



## CAS-Reg. No. 10101-39-0

### Characteristics:

Natural mineral, satin glossy, needle shaped, crystalline structure, high whiteness.

This white, **fibrous** mineral rested useless in the mines up to 1930. Only few geologists knew it as an unimportant, unusable mineral. The name is derived from one of the grandfathers of geology -**William Hyde Wollaston**- a geochemist in the 18th century.

The first known information about the mining and an industrial utilization of wollastonite comes from Randsburg, California. Around 1933, wollastonite was exploited in this area to produce **mineral wool**.

The wollastonite market can be split into two main branches, distinguished by their **fibrous** material aspects:

**Short fibrous wollastonite, having a diameter - length distribution of 1 : 3 to 1 : 5, are very rare in the application of strengthening fillings. These fibers are mainly used in ceramics, metal alloys and manufacturing as an extender.**

**The long fibrous qualities with a relation of 1 : 15 to a max. of 1 : 20 are needed as an asbestos substitute. A permanently growing demand comes from the paint-, fire fighting - and plastics industry.**

Apart from the **length of the fibers**, the **lightness** and the **loss at red heat** of wollastonite play an **important role** for various industries. A large amount of qualities is **extremely light** and has a very low **percentage of pollution**, caused by **iron oxide**, leading to a low percentage of  $\text{Fe}_2\text{O}_3$ .

These are the most significant factors for the majority of fillings, coatings and ceramical additives. The loss at red heat must be **smaller than 1 %** in the ceramics and the metal branch.

The evaporating gases consist mainly of  $\text{CO}_2$  hinting at a **calcite linkage**. The more disturbing linkages can be filtered during the upgrading process, the better are the results concerning the loss at red heat.

### Function:

The good properties of wollastonite combined with its very low absorption of humidity and extension at heat, the high abrasion resistance and the monokline crystal structure have the following effects:

- reinforcement of plastics
- avoiding sedimentation of paints
- improvement of the tensile strength of the films
- positive electric insulation properties
- pigment- cost saving
- excellent resistance against weather and waste gas

### Suggested applications:

- coatings
- brakes
- paints and varnishes
- rubber and cables
- ceramics
- adhesives
- plastics
- paper
- knifing putty and sealing material
- asbestos substitute

### Bibliography:

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

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