



THE CARBON NANOTUBE SPECIALIST

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EPOCYL

Ref: EPOCYL™ NC E128-02 – 17 March 2009 - V04

EPOCYL™ NC E128-02 Product Data

Master Batch Liquid Bisphenol-A Resin for non-Solvent Based Formulation Purposes.

General information

Description

EPOCYL™ NC E128-02 is a Master Batch based on liquid Bisphenol-A (Bis-A) epoxy resin containing high concentration of Carbon Nanotubes (CNT) produced by Nanocyl. It is specifically developed to enhance electrical conductivity of epoxy-based formulations. Feature easy integration and great flexibility in design of new multifunctional materials. Dilution factor has to be calculated accordingly to the desired level of conductivity.

Applications

- Electrostatic discharge (ESD) coatings, linings (tanks, rollers, ...) and composites
- Conductive primers
- Resistive inks
- Adhesives

Benefits

- Limited impact on base resin mechanical and thermo-mechanical properties
- Ease of formulation
- Other information available upon request

Nanocyl S.A.

Rue de l'Essor 4 Tel +32 71 750 380
B-5060 Sambreville Fax +32 71 750 390
BELGIUM sales@nanocyl.com

US contact

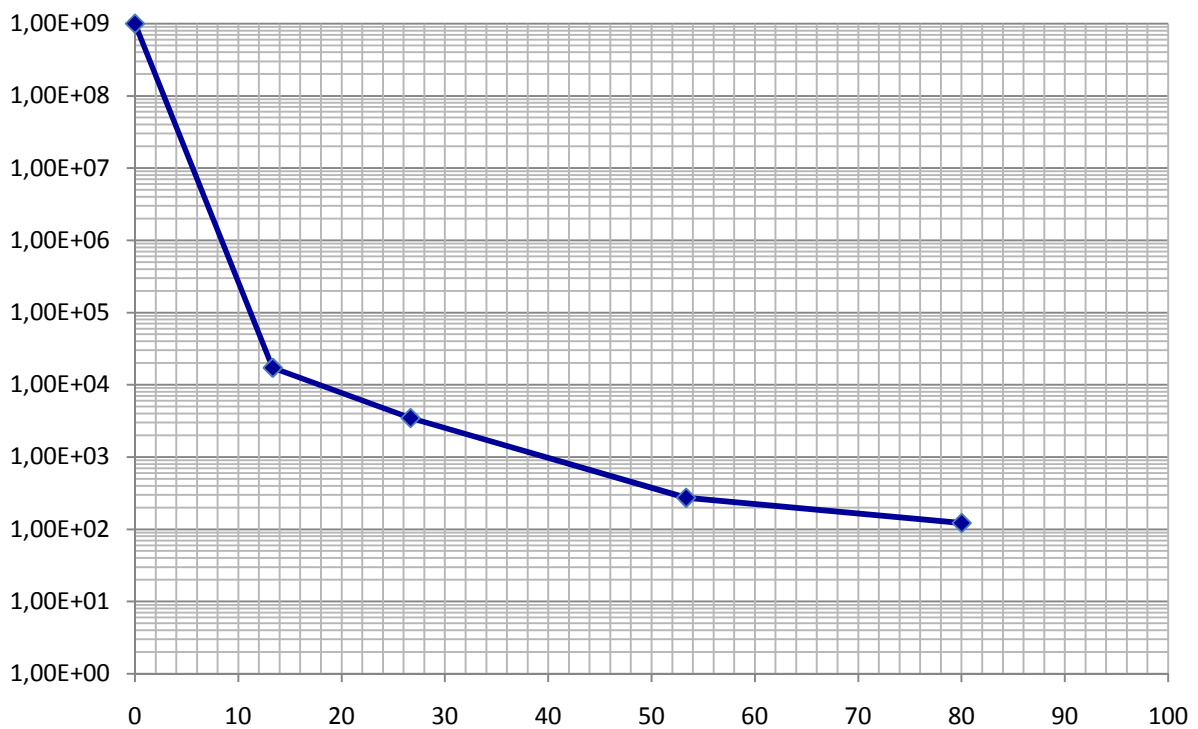
info-us@nanocyl.com

www.nanocyl.com

Typical properties of EPOCYL™ NC E128-02

Aspect:	Paste, black (Master Batch)
Viscosity @ 25 °C:	400 ± 50 Pa.s
Epoxy Value:	5.05 – 5.25 eq/kg
Epoxy Equivalent:	190.5 – 198.0 g/eq
Density at 25 °C:	1.15 – 1.20 g/ml
Storage temperature:	5 – 40 °C

Electrical percolation



**Fig 1 : Resistivity (ohm.cm) Vs. Parts of NC E128-02 in the final compound (100 parts in total).
Properties measured on cast films.**

Curing agents

EPOCYL™ NC E128-02 based formulations can be cured or cross-linked with different types of curing agents which could be decided accordingly to the desired processing conditions and the properties of the final composite like any conventional Bis-A based formulations.

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Guide to processing and to create a formulation based on EPOCYL™ NC E128-02

To achieve the required level of conductivity, it is recommended to observe the ratios described in fig.1. Number of parts of masterbatch is in these curves expressed in function of the final resin formulation (resin & hardener).

For example: [EPOCYL™ NC E128-02 (17 %)] + [Neat resin + hardener + other additives (83 %)].

Mixing conditions

The Master Batch EPOCYL™ NC E128-02 is recommended to pre-mix (eventually increasing the temperature between 45 and 60 °C to reduce its viscosity) before start introducing it into any formulation.

The Master Batch EPOCYL™ NC E128-02 could be mixed very easily with any liquid resins at room temperature (RT). If there is any solid resin/component part of final formulation (for example solid epoxies), EPOCYL™ NC E128-02 could be heated until it is nicely flowing melt (between 45 and 60 °C) and thereafter the other resin components can be added to EPOCYL™ NC E128-02 (not vice versa). When adding the different components, the more viscous must added first then the other components. Time, temperature and speed of the mixing may need to be adapted to reach a final homogenous mix. All common equipments available in any resin formulation, paint manufacturing and composite facilities can achieve a good and homogeneous mixture.

IMPORTANT: EPOCYL™ NC E128-02 IS NOT DESIGNED TO BE USED WITH SOLVENT.

The resin formulation must then be allowed to cool down.

Hardener must be added accordingly to your conventional processing conditions. The amount of hardener required will depend on the final epoxy equivalent weight (EEQ) of the formulation.

Important

All information is believed to be accurate but is given without acceptance of liability. Users should make their own assessment of the suitability of the product for their use and applications.

For technical assistance, sales or further information, please contact us:

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