

GRAPHISTRENGTH[®] C M12-30

CNT THERMOPLASTIC MASTERBATCH

TECHNICAL DATA SHEET

Description:

Graphistrength[®] C M12-30 is a multipurpose masterbatch that contains perfectly dispersed multi-wall carbon nanotubes (MWNT) at a very high concentration of 30% by weight.

Graphistrength[®] C M12-30 is widely compatible with numerous thermoplastic matrices in which it can be easily diluted. Thanks to this outstanding feature, Graphistrength[®] C M12-30 is as versatile as the MWNT powders in its use but without any restrictive conditions in its handling.

Graphistrength[®] C M12-30 is suited for the production of high performance engineering plastics intended for use in electrostatic discharge (ESD) protection.

Key features:

Graphistrength[®] C M12-30 is provided in pellet form with the following key characteristics:

Property	Method	Unit	Typical value ⁽¹⁾
Aspect	Visual		Black
MWNT content		wt%	30.0 ⁽²⁾
Moisture content	Karl-Fisher	wt%	0.05 -0.10

⁽¹⁾ Data not intended for specification purposes

⁽²⁾ Graphistrength[®] C M12-30 contains Graphistrength[®] C100 MWNT with purity > 90 %

Applications and benefits:

Graphistrength[®] C M12-30 is generally diluted in various thermoplastics. Typical final MWNT loadings in the final compounds are in the range 0.5 to 5.0 wt% depending on the host matrix characteristics, the targeted performances, processing methods and conditions.

The typical electrical resistivity that can be achieved is in the range $10^1 - 10^8$ ohm.cm. The ESD properties obtained with Graphistrength[®] C M12-30 are outstandingly consistent and uniform.

Thanks to its unique chemical composition, Graphistrength[®] C M12-30 offer several additional advantages: compatibility with numerous thermoplastic matrices, smooth surface aspect, low increase in density and, high preservation of the neat matrix's ductility and mechanical properties. With low particulate generation, final compounds based on Graphistrength[®] C M12-30 are also ideal materials for applications where cleanliness is key.

Graphistrength[®] C M12-30 is particularly suited to electronic applications (semi-conductors and ESD-sensitive components handling, housings of electronic devices), industrial and automotive applications.

Compatibility of Graphistrength[®] C M12-30 with thermoplastics:

Graphistrength[®] C M12-30 is compatible with amorphous, semi-crystalline and crystalline resins. It can be diluted in PC, polyester thermoplastics (PET, PBT, etc), polyamide thermoplastics (PA6, PA6.6, PA11, PA12, etc), polyphthalamide thermoplastics (PPA), acetals (POM), PVDF, ABS and PMMA.

Dilution and processing:

The dilution of Graphistrength[®] C M12-30 into high quality compounds can be achieved with standard equipment used in thermoplastics compounding such as twin-screw extruders. In some cases, optimizing process conditions may be necessary to get well-dispersed compounds. More information is provided in our *Dilution Guide of Graphistrength[®] Thermoplastic Masterbatches*.

Graphistrength[®] C M12-30 can be processed within the temperature range 150 to 380 °C. The temperature selection mostly depends on characteristics of the host thermoplastic matrix that is used for diluting Graphistrength[®] C M12-30.

The final compounds based on Graphistrength[®] C M12-30 can be processed on most equipment (extrusion, blow molding, injection molding, melt spinning)

Packaging and Storage:

Graphistrength[®] C M12-30 is provided in lined bags of 5 kg or 25 kg net. The product is indefinitely stable in its unopened original packaging when stored at normal temperatures.

No additional drying is needed if the product is stored in its original packaging.

Safety and Handling:

Graphistrength[®] C M12-30 is provided in pellet form where MWNT are strongly embedded.

Graphistrength[®] C M12-30 doesn't present any specific health risk when using in thermoplastic processing. Consult the product MSDS for additional information on properties, hazards and handling.

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