits should be referenced.
Staurolite Products contain trace quantities of naturally occurring radioactive uranium and thorium (less than or equal to 25 ppm uranium plus 175 ppm thorium = 200 ppm total U + Th or 0.02 % w/w, equivalent to 28 pCi/g or less), and radium (less than or equal to 28 pCi/g). Naturally Occurring Radioactive Material, namely uranium, thorium, and their decay products, including radium, is commonly referred to as "NORM".
For a total dust with aerodynamic diameter of 1 um, the calculated reference dust level is 6.9 mg/m3. For a total dust with aerodynamic diameter of 5 um, the calculated reference dust level is 10.8 mg/m3. For a total dust with aerodynamic diameter of 10 um, the calculated reference dust level is 15.9 mg/m3.

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL	:	USA. NIOSH Recommended Exposure Limits
OSHA Z-1	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
OSHA Z-3	:	USA. Occupational Exposure Limits (OSHA) - Table Z-3 Mineral Dusts
ACGIH / TWA	:	8-hour, time-weighted average
ACGIH / STEL	:	Short-term exposure limit
NIOSH REL / TWA	:	Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
NIOSH REL / ST	:	STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
OSHA Z-1 / TWA	:	8-hour time weighted average
OSHA Z-3 / TWA	:	8-hour time weighted average

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; 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; HMIS - Hazardous Materials Identification System; 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; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; 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; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance 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

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

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

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.

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