

SILYSIAMONT – AN INTRODUCTION

Silysiamont S.p.A. is an Italian based company established in 2002 by the Japanese Company Fuji Silysia Chemical Ltd, specialized in the production of amorphous silica with more than 50 years' experience.

Silysiamont S.p.A. produces micronized amorphous silica with varying degrees of pore volume and particle sizes under the brand name SYLYSIA[®], and is active in the EMEA markets both directly and through a network of local distributors like Applied Chemicals.

Silysiamont is certified on Quality, Safety and Environmental by ISO 9001- 45001-14001 accreditation. The chemical structure of SYLYSIA® is based on Silicon Dioxide (SiO2), The refractive index of SYLYSIA® is 1.46 -a high transparency similar to many polymer materials.

Characteristics of SYLYSIA

Porosity

SYLYSIA[®] has a sponge-like structure with different degrees of porosity that varies from low (0,4 ml/g) to high (1,8 ml/g) pore volumes. Low pore volume grades present reduced liquids absorption capacity and therefore limited influence on viscosity. High pore volume grades are characterized by higher matting efficiency thanks to their higher volume (number of particles) per unit weight.

Surface Treatment

SYLYSIA[®] grades are characterized by high specific surface area (300-700 m2/g).





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Surface treatment is applied to the product in order to improve the performance in various applications. In most SYLYSIA® grades an organic treatment, based on different wax types, is applied in order to meet specific needs, as for example: prevention of the formation of a hard sediment and improvement of the mechanical properties of the applied paint film.

Particle Size

Each SYLYSIA[®] grade has a specific and controlled particle size distribution. The particle size is immediately relevant to the matting efficiency, smoothness and transparency of the applied paint film. In most applications, the selection of a suitable SYLYSIA[®] grade with a specific particle size is governed by the thickness of the applied film. **Versatilit** The wide range of pore and particle sizes available make SYLYSIA[®] grades suitable for a wide variety of applications.

Quality and mechanical properties of the applied film

SYLYSIA[®] grades provide smooth paint film surfaces with a high degree of transparency and consistency. SYLYSIA[®] organic surface treatment silica improves surface slip and also benefits mechanical properties of the film.

Ease of dispersion

SYLYSIA[®] is very easily dispersible even under critical conditions and can be added in any phase during the production cycle. However, high speed stirring equipment with suitable peripheral speed of 5 to 10 m/s and dispersion time of at least 15

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to 20 minutes are recommended to get the best performance from the chosen silica grade.

Rheology

SYLYSIA's special production process lead to silica with a minimal, highly controllable rheological impact allowing higher matting efficiency with optimum rheological behaviour.

Synthetic micronized silica gel can be used in a wide variety of applications including matting agents in paint and coatings, anti-blocking in polymer films, carrier in catalyst, food and cosmetics and many others.

Matting agent for coatings

Silica is available in a variety of different pore volume, particle size, oil absorption and surface treatment making SYLYSIA the ideal matting agent for the following applications: • Water and solvent based paint and varnish

- Leather coating
- Wood coating
- Do-It-Yourself (DIY)
- Coil coating
- UV systems
- Can coating

Ink

Sylysia in OPV offers an excellent matting efficiency combined with high transparency and enhanced blocking resistance.

Inkjet paper coatings

The wide spectrum of particle size, pore volume and oil absorption make SYLYSIA capable of meeting all the requirements of the coating formulators. The use of SYLYSIA speeds the ink drying rates, leading to excellent optical density and color gamut, enhancing high print definition and minimal color to color bleed.

Anti-Blocking

Adding SYLYSIA into the resin, the adhesive effects experienced during rolling and lamination of plastic films can be prevented. Thanks to it refractory index of 1.46 it can be used in most plastic resins without deteriorating film transparency.

Food & Cosmetics

SYLYSIA FCP is an amorphous silica-gel characterized by high purity and high porosity and it is produced to meet the US Pharmacopeia requirements. In the EU it is approved as E551 additive. It is used as anti-caking agent, flow and viscosity controller.



Laboratory

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Control Room



Special Fields

SYLYSIA[®] is a synthetic silica characterized by large internal surface area and high porosity. Controlling these properties, the silica can be used in a variety of other of application such Adhesives, Catalysts supports, Ceramics, etc.