SAFETY DATA SHEET

1. Identification

Product identifier Flosan
Recommended use For Industrial Use Only
Recommended restrictions Users should be informed of the potential presence of respirable dust and respirable crystalline silica and their potential hazards. Appropriate training in the proper use and handling of this material should be provided as required under applicable regulations.

Manufacturer/Supplier information

Company name: FRC Global
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Suite 1200 #3008
Wilmington, DE 19801
Product Support/Technical Services
Phone: (514) 931-5711
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Contact E-Mail: LadleDr@FRCglobal.com

2. Hazard(s) identification

Physical hazards Not classified.
Heath hazards Carcinogenicity Category 1A
Environmental hazards Not classified.
OSHA defined hazards Not classified.
Label elements

Signal word Danger.
Hazard Statement May cause cancer.
Precautionary statement
Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection.
Response If concerned: Get medical advice/attention.
Storage Store locked up.

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

Hazard(s) not otherwise Classified (HNOC)

None Known.

Supplemental information	Users should be informed of the potential presence of respirable dust and respirable crystalline silica and their potential hazards. Overexposure to the respirable dust of crystalline silica (quartz or cristobalite, less than or equal to 5 microns in size) may lead to silicosis in humans, a progressive and irreversible lung disease. Appropriate training in the proper use and handling of this material should be provided as required under applicable regulations.

3. Composition/information on ingredients

Chemical Name	Common Name/Synonyms	CAS Number	%
Quartz (SiO_2)		14808-60-7	*
Aluminum Oxide (Non-Fibrous)		1344-28-1	*
Carbon		1333-86-4	*
Chrome Ore		1308-31-2	*
Iron Oxide		1309-37-1	*
Magnesium Oxide		1309-48-4	*
Other components below reportable levels			*

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Wash off with soap and water. Get medical attention if irritation develops and persists.
Eye contact	Do not rub your eyes. Flush your eyes immediately with water for at least 15 minutes. Get medical attention if irritation develops and persists.
Ingestion	Unlikely route of exposure. If ingested in sufficient quantity and the victim is conscious, give 1-2 glasses of water or milk. Never give anything by mouth to an unconscious person. Leave the decision to induce vomiting to qualified medical personnel, since particles may be aspirated into the lungs. Seek immediate medical attention.

Most important symptoms/effects, acute and delayed

Dust may irritate the respiratory tract, skin, and eyes. Coughing.

Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Keep the victim under observation. Symptoms may be delayed.

General information If concerned: Get medical advice. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media

Not available.

Specific hazards arising from the chemical

Not available.

Special protective equipment and precautions for firefighters

Wet material should be kept out of eyes and off skin in any fire, and wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. The material does not give off toxic fumes in a fire unless it is molten.

6. Accidental release measures

Personal precautions, protective equipment, and emergency procedures

Keep unnecessary personnel away. Keep people away from, and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Use a NIOSH/MSHA-approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Stop the flow of material if this is without risk. Collect dust using a vacuum cleaner equipped with a HEPA filter.
Large Spills: Wet down with water and dike for later disposal. Shovel the material into a waste container. Avoid the generation of dust during clean-up. Following product recovery, flush the area with water.
Small Spills: Sweep up or vacuum up spillage and collect it in a suitable container for disposal. For waste disposal, see section 13 of the SDS.

Environmental precautions Avoid discharge into drains, water courses, or onto the ground.

7. Handling and storage

Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Minimize dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed. Do not breathe dust. Do not breathe dust. Avoid prolonged exposure. Should be handled in closed systems, if possible. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in the original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	*Type*	*Value*	*Form*
Aluminum Oxide (Non-Fibrous) (CAS 1344-28-1)	PEL	5 mg/m3	Respirable fraction.
Carbon (CAS 1333-86-4)	PEL	15mg/m3 3.5mg/m3	Total dust.
Chrome Ore (as Cr) (CAS 1308-31-2)	PEL	1 mg/m3	

US OSHA Table Z-3 (29 CFR 1910.1000)

Components	*Type*	*Value*	*Form*
Quartz (SiO2) (CAS 14808-60-7)	TWA	0.3 mg/m3 0.1 mg/m3 2.4 mppcf	Total dust. Respirable. Respirable.

US ACGIH Threshold Limit Values

Components	*Type*	*Value*	*Form*
Aluminum Oxide (Non-Fibrous) (CAS 1344-28-1)	TWA	1 mg/m3	Respirable fraction.
Carbon (CAS 1333-86-4)	TWA	3 mg/m3	Inhalable fraction.
Quartz (SiO2) (CAS 14808-60-7)	TWA	0.025 mg/m3	Respirable fraction.
Chrome Ore (as Cr) (CAS 1308-31-2)	TWA	0.5 mg/m3	

US NIOSH: Pocket Guide to Chemical Hazards

Components	*Type*	*Value*	*Form*
Carbon (CAS 1333-86-4)	TWA	0.1 mg/m3	
Quartz (SiO2) (CAS 14808-60-7)	TWA	0.05 mg/m3	Respirable dust.

Chrome Ore (as Cr) (CAS 1308-31-2)	TWA	0.5 mg/m3

Biological limit values No biological exposure limits were noted for the ingredient(s).

Exposure guidelines Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled.

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. If engineering measures are not sufficient to maintain concentrations of dust particulates below the Occupational Exposure Limit (OEL), suitable respiratory protection must be worn. If material is ground, cut, or used in any operation that may generate dust, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits.

Individual protection measures, such as personal protective equipment

Eye/face protection Chemical respirator with organic vapor cartridge, full facepiece, dust and mist filter.

Skin protection

Hand protection Wear appropriate chemical-resistant gloves.

Other Use of an impervious apron is recommended.

Respiratory protection Use a NIOSH/MSHA-approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General Hygiene Considerations

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.

9. Physical and chemical properties

Appearance

Physical state	Solid.
Form	Solid Powder.
Color	Not available.
Odor	Not available.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage, and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction is known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Powerful oxidizers. Chlorine. Incompatibility is based strictly upon potential theoretical reactions between chemicals and may not be specific to industrial application exposure. Contact your sales representative for clarification.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Dust may irritate the respiratory system. Prolonged inhalation may be harmful.
Skin contact	Dust or powder may irritate the skin.
Eye contact	Dust may irritate the eyes.
Ingestion	Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical, and toxicological characteristics:

Dust may irritate the respiratory tract, skin, and eyes. Coughing.

Information on toxicological effects

Acute toxicity	Not available.
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Direct contact with the eyes may cause temporary irritation.
Respiratory or skin sensitization	
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data is available to indicate product, or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	In 1997, IARC (the International Agency for Research on Cancer) concluded that crystalline silica inhaled from occupational sources can cause lung cancer in humans. However, in making the overall evaluation, IARC noted that "carcinogenicity was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or external factors affecting its biological activity or distribution of its polymorphs." (IARC Monographs on the evaluation of the carcinogenic risks of chemicals to humans, Silica, silicate dust, and organic fibres, 1997, Vol. 68, IARC, Lyon, France.) In June 2003, SCOEL (the EU Scientific Committee on Occupational Exposure Limits) concluded that the main effect in humans of the inhalation of respirable crystalline silica dust is silicosis. "There is sufficient information to conclude that the relative risk of lung cancer is increased in persons with silicosis (and, apparently, not in employees without silicosis exposed to silica dust in quarries and in the ceramic industry). Therefore, preventing the onset of silicosis will also reduce the cancer risk..." (SCOEL SUM Doc 94-final, June 2003) According to the current state of the art, worker protection against silicosis can be consistently assured by respecting the existing regulatory occupational exposure limits. May cause cancer. Occupational exposure to

respirable dust and respirable crystalline silica should be monitored and controlled.

IARC Monographs. Overall Evaluation of Carcinogenicity

Carbon (CAS 1333-86-4)	2B Possibly carcinogenic to humans.
Quartz (SiO2) (CAS 14808-60-7)	1 Carcinogenic to humans.

US National Toxicology Program (NTP) Report on Carcinogens

Quartz (SiO2) (CAS 14808-60-7)	Known To Be Human Carcinogen.

US OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Developmental effects

Quartz (SiO2)	0

Developmental effects - EU category

Quartz (SiO2)	0

Embryotoxicity

Quartz (SiO2)	0

Reproductively

Quartz (SiO2)	0

Specific target organ toxicity - single exposure

Not classified.

Specific target organ toxicity - repeated exposure

Not classified.

Aspiration hazard Not an aspiration hazard.

Chronic effects Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Persistence and degradability No data is available on the degradability of this product.

Bio-accumulative potential No data available.

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions This product, in its present state, when discarded or disposed of, is not hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste.

Hazardous waste code Since this product is used in several industries, no Waste Code can be provided by the supplier. The Waste Code should be determined in arrangement with your waste disposal partner or the responsible authority.

Waste from residues / unused products
Not available.

Contaminated packaging Not available.

14. Transport information

DOT
Not regulated as dangerous goods.

IATA
Not regulated as dangerous goods.

IMDG
Not regulated as dangerous goods.

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

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
One or more components are not listed on TSCA.
All chemical substances in this product are listed on the TSCA chemical substance inventory where required.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)
Not listed.

SARA 304 Emergency release notification
Not regulated.

US OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - No
Delayed Hazard - Yes
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance
Not listed.

SARA 311/312 Hazardous Chemical
No.

SARA 313 (TRI reporting)

Chemical Name	*CAS number*	*% by wt.*
Aluminum Oxide (Non-Fibrous)	1344-28-1	*

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not Regulated

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
Not regulated.

Safe Drinking Water Act (SDWA)
Not regulated.

US state regulations

US California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)
Not listed.

US Massachusetts RTK - Substance List
Aluminum Oxide (Non-Fibrous) (CAS 1344-28-1)
Carbon (CAS 1333-86-4)
Quartz (SiO2) (CAS 14808-60-7)

US New Jersey Worker and Community Right-to-Know Act
Aluminum Oxide (Non-Fibrous) (CAS 1344-28-1)
Carbon (CAS 1333-86-4)
Quartz (SiO2) (CAS 14808-60-7)

US Pennsylvania Worker and Community Right-to-Know Law
Aluminum Oxide (Non-Fibrous) (CAS 1344-28-1)
Carbon (CAS 1333-86-4)
Quartz (SiO2) (CAS 14808-60-7)

US Rhode Island RTK
Aluminum Oxide (Non-Fibrous) (CAS 1344-28-1)

US California Proposition 65
This product contains a chemical known to the State of California to cause cancer.

US California Proposition 65 - CRT: Listed date/Carcinogenic substance

Carbon (CAS 1333-86-4)	Listed: February 21, 2003
Quartz (SiO2) (CAS 14808-60-7)	Listed: October 1, 1988

International Inventories

Country(s) or region	*Inventory name*	*On inventory (yes/no) **
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s). A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

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

This information is supplied to be informative and to alert the user of the material. The ultimate compliance with federal, state, and/or local regulations concerning the use of this material, or compliance with respect to product liability, rests solely upon the purchaser thereof.

Prepared by: FRC Global
Date: October 2020

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End of Safety Data Sheet