



THE CARBON NANOTUBE SPECIALIST

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EPOCYL

*Ref: EPOCYL™ NC E128-04 – 17 March 2009 - V04*

## **EPOCYL™ NC E128-04 Product Data**

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

### **General information**

#### **Description**

EPOCYL™ NC E128-04 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 for solvent based formulations to enhance the electrical conductivity of final epoxy formulations. Special features include easy integration and great flexibility in processing. 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

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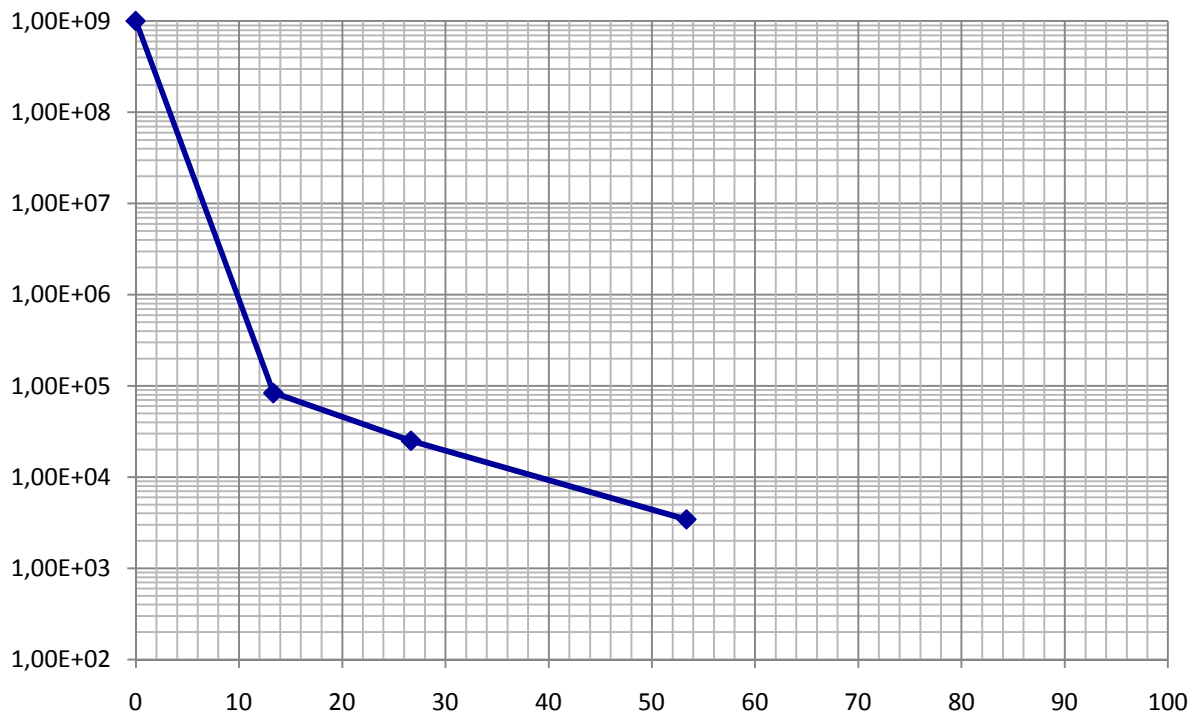
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**Typical properties of EPOCYL™ NC E128-04**

Aspect:	Paste, black (Master Batch)
Viscosity @ 25 °C:	35 ± 10 Pa.s
Epoxy Value:	4.91 – 5.10 eq/kg
Epoxy equivalent:	196.1– 203.52 g/eq
Density at 25 °C:	1.15 – 1.20 g/ml
Storage temperature:	5 – 40 °C

**Electrical percolation**



*Fig1 : Resistivity (ohm.cm) Vs. Parts of NC E128-04 in the final compound (100 parts in total).  
Properties measured on cast films.*

**Curing agents**

EPOCYL™ NC E128-04 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 E128-04

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 E128-04 (17 %)] + [Neat resin + hardener + other additives (83 %)].**

### Mixing conditions

The Master Batch EPOCYL™ NC E128-04 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.

First, prepare a good premix of your neat resin with additives and the required amount of solvent. Then, add the required amount of the Master Batch EPOCYL™ NC E128-04 with a continuous mixing. After this step, if needed, you can further adjust the viscosity by adding more solvent in the mixture with a continuous mixing process. Time, temperature and speed of the mixing may need to be adapted to obtain a final homogenous mixture. All common equipments available in any resin formulation, pre-preg and composite facilities are good to achieve a good and homogeneous mixture.

**IMPORTANT: EPOCYL™ NC E128-04 IS DESIGNED ONLY FOR FORMULATING SOLVENT BASED FORMULATIONS.**

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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