

15th June 2021

Graphene polymer masterbatch launched to further open thermoplastics market

HIGHLIGHTS

- **PureGRAPH® Low Density Polyethylene masterbatch product line launched for easier dispersion into thermoplastics**
- **Designed to be used in existing injection moulding or extrusion production lines without modification**

First Graphene Limited (ASX:FGR; "First Graphene" or "the Company") is pleased to announce the release of a new masterbatch product designed for blending with a range of thermoplastic materials to enhance the mechanical and thermal properties.

PureGRAPH® MB-LDPE is a graphene-loaded low-density polyethylene (LDPE) masterbatch. It is provided in chip (pelletised) form and utilises First Graphene's few-layer, high-performing PureGRAPH® additives.

Designed primarily for use in polyolefin systems, including polyethylene and polypropylene, the product can be easily incorporated using standard processing techniques. It can also be used with polyamide and acetal polymers and is available in all platelet sizes and variable concentrations.

PureGRAPH® MB-LDPE complements First Graphene's range of Powder and AQUA additives and is the first product in the Masterbatch range. It can be tailored to individual applications or chemistries by adjusting the carrier and graphene type and concentration as required. Several other masterbatch options are currently in development and will be released in the near future.

Background on masterbatch materials:

A Masterbatch is a solid additive used in the plastics industry. It is a concentrated mixture of pigment, reinforcing material and/or other additives encapsulated within a suitable carrier resin, typically produced using extrusion technology. The mixture is then cooled before being fed into a pelletiser to be cut and formed into chips.



Figure 1 – PureGRAPH® products left to right; AQUA hydro-gel, high purity vein Graphite, standard vacuum sealed shipping pack, Powder and MB-LDPE Pellets.

ASX ANNOUNCEMENT



Michael Bell, Chief Executive Officer of First Graphene said: *"The LDPE masterbatch has been developed to provide customers with an off-the-shelf, pre-dispersed graphene/polymer carrier that is easy to mix with other polymer chips in existing plastic processing equipment, and will readily fit into existing plastic processing lines. It's the first of a series of masterbatch products that are being created to better disperse into materials and to accelerate both the testing and validation of PureGRAPH®, but also the sales cycle time to market."*

Investors

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About First Graphene Ltd (ASX: FGR)

First Graphene Ltd. is the leading supplier of high-performing, graphene products. The company has a robust manufacturing platform based upon captive supply of high-purity raw materials and an established 100 tonne/year graphene production capacity. Commercial applications are now being progressed in composites, elastomers, fire retardancy, construction and energy storage.

First Graphene Ltd. is publicly listed in Australia (ASX:FGR) and has a primary manufacturing base in Henderson, near Perth, WA. The company is incorporated in the UK as First Graphene (UK) Ltd. and is a Tier 1 partner at the Graphene Engineering and Innovation Centre (GEIC), Manchester, UK.

PureGRAPH® Range of Products

PureGRAPH® graphene powders and **PureGRAPH® AQUA** pastes with lateral platelet sizes of 50µm, 20µm, 10µm and 5µm, as well as **PureGRAPH® MB-LDPE** masterbatch for thermoplastics, are available in tonnage volumes. The products are high performing additives, characterised by their high quality and ease of use.

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With authority of the board, this announcement has been authorised for release by Aditya Asthana, Chief Financial Officer and Company Secretary.