

Polishing without quartz

Quartz is very suitable as an additive in polishing compounds due to its sharp-edged crystals. However, mixtures containing quartz are considered hazardous to health under certain conditions. One polish manufacturer therefore offers polishing alumina (aluminum oxides) for all polishing applications that do not require hazard labeling. They are said to be in no way inferior in quality to the products containing quartz.

Rudi Messmer

Silicon oxide is the most common mineral in the earth's crust. There it occurs either in pure form as quartz or in countless rocks in the silica group of minerals. It is therefore not surprising that quartz is present in practically all mined, natural minerals in sometimes high concentrations. Among them are also minerals that are well suited for polishing, such as quartz powder or triple. Because of its high availability and sharp-edged crystals, quartz is very well suited for use in abrasives or abrasive brushing pastes. Triple, on the other hand, is softer and is used, for example, by manufacturers of fittings to polish brass or Zamak. Natural corundum, on the other hand, which is also frequently used, is a natural aluminum oxide and contains hardly any quartz. Both quartz powders and triples are hazardous to health if they contain at least 1% of particles with a maximum size of 2.5 µm.

Particles below this size can penetrate the lungs and cause severe damage. Mixtures containing quartz are therefore considered hazardous to health under the conditions mentioned. Activities in which employees are exposed to respirable dusts containing quartz are even classified as carcinogenic activities and processes. The supervisory authorities are therefore rightly focusing on these. Even polishing pastes in which these particles are bound in the grease base are considered a hazardous mixture and must be labeled accordingly.

Increase occupational safety or search for alternatives

As a result, every company using these materials is obligated under the Hazardous Substances Ordinance to carry out a substitution test and replace these polishes as far as possible with

mit products with a lower classification. If this is not possible, the classification of the hazardous substance will result in higher occupational health and safety requirements in order to limit the occurrence of dust containing quartz as far as possible. The hazard label on the polishing compound determines the safety measures to be taken in day-to-day operations: Either the user needs a protective mask at the polishing lathe or even, as is common in paint booths, an external breathing air supply via air hoses. The polishing specialist Menzerna has solved this problem in cooperation with manufacturers of industrial minerals. Today, for all polishing applications, polishing alumina (aluminum oxides) that do not require hazard labelling are available. This is especially true for applications where users have often preferred quartz because of its high cutting performance. In contrast to the natural

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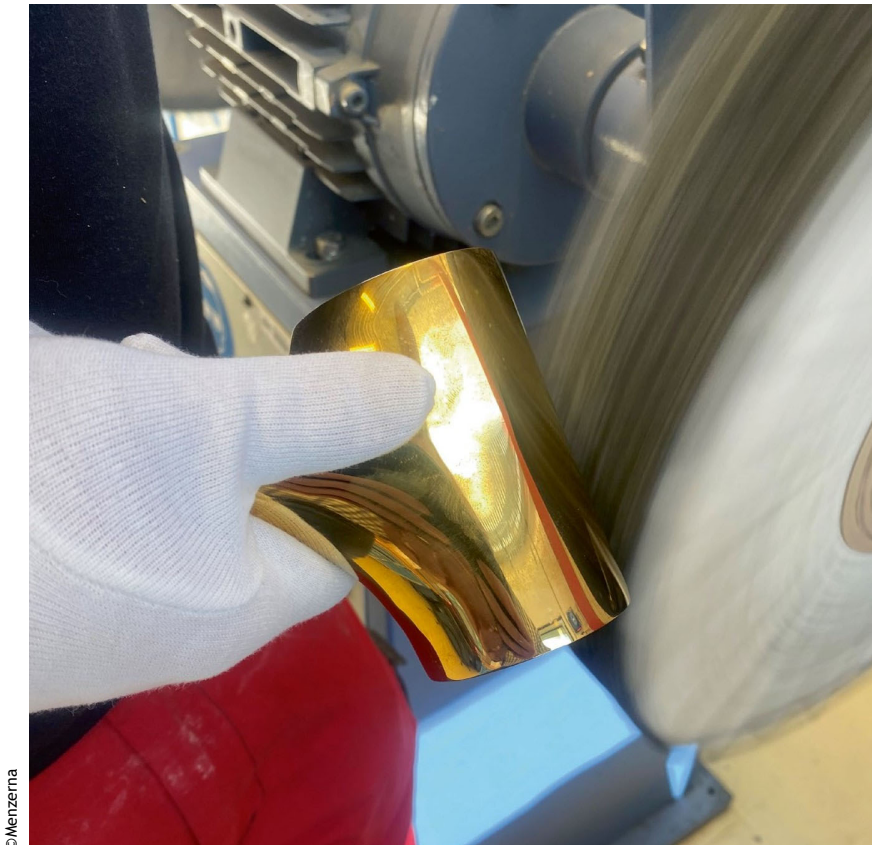
The hazard labeling on the polishing compound determines whether the user at the polishing lathe must wear a protective mask.



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For all polishing applications there are now also polishing clays that are not subject to labeling requirements.



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Armature on the polishing lathe: Triple is still a frequently used polishing mineral for brass, despite there now existing grade-free alternatives with better characteristics.

minerals quartz and triple, polishing alumina undergo a defined large-scale refining process. In this process, producers can control not only the fineness, but also the hardness and shape of the particles through thermal treatment (calcination) and the type of grinding. The result are consistently narrow particle size distribution curves.

High cutting performance without hazard labelling

In terms of cutting performance and surface finish, these powders are on a par with or even superior to quartz, but without the health risks mentioned above. Polishing pastes with these quartz substitute aluminas generally produce

the desired surface qualities in a shorter time or a better surface quality in the same time. The great advantage is that the new generation of pastes, in contrast to conventional quartz- or triple-containing formulations remains hazard label-free. As part of its sustainability strategy, Menzerna has for years been working systematically and proactively on the substitution of substances that are hazardous to health - both in production and in the products. For example, the company can offer odorless and non-hazardous paint polishes that do not contain volatile solvents. The long development work on polishing emulsions has also paid off: The new products contain only vegetable fats instead of animal fats. //

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