CWK - *Köstrosol® for Polishing*

General

KÖSTROSOL is a colloidal solution of dispersed SiO_2 particles in water (colloidal silica). The particles are not visible to the naked eye, but are clearly identifiable under an electron microscope.

The colloidal silica is odourless, non-flammable, miscible with water in any ratio and is opaque to milky white in appearance.

Colloidal silica must be protected from frost since otherwise the silicic acid flocculates irreversibly, thus making the colloidal silica useless.

Frost-protected **KÖSTROSOL** should also be transported and stored in such a way that it is protected from frost. In contrast to *unprotected* colloidal silica this product can be thawed successfully after being affected briefly by frost.

The first two numbers of the nomenclature of **KÖSTROSOL** products denote the particle size in *nm* and the last two numbers denote the solid content in percent by mass.

Application

The **KÖSTROSOL** 3550 and 1540 used for this purpose are high purity colloidal 50% and 40% silica solutions respectively.

Their applications extend from mineralogy to the electronics industry, wherever high purity and excellent surface quality is required.
In fact, the products have long since established themselves in the semi-conductors industry for polishing doped and non-doped silicium or germanium wafers and for chip production (CMP process).

In mineralogy they are also used for polishing precious stones and semi-precious stones (SiO_2-based). Particular mention should be given to polishing sapphires, for example for high quality clock lenses.

SiO_2 is also used for the chemical-mechanical polishing of sapphire wafers as used for LED technology.

As a result of the selected medium particle size of 50 *nm* (3550) and 15 *nm* (1540), these colloidal silica types achieve good material removal capacities and also make it possible to produce extremely good surface finishes.

Grades 3550 and 1540 are compatible with selected polishing pads since it is only possible to achieve the required results by the correct combination of slurry and pad.

To increase the polishing speed, chemical additives can be added to the colloidal silica during the polishing process. However, it is recommended that a compatibility test be conducted after the chemical additive has been selected by adding the selected components to the colloidal silica and testing whether the colloidal stability is maintained or whether agglomeration or gelling occurs, which could reduce the quality of the end product.

Recommended products

KÖSTROSOL 3550.
KÖSTROSOL 1540

Safety data

Proportion of crystalline silica	None
Harmful, toxic, inflammable	No
Other data	See Material Safety Data Sheet

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Packaging, transport, storage

KÖSTROSOL is packed in 200 litre plastic barrels and in 1000 litre plastic containers. The product can also be delivered in tanker vehicles if the customer requires large quantities.
The product must be stored and transported in sealed and light-impermeable packaging at temperatures between 5 and 25°C. Colloidal silica products freeze in temperatures below 0°C, flocculate irreversibly when they thaw and are thus rendered useless.
It is possible to protect the colloidal silica products from the effects of frost by using an anti-freeze agent so that they can be thawed successfully after they have frozen briefly. Frost-protected colloidal silica products are only supplied if specially requested by the customer.

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