

ABOUT US

Madhu Silica Pvt. Ltd. (MSPL) is the largest manufacturer of Precipitated Silica in India.

MSPL manufactures more than 50 different grades of Silica catering to a wide array of Industries for different applications.

The Company has 5 established plants capable of manufacturing 2,00,000 MT / annum.

The company today has a marketing office in Delhi, a large Business Associate network in India and across the Globe.

We are ISO-9001, ISO-22000, ISO 14001, BS-OHSAS 18001, HALAL, KOSHER, FSSAI certified organization, REACH registered meeting EU regulations.

Our Markets & Silica Grades

- Food / Feed applications
- Laundry / Fabric / Home Care
- Paints & Coating Applications
- Oral Healthcare / Cosmetics / Pharma Applications
- Tyre / Rubber / Footwear / Misc. Rubber Applications (Highly Dispersible & Conventional Silica grades)
- Specialty applications
- Polymer / Plastics applications (Gel route Silica)

Facilities

- World class manufacturing facilities to give customer satisfaction through Consistency in Quality
- In-house Rubber, Dental, paint Application Labs
- World class Research & Development Centre, established in 1996, recognized by DSIR, New Delhi.

Madhu Silica Pvt. Ltd. (MSPL) is the largest manufacturer of Precipitated Silica in India and the 4th largest in the world.





MISSION

Mission to serve the Industry by offering consistent quality products, product accessibility with differentiating services.



VISION

With a vision to create a Brand Image bringing in sustainability with growth.



VALUES

Keeping intact the values for core competence in Governance with Integrity, Accountability, Passion and Diversity.



REACH registered

Country specific certificates

FAMI - QS

HACCP

FDA-Cosmetic / FSSAI

ISO 22000

ISO 9001

ISO 14001

OHSAS 18001

Our manufacturing setups are capable to produce

- Defined quality with consistency
- Sustainability, Transparency with Accountable work practices

In place are

- Quality Management Systems
- Accreditations from ISO systems



R & D Lab



Q. C. Laboratory

Our R & D Centre was established in 1996 which gave strength to our operations and fueled our growth.

With Innovative capabilitites, in place are:

- Testing and Application Laboratories for Toothpaste and Rubber
- Pilot Plant Set up



Madhu Silica Pvt. Ltd. – Research & Development Centre D. S. I. R., Govt. of India recognized centre

ANTI-CAKING AND FREE FLOW ADDITIVES

CAKING PROBLEMS IN POWDERS

Powdered materials in food, poultry, detergents and pharmaceutical industries are increasingly used. A good flowability of powders is the most desirable property for ease of handling powders, packaging formats and dosing them at the right level in various applications. Many powders tend to cake on storage under humid and high temperature conditions and are difficult to flow during handling, posing a huge challenge. The moisture pick up by particles tend to stick to each other preventing the smooth flow of powders.

Precipitated silica and alumina silicates manufactured by Madhu Silica Private Limited as Flow aids are designed carefully to avoid such caking problems in various applications. The discharging them easily out of storage vessels, end product characteristics of silica are varied to suit the particular requirement of the end use application to give the optimum benefit in terms of flowability.

> The mechanism of free flow of powders provided by precipitated silicas are

- (a) by coating the surface of particles
- (b) by absorbing moisture preferentially
- (c) by absorbing oil/fat components and
- (d) by reducing interaction between particles.

BENEFITS

- Synthetic High Brightness Precipitated Silica and sodium alumino-silicate offers free flowing & anticaking characteristics to substrates that have poor flow properties and tend to cake on storage.
- Precipitated silica products encapsulate powder particles and absorb ambient liquids, oils and fats from the surface of host powders to keep them from agglomerating.
- MSPL Silica's free flow/anti-caking aids allow smooth flow control throughout the production process, are added at low levels. They are pure, inert, GMO free and approved for use in food and animal feed.
- The high absorption power and outstanding anticaking property is ideally suited for use in Food Mixes, Salt, Beverage mixes, Dairy creamer, hygroscopic materials, Industrial chemicals, Spices Fragrance etc., thereby improving the shelf-life of the substrate by providing superior free flowing and anti-caking characteristics.

- The silica particles coat the surface of the substrate, thereby reducing the interparticle interactions by preferentially absorbing the moisture that causes bridging between particles. High oil absorption & very fine particles of conditioners coat the surface of the ingredients providing a parting action which improves and maintains the flowability of the mix.
- MSPL Silica's preferentially absorb oil, fats, and moisture in the substrate thereby offering the following advantages:
 - Prevents caking
 - Improved flow and increase in packaging rates
 - Eliminate lumps
 - Even dispersal of active powdered substrates
 - Decrease clogging and bridging during production
 - Prevent packing of particles and acts as a physical barrier when mass is moving
 - Coat and smooth the edges of bulk powders reducing inter-particle friction
 - Adsorb excess moisture from the atmosphere before it can be absorbed by the bulk powder.

ANTI-CAKING AND FREE FLOW ADDITIVE FOR FLAVORS/SEASONINGS/FRAGRANCE

PRODUCT CHARACTERISTICS

- MSPL range of Synthetic Precipitated Silica's & Silicates are inert materials, fine white odorless powder, chemically inert, non-toxic and free from impurity.
- Meets EU directives, ISO-22000, Halal, Kosher, FSSAI certified and registered for REACH & permitted for use in foods.
- Powders that flow poorly during manufacture adversely affects process operations & efficiency.
- Flow problems can be caused by one or more of the factors below:
 - Moisture
 - Particle size and shape
 - Temperature
 - Surface activity

- Moisture, Pressure and Temperature adversely affects powdered products. These conditions can cause caking, bridging in hoppers, clogging of lines, equipment and lead to severe packaging problems and lumping of material on storage.
- Many powdery and granular food products have a tendency to absorb water and clump together.
 Whether it's Flavors, Seasoning's, Fragrance, table salt, icing sugar, non-dairy creamer, instant soup or even grated parmesan cheese, if the ingredients don't flow freely then they are difficult to use.
- Anti-caking agents are used to prevent this problem. Precipitated silica alumino silicates are most inert material and effective anti-caking agent for food items, flavours and fragrances. They don't modify the food itself – they just make it less 'sticky', often by preferentially absorbing water.





SYNTHETIC SODIUM ALUMINOSILICATE GRADES: GRADES & PRODUCT SPECIFICATIONS:

GRADE	% MOISTURE (MAX)	pH (5% SLURRY)	OIL ABSORPTION cc /100gm	BULK DENSITY (g/l)	AVERAGE PARTICLE SIZE, MICRONS (D50)	% WHITENESS	APPLICATION AREA - ANTI- CAKING & FREE FLOWING AGENT
MASIL	6.0	9.0 – 10.5	100 - 130	270	6.0 Max.	99.0	Alkaline pH
MASIL - 7	6.0	6.5 – 7.5	100 - 130	270	6.0 Max.	99.0	Neutral pH

SYNTHETIC PRECIPITATED SILICA GRADES

Different Silica gardes are available with varying absorption capacity and average particle size, to meet application requirements and substrate characteristics:

GRADE & PRODUCT SPECIFICATIONS

	PRODUCT	% MOISTURE (MAX.)	5% pH	% WATER ABSORPTION	BULK DENSITY, TAMPED, (g/l)	AVERAGE PARTICLE SIZE, MICRONS (D50)	% SiO2 (ANHYDROUS BASIS)	BET SURFACE AREA, m2/gm	*ABSORPTION CAPACITY RATING
	MFIL - P(S)	6.0	6.0-7.0	260 Min.	80 - 130	10.0-15.0	98.5 Min.	190	*** D50 ~13.0 um
	MFIL - P(S) (AC MILLED)	6.0	6.0-7.0	240 Min.	60 - 120	10.0 - 12.0	98.5 M in.	190	*** D50^11.0 um
	MFIL - P(S) (8.0 Microns)	6.0	6.0-7.0	260 Min.	60 - 100	7.0 - 9.0	98.5 Min.	190	**** D50 ~8.0 um
	MFIL - P(S) (5.0 Microns)	6.0	6.0-7.0	280 Min.	40 - 80	4.0 - 6.0	98.5 M in.	190	***** D50 ~5.0 um, high absorption
5) I	MFIL - P(S) (3.0 Microns)	6.0	6.0-7.0	280 Min.	40 - 80	2.0 - 4.0	98.5 M in.	190	***** D50 ~3.0 um, high absorption
STATE OF THE PARTY	MFIL - HV	6.0	6.0-7.0	270 Min.	80 – 130	10.0 - 15.0	98.5 Min.	200	***** D50~13.0 um, high Absorption
AND DESCRIPTIONS	MFIL - 500(S)	6.0	6.0-8.0	280 Min.	80 – 130	14.0 - 20.0	98.5 Min.	500	***** D50 ~15.0 um, high Absorption & high Surface area

CARRIERS FOR ANIMAL/POULTRY FEED NUTRITION/VITAMIN-E

PRODUCT CHARACTERISTICS

- MSPL range of synthetic precipitated Silica are inert material, fine white odorless powder, chemically inert, non-toxic and free from impurity.
- Meets EU directives, FAMI-QS, ISO-22000, Halal, Kosher, FSSAI certified and registered for REACH.

BENEFITS

- Synthetic High Brightness Silica, used as a carrier to carry active liquid ingredients and convert into free-flowing powders.
- Silica carriers absorb liquids into their pores turning the liquid into a free-flowing powder.
- The unique spherical shape & particle size distribution of silica helps to optimize the flowability of nutrients which are essential to animal health.
- The enhanced flowability of silica, coupled with its absorption capacity, facilitates storage and transport to the mixer tanks to make feed premixes.
- Ease in handling of high-viscosity liquids and accuracy of addition for liquid chemicals converted into powder form, where small quantities need to be added in the process.
- Precipitated silica readily absorbs high volumes of liquid & is ideal for converting viscous liquids into free-flowing powders.
- Increased cost-effectiveness for manufacturers by enabling more efficient blending and processing.

- Ideal for loading active ingredients into products such as:
 - Concentrated flavours, nutrients, preservatives, coloring agents into artificial sweeteners, protein powders, drink mixes, instant soups and other convenience foods
 - Vitamins, minerals and proteins into animal feed premixes
 - Malathion, acephate and other formulations into pesticides, insecticides and herbicides
 - Resins and polymers into elastomers and plastics
 - Reinforcing agents, bonding agents and antioxidants into rubber compounds
 - Resins and other additives into coatings
 - Ethoxyquin, Lecithin
 - Propionic acid
 - Molasses
 - Organic oils
 - Chlortetracycline
 - Other animal feed additives



SYNTHETIC PRECIPITATED SILICA GRADES

- MFIL-P(U)
- MFIL-P(U)DF -Dust Free
- MFIL-P(S)

GRADE & PRODUCT SPECIFICATIONS

PRODUCT	% MOISTURE (MAX.)	5% pH	% DBP ABSORPTION, cc/100gm	BULK DENSITY, TAMPED, (g/l)	AVERAGE PARTICLE SIZE, MICRONS (D50)	% SiO2 (ANHYDROUS BASIS)	BET SURFACE AREA, m2/ gm	APPLICATION BENEFIT CARRIER
MFIL-P(U)	6.0	6.0-7.0	240 Min.	230 - 270	95 - 120	98.5 Min.	190	For Animal / Poultry Feed
MFIL-P(U) DF, Dust Free	6.0	6.0-7.0	250 Min.	230 - 270	250 - 350	98.5 Min.	180	For Animal/Poultry Feed - Dust free silica with higher D50~300 um
MFIL-P(S)	6.0	6.0-7.0	260 Min.	80 - 130	10.0 - 15.0	98.5 Min.	190	For Carrying Vitamin E - Low D50~13 um







PRECIPITATED SILICA FOR LAUNDRY / HOME CARE

PRODUCT CHARACTERISTICS

- MSPL range of synthetic precipitated Silica's are inert materials, fine white odorless powder, chemically inert, non-toxic and free from impurity.
- Laundry detergent powder formulation use liquids like surfactant actives, perfume & enzymes in an inorganic base, as a result of which the pre-mix tends to be sticky and does not flow well.
- MFIL-100 (special) grade of silica is designed

- specifically for Laundry/ Fabric/ Home Care powders to make the powders flow easily.
- The silica particles coat the surface of the substrate, thereby reducing the interparticle interactions by preferentially absorbing the moisture that causes bridging between particles. The fine particles of silica coat the surface of the powder thereby providing a parting action which improves and maintains the flowability of the mix.

BENEFITS

- High Absorption power for liquids thus effectively works at lower loading
- Helps to improve flowability and prevents caking of powders
- Absorbs perfumes and liquid enzymes and release
- during wash cycle
- Inert material and has good comptability in detergent powder formulations
- Cost effective solution for making whitening claims



SYNTHETIC PRECIPITATED SILICA GRADE: MFIL-100 (Special):

PROPERTY	UNIT	TYPICAL VALUE
Loss on Drying,(at 105°C, 2 hrs.)	%	4.5
Loss on Ignition, on anhydrous basis (at 10000C for 2 hrs.)	%	5
Bulk Density, Tapped,(while Material packed)	g/l	100
pH (in 5% aqu. Suspn.)	-	6.5
Water Absorption	%	270
DBP Absorption, (By Brabender Absorptometer)	cc/100gm	330
Residue on 325 mesh (Wet Sieving)	%	0.5
SiO2, on anhydrous basis	%	98.7
Soluble Salts	%	0.6
Average Particle Size-D50 (By Malvern Instrument)	microns	13
Iron Content (Fe+3)	ppm	170
Surface Area –BET	m2/gm	190





We cater to industries worldwide for below applications



Please contact us for your requirements



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