

PRODUCT DATA SHEET

GRAPHENE-POLYCARBONATE MASTERBATCH

2D fab PC masterbatch (PC-fabMB-5; graphene content 5 wt%) can be incorporated into products based on Polycarbonate (PC) ranging from advanced products in automotive to helmets, bullet proof shields and more.

Adding a small amount of **PC-fabMB-5** to your standard polycarbonate delivers:

- 10-50% improvement for most mechanical properties
- At least 40% improvement in thermal efficiency for more efficient manufacturing
- Better coefficient of thermal expansion

Processing

The solid pellet master batch is ready to be processed by employing injection molding or extrusion processes. The standard loading of 0.5-2.0 wt% of **PC-fabMB-5** in the final recipe results into enhanced mechanical properties without significant rise in the total manufacturing cost. Moreover, improved thermal conductive of the melted graphene-polymer mixture results in shorter cycle-time during molding.

Typical process conditions of graphene enhanced polycarbonate are set similar to the process conditions of the base polymer. A typical example for Injection Molding:

Injection molding (Polycarbonate)

PROPERTIES	VALUE	UNIT
Drying Temperature	120	°C
Drying Time	3-4	hrs
Drying Time (Cumulative)	48	hrs
Maximum Moisture Content	0.02	%
Melt Temperature	219-315	°C
Nozzle Temperature	290-310	°C
Front - Zone 3 Temperature	295-310	°C
Middle - Zone 2 Temperature	280-305	°C
Rear - Zone 1 Temperature	215-295	°C
Mold Temperature	70-95	°C
Back Pressure	0.3-0.7	MPa
Screw Speed	40-70	rpm



Graphene masterbatch



Graphene masterbatch mixed with polycarbonate

**DO YOU WANT TO
KNOW MORE?**

Send us an e-mail:
info@2dfab.se

Visit our website:
2dfab.com

