Product description

WACKER® TES 40 WN is an ethyl silicate providing approximately 41% of silicon dioxide (silica) upon complete hydrolysis.

Properties

WACKER® TES 40 WN contains many hydrolyzable ethoxy groups. For applications in which the inorganic SiO₂ is to be used as a binder, WACKER® TES 40 WN needs to be activated (see processing).

Special features

- storage-stable, low-viscous binder with a high silica content (41% SiO₂, fully hydrolyzed)
- liquid source of silica with a high flash point

Application

WACKER® TES 40 WN is used for the precipitation of silica upon complete hydrolysis. The SiO₂ coating firmly binds inorganic fillers and pigments and adheres well to different inorganic substrates like glass, ceramics or metal. Chemical and mechanical properties of the substrates can be improved by the thin SiO₂ film, which is also highly heat-resistant.

- binder for zinc-rich anti-corrosion paints
- binder for refractory fillers (production of ceramic shells and cores)
- precision casting
- coating material for pigments and fibers
- liquid source of SiO₂ as a (film-forming) binder
- crosslinking agent, e.g. for silicone elastomers
- sol-gel processes

Processing

Hydrolysis of WACKER® TES 40 WN induced by atmospheric humidity is too slow for most moisture-curing applications. It must be activated by:
- partial acid hydrolysis in an alcoholic co-solvent, for example by sulfuric acid
- catalysis, for example amines or titanates

Storage

WACKER® TES 40 WN must be stored in the tightly closed original container under exclusion of moisture.

The "Best use before end" date of each batch is shown on the product label.

Storage beyond the date specified on the label does not necessarily mean that the product is no longer usable. In this case however, the properties required for the intended use must be checked for quality assurance reasons.

Packaging

- 25 kg steel can
- 215 kg steel drum
- further packaging available on request

Safety notes

Comprehensive instructions are given in the corresponding Material Safety Data Sheets. They are available on request from WACKER subsidiaries or may be printed via WACKER web site http://www.wacker.com.
## Typical general characteristics

<table>
<thead>
<tr>
<th></th>
<th>Inspection Method</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td></td>
<td>colorless, clear</td>
</tr>
<tr>
<td>Color</td>
<td></td>
<td>max. 10 APHA</td>
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<tr>
<td>Density at 20 °C</td>
<td>DIN 51757</td>
<td>1.06 - 1.07 g/cm³</td>
</tr>
<tr>
<td>SiO₂-content</td>
<td></td>
<td>approx. 41 %</td>
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<tr>
<td>Acidity</td>
<td></td>
<td>max. 10 mg/kg</td>
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<tr>
<td>Hydrolyzable chloride</td>
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<td>max. 10 mg/kg</td>
</tr>
<tr>
<td>Flash point</td>
<td>DIN 51755</td>
<td>62 °C</td>
</tr>
</tbody>
</table>

These figures are only intended as a guide and should not be used in preparing specifications.