Product Information

NANOPOX® A 610

PRODUCT DESCRIPTION

NANOPOX® A 610 is a high performance, versatile, silica reinforced cycloaliphatic epoxy resin for the use in adhesives. The silica phase consists of surface-modified synthetic SiO2 nanospheres of very small size (average diameter of 20 nm) with a narrow particle size distribution (maximum diameter 50 nm).

Despite the high SiO2 content of 40 wt%, NANOPOX® A 610 has a comparatively low viscosity due to the agglomerate-free colloidal dispersion of the nanoparticles in the resin.

Typical Properties

Property	Unit	Value
Appearance		clear liquid
Base Resin		cycloaliphatic epoxy resin
Density at 20 °C	g/cm³	1.35-1.45
Epoxy Equivalent Weight	g/eq	200-240
Viscosity at 25°C	mPa·s	1000-4000

The data represents typical values (no product specification)

TYPICAL APPLICATIONS

NANOPOX® A 610 is a versatile dispersion of colloidal silica in cycloaliphatic epoxy resin (EEC) for the use in free flowing, low viscosity adhesives. It enables highly filled, highly transparent adhesives and improves mechanical properties, such as fracture toughness, impact resistance and modulus. Further more it reduced cure shrinkage & thermal expansion. It can be cured cationically and is often used in medical and/or optical clear adhesives.

Product Composition

Product Composition	Unit	Value
Silicon Dioxide (SiO_2) Content	wt%	38-42

The data represents typical values (no product specification)

BENEFITS & ADVANTAGES

- Improved modulus and flexural strength, increase in toughness and compressive strength
- Enables extremely high loading levels in combination with suitable micron particles
- Lower CTE, reduced shrinkage
- Very low viscosity, thus suitable for injection and spray processes
- Improved surface quality, no fiber-printthrough (Class A)
- Suitable for underfill applications
- Nanoparticles do not sedmentate and stabilze co-fillers
- UV-curable

HANDLING & PROCESSING

NANOPOX® A 610 can be used as any other cycloaliphatic epoxy resin. However, the colloidal silica in NANOPOX® 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)..

Therefore the compatibility between NANOPOX® A 610 and all other formulation components should be tested separately before starting formulation development.

NANOPOX® A 610 should be handled in accordance with good industrial practice. Detailed information is provided in the Material Safety Data Sheet.

STORAGE

Keep container(s) tightly closed when not in use! The product may polymerise improper storage conditions. Store below 30°C.

If stored at 2°C to 8°C, shelf life can be significantly prolonged.

SHELF LIFE

3 month if stored in the original unopened container.

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

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 NANOPOX® A 610 are listed/ registered or exempt in the following chemical inventories.

Registration Listings	
Registry	**Status**
Canada (DSL)	Yes
China (IECSC)	Yes
EU (EINECS/ELINCS)	Yes
Japan (ENCS)	Yes
Taiwan (TCSI)	Yes
USA (TSCA)	Yes

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