

Neuburg Siliceous Earth in Toothpaste and Dental Care Tablets

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Toothpastes help to improve the effects of the mechanical cleaning of the teeth with the toothbrush. They are available as soft pastes or gels; their main constituents, besides water, are abrasives, foaming agents, humectants and surfactants, flavoring and sweetening agents. Last not least, many modern toothpastes contain special ingredients for fighting periodontosis and caries (in particular fluorides).

Abrasives in modern formulations mostly are specially developed precipitated silicas (generally 15-30 %). In older products, whiting (calcium carbonate), sodium bicarbonate, different aluminum phosphates or also marble flour were used. The abrasives are mainly responsible for the cleaning action of the toothpaste; they remove plaque and harmful bacteria from the surface of the teeth.

All other ingredients represent additives with special functions. The foaming agents, for instance, improve a uniform distribution of the paste and loosen meal residues as well as plaque, and thus allow good cleaning action also at locations which are difficult to reach with the toothbrush. The detached plaque is bound by the surfactants (preferred sodium lauryl sulfate) in order to be more easily rinsed at the end of the brushing process. As humectant, mainly sorbitol is added; often in small amounts titanium dioxide (>1 %) serves as whitening pigment.

The polishing action of an abrasive in toothpaste depends on its concentration as well as its shape and size. A typical index is the RDA or REA value («Radioactive Dentin resp. Enamel Abrasion»); a higher figure for the RDA indicates a higher polishing efficiency. The respective value should be mentioned on each package. With a mild abrasive of a low RDA between 30 and 50, the tooth surfaces can be cleaned with the toothpaste without misgivings over long periods of time without being afraid of a loss of tooth substance.

In the world of economy, toothpastes are part of cosmetic goods. These do not only comprise decorative cosmetics, but also skin-care products such as creams or body-cleaning products such as soaps, shampoos or just toothpastes. Cosmetic products do not require official approval; but in Germany, toothpastes come under the food legislation.

The use of Neuburg Siliceous Earth as an abrasive in toothpastes is limited to the products which are not purely white in color, as the SILLITIN causes a beige shade which is not considered desirable by many end consumers.

On the other hand, Neuburg Siliceous Earth as a product of nature offers itself favorably for the manufacture of «natural» cosmetics. In such cases, the coarser grades SILLITIN V 85 or V 88 will be used. The Neuburg Siliceous Earth, as an advantage, gives rise to a gentle polishing action due to the rounded grain shape which ensures a mild treatment of the dental enamel.

Apart from the „wet“ toothpastes, there exist also „dry“ dental care products in tablet form. They have to be chewed before brushing and upon applying a soft toothbrush act as polishing agents. The tooth surface will be polished very softly, so that no deposits can be attached. These dental care products under the name of „Denttabs“ act upon the dental enamel similar to a lotus effect. Neuburg Siliceous Earth already finds application also in this area.

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