

Improving your milling process with AEROSIL® fumed silica and SIPERNAT® specialty silica



Enhance mill cleanliness and product flowability with Evonik's specialty silica and silicates

Many common ingredients undergo milling as a production step such as spices, seasonings, icing (confectioner's) sugar, and herbs, along with various industrial powders. The handling of these products during the milling step can cause severe problems such as adhesions at the mill wall and lumping of the final product.

Good flowability and anti-caking performance of milled powders is crucial for efficient handling, reduced shut down periods, accurate dosing and optimized conveying and storage.

How can SIPERNAT® and AEROSIL® help during the milling step?

SILICA BENEFITS

- Reduce the caking of low melting powders
- Promptly absorb any released liquid
- Avoid clogging of the mill and decrease the shutdown times
- Improve the free flowing and anti-caking properties
- Reduce time and cost consuming maintenance intervals
- Increase the throughput by longer operation times

LASTING IMPROVEMENT

The use of Evonik's specialty silica and fumed silica is beneficial for hammer mills, pin mills or similar. Applying silica in this way is especially convenient, as the fine powder is already coated with silica during the milling process, which improves the flow-characteristics of the material for the following processing steps.

Table 1: Application examples of silica used as milling aid

Application	Examples	Recommended types of milling aid
Food/Feed	Seasonings/Spices Herbs Salt/Sugar Mineral mixes Limestone	SIPERNAT® 50 or SIPERNAT® 50 S SIPERNAT® 22 or SIPERNAT® 22 S SIPERNAT® 350 AEROSIL® 200 F or AEROSIL® 380 F SIPERNAT® D 17 for feed only
Agrochemicals	Wettable powders	SIPERNAT® 22 SIPERNAT® 320 SIPERNAT® 350 SIPERNAT® 360
Chemical products	Sulphur	SIPERNAT® 320

Examples for AEROSIL® and SIPERNAT® grades

By offering the broadest range of food and feed compliant SIPERNAT® and AEROSIL® products, Evonik is able to address a wide range of properties:

Table 2: Characteristic physico-chemical data of selected silica grades

Application	DOA*-absorption in g/100 g Internal method	Particle size in µm Laser diffraction following ISO 13320	Food grade**	Feed grade***
SIPERNAT® 22 S	240	13.5	Yes/E 551	Yes/E 551 a
SIPERNAT® 22	235	120	Yes/E 551	Yes/E 551 a
SIPERNAT® 50 S	280	18	Yes/E 551	Yes/E 551 a
SIPERNAT® 50	295	50	Yes/E 551	Yes/E 551 a
SIPERNAT® 350	170	4.5	Yes/E 551	Yes/E 551 a
SIPERNAT® 320	195	≤10% >63 µm	No	No
SIPERNAT® 340	235	20	Food grade available in the Americas only	No
SIPERNAT® D 17	Not specified	10	No	Yes/E 551 a
AEROSIL® 200 F	Not applicable	Not applicable	Yes/E 551	Yes/E 551 b
AEROSIL® 380 F	Not applicable	Not applicable	Yes/E 551	Yes/E 551 b

* DOA = Dioctyl adipate, the numbers show the absorption capacity of a product, higher numbers means a larger absorption capacity, measured on original substance

** In Europe HACCP according to food additives EU 1333-2008

*** In Europe according to FAMI-QS

Purple marked product is hydrophobic. The given data are typical values. Specification on request.

For additional information:



evonik.click/
smarteffects



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silica-as-food-additive

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