

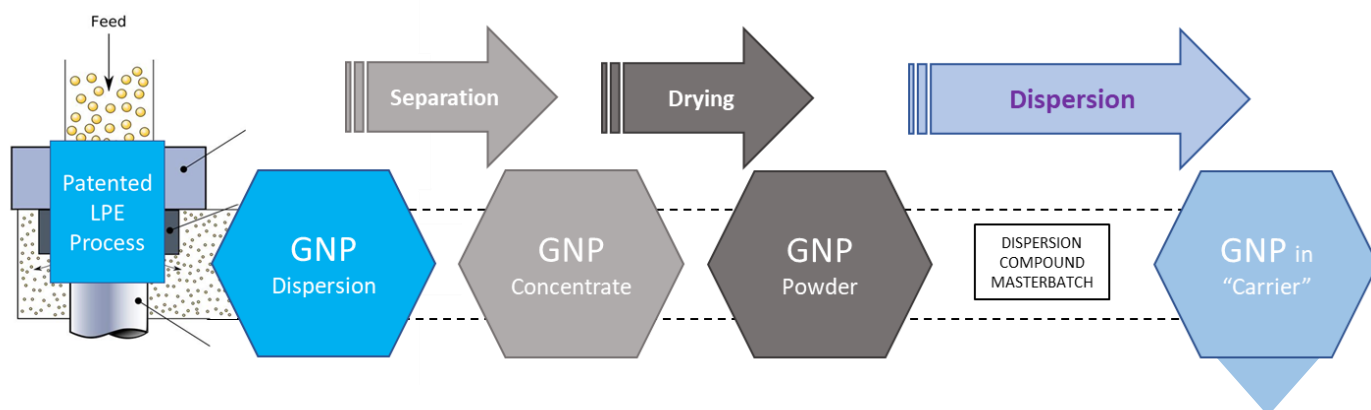
Technical Data Sheet

Product Name	GEM N28M
Product Code	GMB1528-N28M
Description	GraphCore™ 01 GEM 10% in PET(N28M)
Form	MB—10% in PET
Issue Date	V1—July 01, 2024

Black Swan Graphene Inc. (“Black Swan”) (TSX-V: SWAN) (OTCQB: BSWG) (Frankfurt: R96), is focused on the large-scale production and commercialisation of patented high-performance and low-cost graphene products aimed at several industrial sectors, including concrete and polymers. Black Swan is a global leader in the development and supply of graphene nanoplatelets (GNP) for use in new and emerging technologies.

GEM N28M (GMB1528-N28M) is a member of the **GraphCore™ 01** Family of graphene nanoplatelets. It is supplied in masterbatch form as 10% loaded in polyethylene terephthalate (PET). The product is manufactured using patented liquid phase exfoliation process incorporating ~3%wt non-ionic surface agent, and compounded using twin-screw extrusion.

The ISO-standard manufacturing process uses a carefully selected graphite being dispersed in a liquid medium (typically water) using our surface chemistry know-how. Our manufacturing process yields reliable quality GNPs in dispersion, powder or masterbatch forms.



MASTERBATCH	
Product Code	GMB1528-N28M
Surface agent	Non-ionic on GNP
Form	MB—10% in PET
Colour	Black

Product Code	GMB1528-N28M
Description	GraphCore™ 01 GEM 10% in PET(N28M)
Form	MB—10% in PET

Nominal Composition: Graphene Enhanced Masterbatch

Graphene Content:	10%
Polymer Carrier:	PET
Additives:	None

General

GMB1528-N28M is a concentrate of Graphene nano platelets (10%) designed to be dosed at 5-20% in the final product.

Designed for use in moulding and extrusion, based on a general-purpose polyethylene terephthalate (PET)

Possible to increase in some mechanical properties of PET and rPET articles by up to 10%.

It is recommended to conduct a ladder study in order to evaluate the end user performance requirement.

Typical processing temperatures are 250 – 300 °C.

Specification

Properties	Test Method	Units	Limits
Loading	TGA Under Nitrogen	%	9 - 11
Filter Dispersion	Internal method	---	Max 30
Melt flow index	BS2782:720A 5kg at 190°C	g/10 min	TBC
Moisture Content	Weight loss at 105°C at time of packing	%	Max 0.2

Packaging

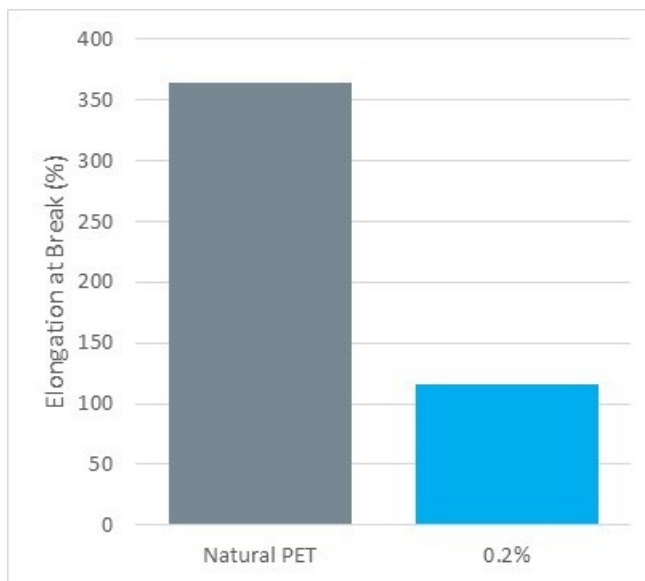
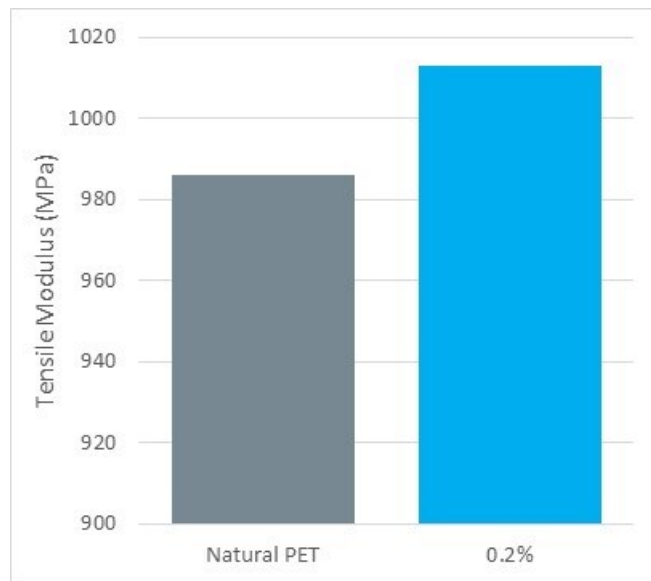
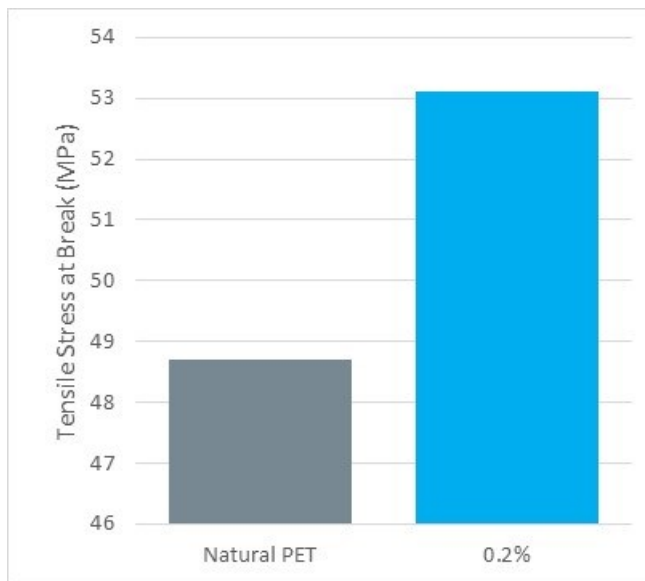
Black Swan **G**raphene **E**nanced **M**asterbatches are typically available in sealed 25kg Polyethylene Bags. Other forms are available on request and include bulk packaging such as Big Bags, Octabins and Tankers

GEM Products must be stored in cool dry conditions.

Product Code	GMH1528-N28M
Description	GraphCore™ 01 GEM 10% in PET(N28M)
Form	MB—10% in PET

Material property improvements

Polymers reinforced with our GNP (graphene nanoplatelets) show significant potential for lightweighting, barrier characteristics, and impact resistance. Black Swan offers cost-effective and high-performance polymer-based products, including sustainable EV solutions and other industrial applications.



Properties

When diluted with virgin and recycled PET, GMB1528-N28M can improve tensile and flexural characteristics.

The recommended dosage is <10% (equal to 1% GNP loading). A ladder study may be necessary to optimise performance based on the properties needed.

Performance may differ based on the grade of polymer utilised.