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Talc (magnesium silicate hydrate, $Mg_3[(OH)_2(Si_4O_{10})]$)...

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Characteristics / function:

Soapstone and **talc** are two different mineralic appearances of the same chemical composition of **magnesium silicate hydrate $Mg_3[(OH)_2(Si_4O_{10})]$**.

Talc is a **plate-like magnesium silicate hydrate**, belonging to the **phyllo silicates**. It creates substances, ranging from transparent to intransparent, colorless or light green, consisting of flaky-crystalline, mother-of-pearl-like shining, mica-like aggregations.

Soapstone has the identical chemical compounds, a dense, bulky, sometimes low derivative of talc. A sharp separation does not exist; fine crystalline, but textured samples can have the same technical behavior as talc. Talc is an important filling and strengthener, especially for the paint and varnish industry, because of its **technical qualities**, caused by the chemical structure and the shape of the particles.

- solidification of the paint-film
- reinforcement / weather resistance
- improvement of adhesion and sanding
- elevation of the bending strength, slipperiness, elasticity
- protection from sedimentation during storage
- enables the production of high-quality mat and semi-mat varnishes
- elevation of the adhesion of paint material on metallic sub-soil
- self- dispersing in paint systems
- improvement of the dispensability of the applied pigments
- favors rheological properties, film hardness and film durability
- positive influences on the sanding of knifing putty and ground coats
- elevated scrub resistance of finishing enamels
- protection of anti-corrosion systems against humidity
- wood resin binding (paper industry)
- enables rapid- burning at low temperatures (ceramics)

It is mainly a **combination** of several mineral powders, each having a special function depending on the **specific qualities**. Often, however, micronised talc is applied as a **single extender**, for instance as a **metal-primer**, based on polyvinyl- butyral or in various **thermoplastics**.

Yet, not only the **mineralic compounds** of the raw material are important for the **technological properties** of a talc quality. It is also strongly influenced by the **micronising procedure**, the **degree of micronising** and the **distribution curve of the particles**.

Suggested applications:

- paints and varnishes
- coating materials
- paper
- adhesives and sealing- matters
- rubber
- plastics
- ceramics
- cosmetics / pharmacy

Wagon laden with talc.

Talc has been used successfully in the following areas:

Paints and Varnishes

Adhesion base, anti-corrosion base, anti-corrosion varnishes, acid hardening varnishes, baking enamel, coating powder, industrial finishes, traffic paint, wallpaper printing ink, glazings, flat paints, thixotropic varnishes, flatting varnishes, electrical insulating varnishes, painting materials, interior dispersion paints, house paints.

Plastics

Polypropylene, polystyrene, PVC, polyethylene, polyurethane, polycarbonate, polyamide.

Special applications

- polyester- mastic
- anti drumming compounds, sealing compounds
- undercoating
- pore fillers
- dispersion fillers
- 2-K compounds

Paper industry:

- printing paper with a smooth surface
- brushing- paint
- resin suppression

Various applications:

- polishes
- adhesives
- lubricants, insulations, release agent

The world-wide production of talc has increased substantially, thanks to many newly invented applications that permanently cover new markets.

Concerning the **polluted mineral phases** see: Soapstone

Bibliography:

- Römpps Chemie-Lexikon
- H. Kittel; Lehrbuch der Lacke und Beschichtungen
- Geächter/Müller: Kunststoffadditive/3. Ausgabe

Our product range:

Please contact us for more information about specific products (link: Contact and inquiries). We are looking forward to provide you with professional advise and a free quote.

It's a matter of course that we are also on your side with professional advise and offer detailed product-specific datasheets as well as further technical documentation.