

NANOCRYL® P 295

NANOCRYL® P 295 is an especially purified dispersion of colloidal silica in a tetrafunctional polyether acrylate for the use in high performance applications. The silica phase consists of surface-modified, synthetic SiO₂-spheres of very small size (Ø 20 nm) and narrow particle size distribution. Despite the high SiO₂-content of 50 wt%, NANOCRYL® P 295 is highly transparent, low viscous and shows no sedimentation due to the agglomerate-free dispersion of the nanoparticles in the acrylate.

Technical data (no specification)

Property	Units	Typical Values
Base acrylate		alkoxylated (4) pentaerythritol tetraacrylate
Appearance		clear, slightly yellow liquid
SiO ₂ -content	[wt%]	~ 50
Density @ 20 °C	[g/ml]	~ 1.3
Viscosity @ 25 °C	[mPas]	~ 2 500
Shelf life	[months]	6*

*if stored in the original unopened container

Processing Instructions

NANOCRYL® P 295 can be used as any common UV-curable acrylate. However, the compatibility between NANOCRYL® P 295 and all other components should be tested separately before starting formulation development. The colloidal silica in NANOCRYL® products tends to agglomerate if the stabilisation is affected by inappropriate formulation components like hydrocarbon solvents (e.g. xylene) or certain performance additives (e.g. several silicones or amines). A technical information leaflet "Suitable Additives for NANOCRYL®-Formulations" is available on request.

The required total silica content in the ready formulation is dependent on the desired product properties. Generally speaking, good scratch- and abrasion resistance increases proportionally to the silica content. As a result, as high a SiO₂ content as possible is recommended (15 to 20 wt%, corresponding to 30 to 40 % NANOCRYL® P 295) for first screening tests. The optimum content should then be determined through systematic tests.

Handling and Storage

NANOCRYL® P 295 should be handled in accordance with good industrial practice. Detailed information is provided in the Material Safety Data Sheet.

NANOCRYL® P 295 is hygroscopic. Therefore keep container tightly closed when not in use! The product may polymerise under improper storage conditions. Store below 30 °C.

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