Product Information

NANOCRYL® D 322

Nanosilica – UDMA in TRGDMA – Composite

PRODUCT DESCRIPTION

NANOCRYL® D 322 is a 50 wt% dispersion of colloidal silica in a difunctional methacrylate blend (80% UDMA in TRGDMA), for the use in dental applications. The silica phase consists of surface-modified, synthetic SiO2-nanospheres of very small size (Ø 20 nm), and narrow particle size distribution.

Despite the high SiO2-content NANOCRYL® D 322 is transparent, low viscous and shows no sedimentation due to the agglomerate-free dispersion of the nanoparticles in the monomer.

Typical Properties		
Property	**Unit**	**Value**
Appearance		clear, slightly yellow liquid
Base Acrylate		UDMA 80% in TRGDMA
Density at 20 °C	g/cm^3	1.3
Viscosity at 25°C	mPa·s	10000

The data represents typical values (no product specification)

TYPICAL APPLICATIONS

NANOCRYL® D 322 can be used as any common UV-curable acrylate. However, the compatibility between NANOCRYL® D 322 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).

Product Composition		
Product Composition	**Unit**	**Value**
Silicon Dioxide (SiO$_2$) Content	wt%	48-52

The data represents typical values (no product specification)

BENEFITS & ADVANTAGES

- Suitable for dental applications
- Enables extremely high loading levels in combination with suitable micron particles
- Significantly improved tear resistance, fracture toughness and modulus
- Lower CTE, reduced shrinkage & thermal expansion
- UV-curable

HANDLING & PROCESSING

The rules and regulations for the handling and use of chemicals have to be observed. Please refer to the Material Safety Data Sheet for further details.

PACKAGING

5 kg canister, 25 kg pail

STORAGE

Storage dry and dark, up to 30°C (86 °F) in sealed containers.

NANOCRYL® D 322 is hygroscopic. Therefore, keep container tightly closed when not in use! The product may polymerise under improper storage conditions.

SHELF LIFE

6 months in originally sealed containers.

The shelf life period can be subject to prolongations based on reapprovals in accordance with the established Evonik ISO 9001 quality management process.

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HAZARDOUS SUBSTANCE

Information concerning

- Classification and labelling according to regulations for transport and for dangerous substances
- Protective measures for storage and handling
- Measures in case of accidents and fire
- Toxicity and ecological effects

is given in our material safety data sheets.

REGISTRATION LISTING SUMMARY

The relevant components of NANOCRYL® D 322 are listed/registered or exempt in the following chemical inventories.

Registration Listings	
Registry	Status
Canada (DSL)	Yes
China (IECSC)	Yes
EU (EINECS/ELINCS)	Yes
South Korea (TCCL)	Yes
Taiwan (TCSI)	Yes
USA (TSCA)	Yes

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