*Innovation*
*Creativity*
*Customer-specific solutions*

# Thermostable Negative Resist SX AR-N 4810/1



## PMMA negative photoresist for applications in the BB-UV range

Experimental sample/custom-made product

### 1. General Description

SX AR-N 4810/1 is a negative chemical amplified photoresist (CAR) based on PMMA. This resist can thus be developed in anhydrous solvents and is particularly suitable for the processing of substrates which are sensi-tive to water or moisture and have to be handled without any contact with water. The resist structures show a high thermostability up to about 280°C.
The resist is composed of polymethylmethacrylate (PMMA), a photoactive compound (organic acid genera-tor) and amine components in Anisole. Viscosity: 9.4 mPas at 20°C.

### 2. Processing

Before handling, the resist has to be adapted to the temperature of the (preferably air-conditioned) working area (recommend is a range of 20 - 25 °C at a relative humidity of 30 - 50 %). The resist is applied under yellow save light using a spin coating procedure. The following layer thickness values can be obtained: 0.65 µm at 1.000 rpm, 0.48 µm at 2.000 rpm, and 0.32 µm at 4.000 rpm.
The spin coated substrates should be baked on a hot plate (85 + 1.0 °C, 3 min) or in a convection oven at a temperature of 85 + 1.0 °C for 30 minutes. Higher soft bake temperatures should be avoided.
The exposure has to be optimised for the equipment used, requiring respective tests. The spectral range for the exposure is approximately 230 - 440 nm. After the exposure a cross-linking bake at 95 °C up to 105 °C for 30 min in a convection oven or 5 minutes on a hot plate is recommended. Higher post exposure bake temper-atures increase the sensitivity and reduce the developing speed.
The development of the exposed resists is carried out with the water-free Developer X AR 300-74/1 (main component ethyl benzene) using immersion development for 30 - 60 s at approx. 21 °C.
Subsequently, the resist is rinsed for 30 s with the stopper X AR 600-60/1 (octane based) or alternatively with heptane or hexane. Immediately after rinsing, the resist layers have to be dried for 30 min at approx. 80 °C in a convection oven or 5 minutes on a hot plate.

### 3. Cleaning, Removal and Waste Water Disposal

Solvent mixtures such as the Thinner AR 600-02 and the Remover AR 300-76, AR 600-70 and AR 600-71 are recommended for the cleaning of substrates and equipments and for the removal of layers. Liquid or solid wastes have to be disposed of at controlled landfills or by controlled combustion in officially authorized plants.

### 4. Safety References

Resist, thinner and remover contain organic solvents, requiring adequate ventilation in the working area. Avoid direct contact with products and their vapours! Wear safety glasses and protective gloves! Please ask for our safety data sheet.

As of: December 2016