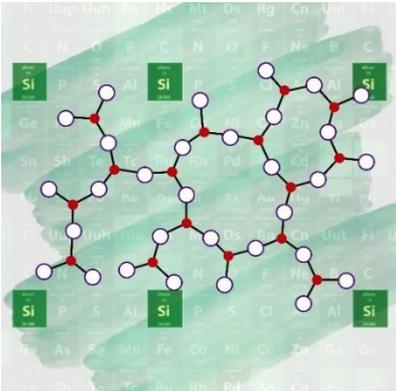




Amorphous Silicon dioxide
International Number 551/E551

FoodFlow-Sil



Bio Silica - 100% Green Product
derived from Rice Husk Ash.



Ultrapure - Free from traces of crystals,
heavy metals, Sulphate impurities etc.



Approved Food Additive in US, Europe,
Australia, India, China, Japan, HALAL.



Food Industry Challenges

Products like seasoning, salts, dairy products, sweets, icing sugar, dry mixes, spices, spice mixes, pan masala, mouth fresheners, whey powder, cocoa and others are **hygroscopic in nature and slowly suck humidity out of the air.** As time passes **particles tend to bind & clump together.** Problem aggravates under pressure, stacking etc. This hinders the food journey from manufacturing to consumer.

Loss of free flowability leading to difficulty in accurate dosing & transportation within process.

Residual Moisture drives accelerates degradation due to oxidation & microbes

Products with oil content become rancid and develops foul smell.

Poor Consumer experience with lack of free flowability & in-pack degradation.



Mode Of Action

FoodFlow-Sil have strong water absorptivity & holding capacity without experiencing stickiness.

FoodFlow-Sil coats the host food particle. The effect is best when the host particle is completely covered.

FoodFlow-Sil absorbs fat & oil from the host and covers the host particle completely.

Keeps the food particles separated permitting the liquid to wet them individually.

Removes the oily protective skin of insects causing them to dry out and die.

Absorbs moisture from the host reducing the moisture level of the host product.

FoodFlow-Sil is abrasive in nature.

Competes with host food powder for moisture.

Absorbs moisture before the host, reducing the hygroscopicity of host

Reduces electrostatic cohesion and resists cake formation

Increases the speed of dispersion and resists lump formation.

Acts as a desiccant and makes the host product free from insects.

Inhibits oxidation & microbe growth improving shelf life.

Improves grinding performance when mixed with product.



Applications

Mixed with various products before grinding to improve grinding performance & inhibit cake formation.

To act as an absorbent to remove surface oil from food like namkeens, chips, fried products. Improves texture & shelf life.

Used as an absorbent for flavouring agents acting like a microcapsule as well as bulking agent.

As a defoamer / stabilizer for foaming caused by proteins, nitrogenous materials & others which may interfere with processing.

To ensure that the material does not stick on conveyors, hoppers and packaging lines for uninterrupted production.

Proper distribution of seasoning & flavors for consistent consumer experience.

Give Flexibility to convert liquid into powder for formulations.

Ensure that the product is free flowing in consumer's hand.

Make powders easily disperse dissolve in any liquid (water, milk etc) without forming lumps.



General Specification

White, free flowing powder

SiO₂ Content	99.0%
Free Moisture(105°C for 2 Hrs)	6.0%
LOI (1000 °C for 2 Hrs)	6.0%
Bulk Density when Packed (gms/lit)	~170-220
DBT Absorption (+/- 10) ml/100 gm	~240
pH	~5-8
Avg Particle Size (D50) - microns	12
BET Surface Area (m²/gm)	165-175
Residue on 325 Mesh (less than)	0.1%
Soluble Salt (NaCl) less than	0.2%
Ferrous Impurities (max ppm)	200
Sulphate, crystalline silica	Nil
Heavy Metal Content (max ppm)	1



Silica Impurity

Impact on End Product

SULPHATE

May react with oil & other components. May change the colour and appearance of the product.

SALT

Imparts salty taste to the product. Disturbs product outcome with sweet nature like mouth fresheners, pan masala, cardamom, jaggery, sugar etc.

Heavy Metal [Lead, Arsenic, Mercury]

Not acceptable in most food products and may lead to rejection or the whole batch and/or can attract ban on the product.

Ferrous

May react & interfere with product formulation.

Crystalline Silica

Health hazard not acceptable by regulators.



Amorphous Silica

in Regulatory Framework

INDIA [Food & Safety Standards Regulations, 2011]

Use of anticaking agent in flavours - **Max level of 2%**

Fats and Oils & Fat Emulsions: **10mg/Kg**

Powdered Sugar / Powdered Dextrose (icing sugar): **15g/Kg**

Dried Whey & Whey Products, excluding Whey Cheese: **10g/Kg**

Salt, Iron Fortified Salt, Iodised Salt, Coffee, Coffee substitutes, tea, herbal infusions, hot cereal and grain beverages : **GMP**

CODEX

Food additive included in the Codex General Standard for Food Additives (GSFA)

Functional Classes: anticaking agent and filter aid. It may be used at the maximum levels of 10g and 15g/kg in the dried whey and whey products (excluding whey cheeses) and in the powdered sugar and powdered dextrose products, respectively. For other foods, as per good manufacturing practices.



Amorphous Silica

in Regulatory Framework

**USA – EPA [Environmental Protection Agency],
USDA [US Department of Agriculture]**

7631-86-9 Silicon dioxide (crystalline-free forms only) is listed under the List 4A – Minimal Risk Inert Ingredient.

EU, JAPAN, CANADA

EU: listed as approved in Directive 92/2/EC of the European Parliament and the Council.

CANADA: It may be used as an anticaking agent and miscellaneous agent (such as filtering and clarifying agent in beer, foaming agent in beverages, tableting aids).

JAPAN: Listed as Approved in Food Sanitation Law Enforcement Regulations.

IFOAM, [CODEX, EU, CANADA] (Organic)

As an additive is permitted to use in herbs, spices, seasonings, and condiments (e.g. seasonings for instant noodles); also, as a processing aid, it may be used for gel or colloidal solution.

Let's Talk Business



Looking for High Purity Silica but
can't afford Fumed Silica?

Manufacturers of :

Spices & Seasonings, Namkeens &
snacks, **Sugar & Jaggery Powder**,
Powdered Beverages, **Powdered Health
Supplements**, Whey Powder, **Mouth
Fresheners & Pan Masala**,
In any food product to reducing moisture
or to convert liquid into powder.



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