

X-mas news

New Products and Applications 2006

mr-UVCur06



sub-30 nm resolution lines
(Courtesy of AMO, Germany)

Fast curing polymer for UV-based nanoimprint lithography.

The **new UV-NIL polymer** has been designed for the fabrication of nanostructures and pattern transfer. It is applied by spin-coating giving 150 – 500 nm films with excellent quality and uniformity. The low viscosity of **mr-UVCur06** enables fast filling of the mould cavities and very thin residual layers. Curing at low UV doses reduces the imprint cycle times to a minimum. Pattern sizes from sub-30 nm to several microns can be simultaneously imprinted with a high pattern transfer fidelity.

Ormocomp-crystal clear

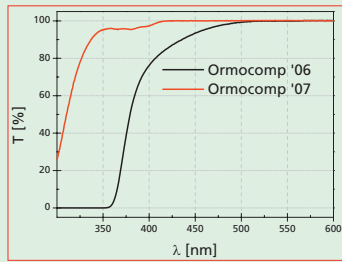


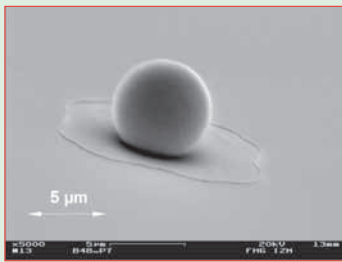
Fig.1 Ormocomp's transmission curves

Ormocomp, the trusted product from the Ormocer®s family, doesn't exhibit yellowing any more.

Inspired by some suggestion from the side of customers, a research project has been started. It has resulted in new outstandingly transparent **Ormocomp** (Fig.1 - black – former composition, red – present composition with much higher transparency in the UV wavelengths region from 400 nm). By winning the transparency, the material does not lose any of its desired and appreciated properties: thermal and chemical stability, as well as **Ormocomp's** processability stays unchanged.

The new product will be available from the beginning of January 2007, **under the same name**.

ma-N 400/ ma-N 1400

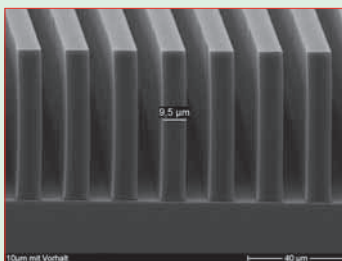


Au/Sn bump, 7-8 µm diameter, manufactured with ma-N 400, PVD and lift-off

ma-N 400/ ma-N 1400 - single layer negative photoresists for lift-off processes.

During a joint project we have successfully demonstrated the suitability of our conventional single-layer negative photoresists, e.g. **ma-N 400** for the manufacture of 7-8 µm diameter, lead-free Au/ Sn lot bumps, solderable at a temperature of 280 °C via PVD and lift-off processes. Both resist series can be used in the thermally stressing PVD process by applying a stabilization bake or a flood exposure, and can be lifted-off residue-free after the pattern transfer process.

XP mr-P 80 AV



FT/ d = 60 µm, L/S 10 µm

High viscosity resist for pattern transfer processes at room temperatures.

During a research project we have developed a high viscosity, chemically amplified positive photoresist for patterning film thicknesses of up to 50 µm: **XP mr-P 80 AV**. Its patterns exhibit nearly vertical side walls with 89 ° edge steepness and an aspect ratio of up to 8. By applying a "top coat", i.e. a protection layer directly on top of the resist surface, the material becomes insensitive to undesired components (e.g. amines) of the ambient atmosphere. Pattern transfer processes, e.g. electroplating, should preferably be carried out at room temperature, since a tendency of crack formation is observed with big temperature differences during pattern transfer processes. The transferred metal pattern exhibits very good quality nevertheless.