

Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Name: AL FS-XXX*, AL FS-150, AL FS-200, AL FS-300, AL FS-400 Silicon Dioxide powder, SiO₂

Other Names: silica, fumed silica, amorphous silica, hydrophilic fumed silica, pyrogenic silica

*The XXX represents different numbers (nominal BET surface area) in a series of untreated fumed silicas with slightly different physical properties, particularly surface area and primary particle size, made by the same flame hydrolysis process, and all the same safety data applies across the range.

Supplier: **AL₂Chem LLC**
649 Route 206 Suite 9-132
Hillsborough, NJ 08844

For Emergency Call: CHEMTREC® US 800-424-9300 International +1-703-527-3887

2. HAZARDS IDENTIFICATION

Indication of danger: Not a hazardous substance or preparation according to the Global Harmonized System (GHS)

Label Elements:

Pictogram: None
Signal Word: None
Hazard Statement: None
Precautionary Statements None

EMERGENCY OVERVIEW - CAUTION:

White powder. Odorless. Dust may be irritating to eyes and respiratory tract.
Repeated exposure may cause skin dryness or cracking. Take precautionary measures against static discharges.
All metal parts of the mixing and processing equipment must be earthed/grounded. Ensure all equipment is electrically earthed/grounded before beginning transfer operations.

Principle Routes of Exposure: Inhalation, Skin contact, Eye contact

POTENTIAL HEALTH EFFECTS

Eye Contact: May cause mechanical irritation.
Skin Contact: Repeated exposure may cause skin dryness or cracking
Inhalation: Dust may be irritating to respiratory tract. Provide appropriate exhaust ventilation at machinery and at places where dust can be generated.
See also Section 8.
Ingestion: According to experience not expected.

AL FS-XXX* Fumed Silica, Untreated

SDS

Carcinogenic Effects:	Does not contain any substances greater than 0.1% listed by IARC (International Agency for Research on Cancer), NTP (National Toxicology Program), OSHA (Occupational Safety and Health Administration), ACGIH (American Conference for Governmental Industrial Hygienists) or EU (European Union). See also Section 11.
Target Organ Effects:	Lungs
Medical Conditions Aggravated by Exposure:	Asthma, Respiratory disorder
Potential Environmental Effects:	No special environmental precautions required.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: Silicon Dioxide, Synthetic Amorphous Silica, Pyrogenic (Fumed) Amorphous Silica

Chemical Name	CAS Number	EINECS /ELINCS Number	Weight %	EU Classification
Synthetic Amorphous, Pyrogenic Silica	112945-52-5	*	> 99.9	None

* See Section 15.

4. FIRST AID MEASURES

Skin Contact: Wash thoroughly with soap and water. Seek medical attention if redness, swelling, itching, or burning occurs.

Eye Contact: Flush eyes immediately with large amounts of water for 15 minutes. Seek medical attention if redness, swelling, itching, burning or visual disturbances occur.

Inhalation: If cough, shortness of breath or other breathing problems occur, move to fresh air. Seek medical attention if symptoms persist. If necessary, restore normal breathing through standard first aid measures.

Ingestion: Do not induce vomiting. If conscious, give several glasses of water. Never give anything by mouth to an unconscious person.

Notes to Physician: Treat symptomatically.

5. FIRE AND IGNITION INFORMATION

Flash Point:	Not applicable
Explosion Limits in Air - Upper (g/m³):	Not applicable
Explosion Limits in Air - Lower (g/m³):	Not applicable
OSHA Flammability Classification:	Not applicable
Autoignition Temperature:	Not applicable
Method:	Not applicable

Extinguishing Media: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Special Protective Equipment for Firefighters: Wear suitable protective equipment. In the event of fire, wear self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Avoid dust formation. Ensure adequate ventilation. Use personal protective equipment. See also Section 8.

Methods for Cleaning Up: Clean up promptly by vacuum. Use a suitable vacuum cleaner. Do not create a dust cloud by using a brush or compressed air. Pick up and transfer to properly labeled containers. See Section 13.

Environmental Precautions: No special environmental precautions required. Local authorities should be advised if significant spillages cannot be contained.

7. HANDLING AND STORAGE

Handling: Avoid contact with skin and eyes. Avoid dust formation. Do not breathe dust. Provide appropriate exhaust ventilation at machinery and at places where dust can be generated. Do not create a dust cloud by using a brush or compressed air. Take precautionary measures against static discharge. All metal parts of the mixing and processing equipment must be earthed/grounded. Ensure all equipment is electrically earthed/grounded before beginning transfer operations.

Storage: Keep containers tightly closed in a dry, cool and well-ventilated place. Do not store together with volatile chemicals as they may be adsorbed onto product. Keep at ambient temperatures.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMITS

Amorphous Silica, The regulatory exposure limits are found under the general silica, CAS RN 7631-86-9:

Australia:	2 mg/m ³ , TWA, Respirable
Austria MAK:	4 mg/m ³ , TWA, Inhalable fraction
Finland:	5 mg/m ³
Germany TRGS 900:	4 mg/m ³ , TWA, Inhalable fraction (a1)
India:	10 mg/m ³ , TWA
Ireland:	2.4 mg/m ³ , TWA, Respirable dust
Norway:	1.5 mg/m ³ , TWA, Respirable dust
Switzerland:	4 mg/m ³ , TWA
UK WEL:	6 mg/m ³ , TWA, Total inhalable fraction 2.4 mg/m ³ , TWA, Respirable fraction
US OSHA PEL:	6 mg/m ³

Dust, or Particulates Not Otherwise Specified:

US ACGIH - TLV:	10 mg/m ³ , TWA, Inhalable 3 mg/m ³ , TWA, Respirable
Belgium:	10 mg/m ³ , TWA, Inhalable 3 mg/m ³ , TWA, Respirable
China:	8 mg/m ³ , TWA 10 mg/m ³ , STEL
France:	10 mg/m ³ , TWA Inhalable dust 5 mg/m ³ , TWA Respirable dust
Italy:	10 mg/m ³ , TWA, Inhalable 3 mg/m ³ , TWA, Respirable
Malaysia:	10 mg/m ³ , TWA, Inhalable 3 mg/m ³ , TWA, Respirable
Spain:	10 mg/m ³ , VLA, Inhalable 3 mg/m ³ , VLA, Respirable

MAK: Maximale Arbeitsplatzkonzentration (Maximum Workplace Concentration)

OEL: Occupational Exposure Limit

PEL: Permissible Exposure Limit

STEL: Short Term Exposure Limit

TLV: Threshold Limit Value

TRGS: Technische Regeln für Gefahrstoffe (Technical Rule for Hazardous Materials)

TWA: Time Weighted Average

US ACGIH: United States American Conference of Governmental Industrial Hygienists

US OSHA: United States Occupational Safety and Health Administration

VLA: Valore Límite Ambientales (Environmental Limit Value)

WEL: Workplace Exposure Limit

ENGINEERING CONTROLS

Ensure adequate ventilation to maintain exposures below occupational limits.

Provide appropriate exhaust ventilation at machinery and at places where dust can be generated.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: Approved respirator may be necessary if local exhaust ventilation is not adequate.

Hand Protection: Repeated exposure may cause skin dryness or cracking. Use appropriate protective barrier before handling.

Eye Protection: Wear eye/face protection.

Skin and Body Protection: Wear suitable protective clothing.

Other: Handle in accordance with good industrial hygiene and safety practice. Emergency eyewash and safety shower should be located nearby.

9.

PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	White Powder
Odor:	None
pH:	3.6 - 4.5
Vapor Pressure:	Not determined
Boiling Point/Range:	2230°C
Melting Point/Range:	1700°C

AL FS-XXX* Fumed Silica, Untreated

SDS

Water Solubility:	Insoluble
Bulk Density:	30-150 kg/m ³
Specific Gravity:	2.2 g/cm ³ @ 20°C
% Volatile (by Volume):	Not applicable
Evaporation Rate:	Not determined
Viscosity:	Not determined
Partition Coefficient (n-octanol/water):	Not applicable

10. STABILITY AND REACTIVITY

Stability:	Stable
Hazardous Polymerization:	Hazardous polymerization does not occur.
Mechanical Sensitivity (shock):	Not sensitive to mechanical impact.
Conditions to Avoid:	Avoid dust formation.
Hazardous Decomposition and/or Combustion Products:	None.
Static Discharge Effects:	Take precautionary measures against static discharges. Avoid dust formation. All metal parts of the mixing and processing equipment must be earthed/grounded. Ensure all equipment is electrically earthed/grounded before beginning transfer operations. This material is an inorganic dust and will not create nor support conditions that would result in a dust explosion or fire.

11. TOXICOLOGICAL INFORMATION

Information given is based on data obtained from this substance or from similar substances.

ACUTE TOXICITY

Oral LD50:	LD50/oral/rat = > 5000 mg/kg.
Inhalation LC50:	Due to the product's physical characteristics, no suitable testing procedure is available.
Dermal LD50:	LD50/dermal/rabbit = > 2000 mg/kg.
Eye Irritation:	Draize score 1.0/110 @ 24 hr.
Skin Irritation:	0/8 @ 24 hr.

SUBCHRONIC TOXICITY

No significant treatment-related adverse effects were observed in rats administered silica at doses of up to 8% silica in their diet for a duration of 2 weeks to 6 months.

CHRONIC TOXICITY

Carcinogenic Effects: Does not contain any substances greater than 0.1% listed by IARC (International Agency for Research on Cancer), NTP (National Toxicology Program), OSHA (Occupational Safety and Health Administration), ACGIH (American Conference for Governmental Industrial Hygienists) or EU (European Union).

OTHER

Mutagenic Effects:

Not mutagenic in AMES Test, Negative in the unscheduled DNA synthesis assay, Negative in the chromosome aberration test in Chinese hamster ovary (CHO) cells.

Reproductive Toxicity: Did not show teratogenic effects in animal experiments. According to experience not expected.

Sensitizing Effects: According to experience, sensitization is not expected.

Synergistic Materials: None reasonably foreseeable.

12. ECOLOGICAL INFORMATION

Aquatic Toxicity: Fish (Brachydanio rerio) LC50 (96 hours): > 10,000 mg/l; (Method: OECD 203)

ENVIRONMENTAL FATE

Mobility: Not expected to migrate.

Bioaccumulation: Not expected due to physicochemical properties of the substance.

Persistence / Degradability: The methods for determining biodegradability are not applicable to inorganic substances

Distribution to Environmental

Compartments:

Not determined.

13. DISPOSAL CONSIDERATIONS

Disclaimer: Information in this section pertains to the product as shipped in its intended composition as described in Section 3 of this MSDS. Contamination or processing may change waste characteristics and requirements. Regulations may also apply to empty containers, liners or rinsate. State/provincial and local regulations may be different from federal regulations.

RCRA Classification (40 CFR 261): Not a hazardous waste.

Unused and Uncontaminated Product: Product, as supplied, should be disposed of in accordance with the regulations issued by the appropriate federal, state and local authorities. Same consideration should be given to containers and packaging.

14. TRANSPORT INFORMATION

Not classified as dangerous in the meaning of transport regulations.

- US Department of Transportation
- Canadian Transport of Dangerous Goods Regulation
- European Transport of Dangerous Goods Regulation

- GGVS, GGVE, RID, ADR, IMDG Code, ICAO-TI
- United Nations (no UN number)

15.

REGULATORY INFORMATION

Regulatory information is found under the general silica: CAS RN 7631-86-9, EINECS RN 231-545-4.

Hazard Classification

United States - OSHA (29 CFR 1910.1200): Hazardous.

Mexico - NOM-018-STPS-2000: Refer to HMIS Rating in Section 16.

Canada - WHMIS Classification (CPR, SOR/88-66): Not controlled.

Chemical Name WHMIS Ingredient Disclosure List:

Synthetic Amorphous, Pyrogenic

Silica

General Silica, CAS RN 7631-89-9, is Listed

International Inventories

All components of this product are listed on or exempt from the following inventories:

YES - Australian Inventory of Chemical Substances (AICS)

YES - Canadian Domestic Substances List (DSL)

YES - Chinese Inventory

YES - European Inventory of Existing Commercial Chemical Substances (EINECS)

YES - Japanese Existing and New Chemical Substances (ENCS)

YES - Korean Existing Chemicals List (KECL)

YES - New Zealand Hazardous Substances and New Organisms Act (HSNO)

YES - Philippine Inventory of Chemicals and Chemical Substances (PICCS)

YES - United States Toxic Substances Control Act (TSCA) Inventory

U.S. Federal Regulations

TSCA 12(b) Export Notification: This product does not contain any components that are subject to TSCA 12(b) Export Notification.

Clean Air Act Amendments of 1990 (CAA, Section 112, 40 CFR 82): This product does not contain any components listed as a Hazardous Air Pollutant, Flammable Substance, Toxic Substance, or Class 1 or 2 Ozone Depletor.

Clean Water Act (CWA, 40 CFR 116) Priority Pollutants: This product does not contain any listed Priority Pollutants.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, 40 CFR 302): This product does not contain any listed Hazardous Substances.

Superfund Amendments and Reauthorization Act, Title III (SARA):

SARA Section 302 (40 CFR 355) Extremely Hazardous Substances: No components are listed as extremely hazardous chemicals under SARA Section 302.

SARA Sections 311/312 (40 CFR 370) Hazard Category: This product does not meet any of the MSDS Requirement definitions for a hazardous material under SARA Sections 311/312. Reporting may be required if the material is present at any one time in amounts equal to or greater than 10,000 pounds.

SARA Section 313 (40 CFR 372) Toxics Release Inventory: Does not contain any of the substances identified under Section 313 as toxic chemicals in excess of the de minimis concentrations necessary to be subject to the supplier notification requirements.

Food and Drug Administration (FDA):

The use of fumed silica has been cleared by the United States Food and Drug Administration (FDA) for many food applications as both a direct food additive at levels up to 2 percent by weight and as a substance allowed in the manufacture of materials that come in direct contact with food in various producing, manufacturing, packing, preparing, transporting and holding operations. Pertinent sections can be found in Title 21 Code of Federal Regulations, Part 172 Food Additives Permitted for Direct Addition to Food for Human Consumption.

Cosmetic Use: Listed by the Cosmetic, Toiletry and Fragrance Association (CTFA) for use in cosmetics and personal care products.

Pharmaceutical Information: Not recommended.

U.S. State Regulations

California Proposition 65: This product does not contain any components listed on California Proposition 65. This product is not listed on California Proposition 65.

US Coalition of Northeastern Governors (CONEG) Metals List: This product meets the CONEG Source Reduction Council limits for the sum of the levels of lead, cadmium, mercury and hexavalent chromium of less than 100 parts per million by weight.

16. OTHER INFORMATION

Revision Date: 2015-June-01

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall AL₂Chem LLC be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if AL₂Chem LLC has been advised of the possibility of such damages.