



— Processing guidelines —

**Adhesion promoter OrmoPrime08 for ORMOCER®s**

**Characteristics**

OrmoPrime08 is an adhesion promoter solution based on organofunctional silanes. It has been designed to enhance the adhesion of OrmoComp, OrmoStamp, OrmoClear, OrmoCore, and OrmoClad to various substrates, like silicon, glass and quartz and is provided as a ready-to-use solution for spin-coating.

**Physical data**

|   | <b>OrmoPrime08</b>       |
|---|--------------------------|
| Colour, appearance                            | colourless, clear liquid |
| Dynamic viscosity <sup>1</sup> [mPa s]        | 4.0 ± 1.5                |
| Refractive index n <sub>D</sub> <sup>25</sup> | 1.348 ± 0.001            |
| Filtration level [µm]                         | 0.1                      |

<sup>1</sup> -25 °C, 1000 s<sup>-1</sup>

**Ambient temperature and humidity**

Best coating results are obtained at temperatures of 20 – 25 °C and a relative humidity of 40 – 46 %.

**Processing conditions**

| <b>Process step</b>                            | <b>OrmoPrime08</b>        |
|--|---------------------------|
| <b>Dehydration bake of substrate</b>           | Oven at 200 °C, 30 min    |
| <b>Spin coating</b> <sup>1)</sup> [rpm]<br>[s] | 4000<br>60                |
| <b>Hard bake</b>                               | Hotplate at 150 °C, 5 min |
| <b>Film thickness</b> [nm]                     | 130 ± 15                  |

<sup>1)</sup> Uncovered spin coater

**Substrate preparation**

The silicon or SiO<sub>2</sub> substrates have to be free of impurities and moisture in order to achieve optimum adhesion of OrmoPrime08. The substrates should be baked at 200 °C and cooled to room temperature immediately before coating. Alternatively, oxygen or ozone plasma cleaning is recommended. Inappropriate processing can lead to unsatisfying quality and noticeable surface roughness of the OrmoPrime08 films.

This information is based on our experience and is, to the best of our knowledge, true and accurate. It should inform you about our products and their application processes. We don't guarantee special features of our products or use for a concrete process.



## Application of the adhesion promoter

### A. Coat

Uniform coatings are obtained by spin-coating of OrmoPrime08 solutions in the thickness range indicated in the spin curve. Please select the appropriate spin speed required for the desired film thickness. The information refers to an open spin-coating system.

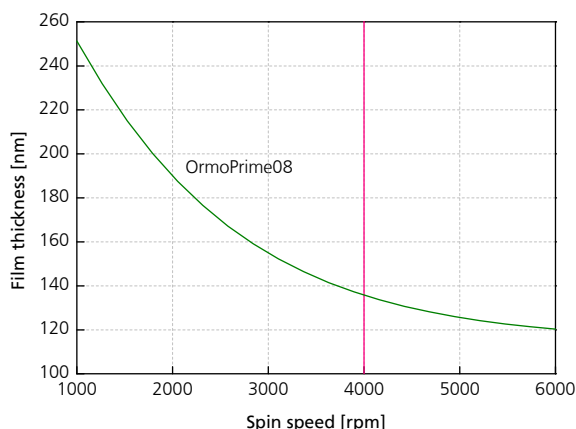


Figure 2: Spin curve (60 s spin time and 150 °C bake temperature)

### B. Bake

The spin-coated films are baked at 150 °C for 5 min on a hot plate and let cool down to room temperature. The OrmoPrime08 layer is cured by this treatment.

### Coating with ORMOCER®s

ORMOCER®s can be applied to the substrates pre-treated as described above according to the respective processing guidelines without any waiting period. The substrates coated with OrmoPrime08 should no longer be stored than 24 hours before applying the ORMOCER®s .

### Removal

Residue-free removal of OrmoPrime08 films from a substrate is preferably achieved applying wet-chemical etching using piranha solution or plasma etching with fluorine-containing plasma gases (e.g.  $O_2/CHF_3$ ). Residues would be left on the substrate after treatment with pure oxygen plasma, since OrmoPrime08 contains silicon.

### Storage

Storage at temperatures of 10 – 25 °C is recommended. Storage in a refrigerator is not required. Keep OrmoPrime08 bottles closed when not in use. Under these conditions, a shelf life of 6 months from the date of manufacture is ensured.

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## Disposal

Dispose waste according to your national regulations for halogen free organic solvents.

## Environmental and health protection:

Ensure that there is adequate ventilation while working with the chemicals. Avoid contact of OrmoPrime08 with skin and eyes and breathing of vapours of the solution. Wear suitable protective clothing, safety goggles and gloves.

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