

FUMED SILICA (CABOSIL / AEROSIL TYPE)

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SECTION 1: IDENTIFICATION

1.1 GHS Product identifier:

FUMED SILICA (CABOSIL / AEROSIL TYPE)
Synthetic amorphous silica, pyrogenic; Silicon dioxide, amorphous (fumed)
CAS: 112945-52-5

Other means of identification:

Not relevant

1.2 Recommended use of the chemical and restrictions on use:

Relevant uses: Thixotropic/rheology-control additive and reinforcing filler for silicone rubber, adhesives, sealants, coatings, inks, cosmetics and pharmaceutical formulations; anti-caking agent. For industrial user only.
Uses advised against: All uses not specified in this section or in section 7.3.

1.3 Supplier's details:

SURAJ CHEMICALS
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1.4 Emergency phone number:

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SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture:

GHS:
Classification of this product has been carried out in accordance with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS). Based on available data, Fumed Silica is **not classified** as hazardous under GHS criteria.

Not Classified	No hazard class meets GHS classification criteria based on available data
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Synthetic amorphous silica (fumed/pyrogenic silica) is distinct from crystalline silica (e.g. quartz) and is not classified as a respirable crystalline silica (RCS) carcinogen; IARC Group 1 classification for silica applies only to crystalline forms inhaled from occupational sources, not to amorphous silica such as this product. This is the routinely applied industry position for amorphous/fumed/precipitated silica grades.

2.2 GHS label elements, including precautionary statements:

GHS: No signal word required

Hazard statements:

None required under GHS.

Precautionary statements:

P260: Do not breathe dust.
P264: Wash hands thoroughly after handling.
P271: Use only outdoors or in a well-ventilated area.
P280: Wear protective gloves/eye protection/dust mask when handling bulk powder.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P501: Dispose of contents/container in accordance with local regulations.

2.3 Other hazards which do not result in classification:

Very fine, low-bulk-density powder – may generate nuisance dust and present a slip/visibility hazard if released in quantity. Fine powder dispersed in air may present a combustible/nuisance-dust handling consideration during bulk transfer, as with many fine inorganic powders.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances:

Chemical description: Synthetic amorphous silica (silicon dioxide), produced by flame hydrolysis (pyrogenic/fumed process) of a volatile silicon compound.
In accordance with Annex 4.3.3 of the GHS, the product contains:

Identification	Chemical Name / Classification	Concentration
CAS: 112945-52-5	Fumed Silica (amorphous SiO2) – Not classified	≥ 99.8%

To obtain more information on the hazards of the substances, consult sections 11, 12 and 16.

3.2 Mixtures:

Non-applicable

SECTION 4: FIRST AID MEASURES

4.1 Description of necessary first-aid measures:

Low-hazard product; no special first-aid measures normally required beyond management of nuisance-dust exposure.

By inhalation:

Remove the person affected from dusty area, provide fresh air and keep at rest. Seek medical attention if coughing or breathing difficulty persists.

By skin contact:

Brush off excess powder. Wash skin with soap and water. Seek medical attention if irritation persists (may cause mild mechanical/drying irritation on repeated contact).

By eye contact:

Rinse eyes thoroughly with lukewarm water for at least 15 minutes, holding eyelids open to remove particles. Remove contact lenses if present and easy to do. Seek medical advice if irritation persists.

By ingestion/aspiration:

Rinse mouth with water. Not expected to be acutely toxic; seek medical advice if discomfort occurs.

4.2 Most important symptoms/effects, acute and delayed:

May cause mild mechanical irritation to eyes, skin and respiratory tract due to its fine particulate nature; not expected to cause systemic toxicity. See Sections 2 and 11.

4.3 Indication of immediate medical attention and special treatment needed, if necessary:

Not relevant

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Suitable extinguishing media:

Suitable: Use extinguishing media appropriate to the surrounding fire (water fog/spray, foam, dry chemical powder, carbon dioxide). The product itself is non-combustible.
Unsuitable: None known for the product itself.

5.2 Specific hazards arising from the chemical:

Non-combustible inorganic solid. Does not itself burn or support combustion. Fine powder dispersed at high concentration in air could theoretically contribute to dust-cloud ignition risk in the presence of another combustible/ignition source, as a general precaution for very fine powders, though silica itself is not combustible.

5.3 Special protective actions for fire-fighters:

Evacuate non-essential personnel if surrounding fire generates hazardous fumes. Use self-contained breathing apparatus (SCBA) in enclosed/smoke-filled fire situations as a general precaution.

Additional provisions:

No specific additional provisions beyond general fire-fighting practice.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel:

Avoid generating/breathing dust. Use appropriate PPE (Section 8). Ventilate the area.

For emergency responders:

Wear suitable dust protection equipment. Minimise dust dispersion during clean-up.

6.2 Environmental precautions:

Not expected to be environmentally hazardous; nonetheless prevent large-scale release to drains/watercourses as good practice.

6.3 Methods and materials for containment and cleaning up:

Avoid dry sweeping, which raises dust; use vacuum cleaning with appropriate HEPA filtration, or damp sweeping, then place material in suitable labelled containers for disposal or reuse.

6.4 Reference to other sections:

See sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling:

A. General precautions for safe use:

Avoid generating and breathing dust during bulk handling, transfer or mixing. Use local exhaust ventilation/dust extraction at transfer points.

B. Technical recommendations for the prevention of fires and explosions:

The product itself is non-combustible; however, bond/ground equipment during pneumatic transfer of fine powders as general good practice to control static discharge.

C. Technical recommendations on general occupational hygiene:

Wash hands after handling. Avoid inhalation of dust; use good housekeeping to minimise dust accumulation.

D. Technical recommendations to prevent environmental risks:

Prevent spillage from entering drains or watercourses as good practice.

7.2 Conditions for safe storage, including any incompatibilities:

A. Specific storage requirements:

Minimum Temp.	Ambient (no specific minimum)
Maximum Temp.	40°C
Maximum time	24 Months (in original sealed, dry packaging)

B. General conditions for storage:

Store in a dry, well-ventilated place in tightly closed containers/bags, as the product is hygroscopic in nature and will absorb ambient moisture. Keep containers properly labelled.

7.3 Specific end use(s):

Industrial rheology-control additive and reinforcing filler as described in Section 1.2. Except for the instructions already specified, no special recommendations are required.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters:

Occupational exposure limits applicable to synthetic amorphous silica, as published in widely referenced international OEL lists, used here as reference guidance (distinct from, and generally less restrictive than, limits for respirable crystalline silica):

Identification	Occupational Exposure Limit Type	Value
Synthetic amorphous (fumed) silica CAS: 112945-52-5	Time Weighted average concentration (8 hrs) – total dust	10 mg/m³
	Time Weighted average concentration (8 hrs) – respirable fraction	3 mg/m³

8.2 Appropriate engineering controls:

Use local exhaust ventilation/dust extraction at bagging, mixing and transfer points to keep airborne dust below the limits in 8.1.

B. Respiratory protection:

Use a particulate (dust) respirator (FFP2/P2 or higher) where dust levels may exceed occupational exposure limits or ventilation is inadequate.

C. Specific protection for the hands:

General-purpose protective gloves recommended to minimise drying/mechanical irritation from repeated contact.

D. Eye and face protection:

Safety glasses/goggles recommended, particularly in dusty environments.

E. Bodily protection:

General work clothing/overalls; dust-resistant coveralls for prolonged bulk handling.

F. Additional emergency measures:

Eyewash station and washing facilities should be available in the work area.

Environmental exposure controls:

Avoid release to the environment. See subsection 7.1.D.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

Appearance	
Physical state at 20°C	Solid (very fine, fluffy powder)

Appearance	Extremely light, low-bulk-density powder
Color	White
Odor	Odorless
Odour threshold	Not applicable
Volatility	
Boiling point at atmospheric pressure	Not applicable (solid, decomposes/sublimes only at extreme temperature)
Vapour pressure at 20°C	Negligible
Evaporation rate at 20°C	Not relevant (solid)
Product Description	
Density / Relative density (true density)	2.2 g/cm³ (typical, amorphous silica)
Bulk density	40 – 60 g/L (typical, highly variable/fluffy, untamped)
pH (4% aqueous dispersion)	3.7 – 4.5 (typical, hydrophilic grade) or 5.5 – 7.5 (typical, hydrophobic/other grades) – refer to current specification sheet
Solubility in water at 20°C	Insoluble (disperses to form a thixotropic gel/suspension)
Partition coefficient n-octanol/water	Not applicable (inorganic solid)
Decomposition temperature	Not applicable (thermally stable up to very high temperature)
Melting point/freezing point	> 1600°C (amorphous silica, typical)
Flammability	
Flash Point	Not applicable (non-combustible solid)
Flammability (solid, gas)	Non-flammable, non-combustible
Autoignition temperature	Not applicable
Lower / Upper flammability limit	Not applicable
Particle Characteristics	
Primary particle size	7 – 40 nm (typical, fumed/pyrogenic grade)
Specific surface area (BET)	Typical value – refer to current specification sheet (commonly 50–400 m²/g depending on grade)

Values are typical for commercial-grade Fumed Silica – refer to current specification sheet for grade-specific figures (hydrophilic vs. hydrophobic surface treatment affects pH, bulk density and surface area).

9.2 Other information:

Explosive properties	Not explosive (inorganic oxide); general fine-powder dust-cloud precautions apply as noted in Section 5/10
Oxidising properties	Not an oxidiser
Corrosive to metals	Not corrosive
Heat of combustion	Not applicable (non-combustible)
Crystallinity	Amorphous – contains no detectable crystalline silica (quartz)
Loss on drying/ignition	Typical value – refer to current specification sheet

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity:

Chemically unreactive under normal conditions. Reacts with hydrofluoric acid and, at elevated temperature, with strong alkalis and some metal fluorides.

10.2 Chemical stability:

Chemically stable under the indicated conditions of storage, handling and use.

10.3 Possibility of hazardous reactions:

Under specified conditions, hazardous reactions are not expected.

10.4 Conditions to avoid:

Shock/Friction	Contact with Air	Increase in Temperature	Sunlight	Humidity
Not applicable	Not applicable	Not applicable (thermally stable)	Not applicable	Absorbs ambient moisture – keep containers closed

10.5 Incompatible materials:

Hydrofluoric Acid	Strong Alkalis (hot/concentrated)	Fluorine/Fluoride Compounds
Avoid direct contact (reacts to form silicon tetrafluoride)	Avoid prolonged contact at elevated temperature	Avoid contact

10.6 Hazardous decomposition products:

None under normal conditions; the product does not decompose or burn.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

Synthetic amorphous (fumed) silica is of low acute toxicity and is not classified as a respirable crystalline silica (RCS) carcinogen, being structurally and toxicologically distinct from crystalline silica (quartz). Based on available data, classification criteria for GHS hazard classes are not met.

A. Ingestion (acute effect):

Low acute oral toxicity; widely used as a food/pharmaceutical excipient (anti-caking agent) at appropriate purity grades.

B. Inhalation (acute effect):

Fine dust may cause mechanical/nuisance irritation of the upper respiratory tract. Unlike crystalline silica, amorphous silica of this type is not associated with silicosis under the exposure conditions and purity typically encountered with this product.

C. Contact with skin and eyes (acute effect):

May cause mild mechanical/drying irritation on repeated contact due to its fine, absorbent particulate nature; not expected to be a primary skin or eye irritant under GHS criteria.

D. CMR effects (carcinogenicity, mutagenicity, reproductive toxicity):

Classification criteria for carcinogenicity, mutagenicity and reproductive toxicity are not met based on available data. IARC classification of silica (Group 1) applies specifically to inhaled crystalline silica from occupational sources and does not apply to this amorphous/synthetic product.

E. Sensitizing effects:

Classification criteria for respiratory or skin sensitisation are not met based on available data.

F. Specific target organ toxicity (STOT) – single exposure:

Classification criteria are not met based on available data.

G. Specific target organ toxicity (STOT) – repeated exposure:

Classification criteria are not met based on available data.

H. Aspiration hazard:

Classification criteria are not met based on available data (solid powder).

Product-specific toxicological information:

Identification	Acute Toxicity	Genus
Fumed Silica CAS: 112945-52-5	LD50 oral: > 5000 mg/kg	Rat
	LD50 dermal: > 5000 mg/kg	Rabbit

SECTION 12: ECOLOGICAL INFORMATION

Not expected to be hazardous to the aquatic environment under GHS criteria; silicon dioxide is a naturally occurring, essentially inert material in environmental media.

12.1 Toxicity:

Acute Toxicity	Species	Genus
LC50: > 1000 mg/L (96h) (Typical value – refer to current specification sheet)	Non-applicable	Fish

12.2 Persistence and degradability:

Not applicable/not biodegradable in the conventional sense – inorganic oxide that is chemically stable in the environment.

12.3 Bioaccumulative potential:

Not expected to bioaccumulate; inert inorganic solid.

12.4 Mobility in soil:

Koc	Henry	Dry Soil	Moist Soil
Not applicable	Not applicable	Low mobility (insoluble solid)	Low mobility

12.5 Results of PBT and vPvB assessment:

Does not meet PBT/vPvB criteria (inorganic substance).

12.6 Other adverse effects:

None known.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Disposal methods:

Dispose of via a licensed waste disposal contractor in accordance with national and local regulations, or recycle/reprocess where possible as a non-hazardous inorganic solid. Avoid generating dust during disposal handling. Empty containers/bags may retain residual powder; dispose of as per label instructions.

SECTION 14: TRANSPORT INFORMATION

Transport of dangerous goods by land (ADR 2023 / RID 2023):

14.1 UN number	Non-applicable – not classified as dangerous goods
14.2 UN proper shipping name	Not applicable
14.3 Transport hazard class(es)	Not applicable
14.4 Packing group	N/A
14.5 Environmental hazard	No
14.6 Special precautions for user	Physico-chemical properties: see section 9
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

Transport of dangerous goods by sea (IMDG 41-22):

14.1 UN number	Non-applicable – not classified as dangerous goods
14.2 UN proper shipping name	Not applicable
14.3 Transport hazard class(es)	Not applicable
14.4 Packing group	N/A
14.5 Marine pollutant	No
14.6 Special precautions for user	Non-applicable
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

Transport of dangerous goods by air (IATA/ICAO 2024):

14.1 UN number	Non-applicable
14.2 UN proper shipping name	Not applicable
14.3 Transport hazard class(es)	Not applicable
14.4 Packing group	N/A
14.5 Environmental hazard	No
14.6 Special precautions for user	Non-applicable
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations specific for the product in question:

It is recommended to use the information included in this safety data sheet as data used in a risk evaluation of local circumstances, in order to establish the necessary risk prevention measures for the manipulation, use, storage and disposal of this product. Note: this product is amorphous synthetic silica and is not subject to regulatory controls specific to respirable crystalline silica.

Other legislation:

Manufacture, Storage and Import of Hazardous Chemicals Rules 1989
The Factories Act, 1948 (Act No. 63 of 1948), as amended by the Factories (Amendment) Act, 1987 (Act 20 of 1987)

SECTION 16: OTHER INFORMATION

Legislation related to safety data sheets:

This safety data sheet has been designed in accordance with Annex 4 – Guidance on the preparation of Safety Data Sheets of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Texts of the legislative phrases mentioned in sections 2 and 3:

Not applicable – product not classified as hazardous.

The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3.

Advice related to training:

Minimal training is recommended to prevent industrial risks for staff using this product, in order to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product – in particular the distinction between this amorphous product and crystalline silica.

Principal bibliographical sources:

The United Nations Economic Commission for Europe (UNECE); publicly available GHS classification references for synthetic amorphous (fumed/pyrogenic) silica.

Abbreviations and acronyms:

ADR: European agreement concerning the international carriage of dangerous goods by road | IMDG: International maritime dangerous goods code | IATA: International Air Transport Association | ICAO: International Civil Aviation Organisation | LD50: Lethal Dose 50 | LC50: Lethal Concentration 50 | RCS: Respirable Crystalline Silica | BET: Brunauer–Emmett–Teller (surface area method) | IARC: International Agency for Research on Cancer

The information contained in this safety data sheet is based on sources, technical knowledge and current legislation, without being able to guarantee its accuracy. This information cannot be considered a guarantee of the properties of the product; it is simply a description of the security requirements. The occupational methodology and conditions for users of this product are not within Suraj Chemicals' awareness or control, and it is ultimately the responsibility of the user to take the necessary measures to obtain the legal requirements concerning the manipulation, storage, use and disposal of chemical products. The information on this safety data sheet only refers to this product, which should not be used for needs other than those specified.

END OF SAFETY DATA SHEET

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