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industry know-how

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One of the core values of Plastribution is its expertise – something that all of its suppliers and customers know they can rely on.

Industry know-how is a series of articles from Plastribution, exclusively available to the readers of Injection World and on its website www.plastribution.co.uk, that shares this expertise to provide essential background on some of the common terminology and practices used within the plastics industry.

Whether to cover gaps in knowledge where high levels are assumed, or to provide clarity where terms of reference have become confusing, Industry know-how aims to provide clear explanations and, where appropriate, thought leadership to support industry growth.

In this first article, it addresses the wide range of terminology relating to the classification of thermoplastic raw materials that has evolved over time, and Plastribution's approach towards transparency.

By definition, thermoplastics are a group of materials that can be repeatedly melted by the application of heat (or thermal energy), shaped into the required product, part or component, and 'frozen' to retain that shape through sufficient cooling. This process leads to a thermoplastic having a 'thermal history'.

Because thermoplastics can be reshaped upon reheating a number of times, they are considered to be recylcable. Yet thermoplastics also demonstrate varying degrees of thermal instability.

Particularly at temperatures where they begin to melt or soften, thermal degradation of the polymer can start to affect its properties, with this rate of change increasing further if shear is also applied.

For the moulder this means that great care should be taken in selecting the correct quality of material for a specific application, where, for instance, a prime grade of material may be preferred to ensure the delivery of properties as specified on data sheets.

This particularly applies to plastic components that are exposed to hostile environments including contact with chemicals and at elevated temperatures.

Care should also be taken with materials containing additives such as fillers (see separate Industry know-how fact sheet on 'Regrind Guidelines')

For various reasons a wide range of terminology has evolved to describe the quality of the original polymer and materials that have been recovered or recycled. As can be seen from the table, this can lead to confusion.

Moreover, an increase in both consumer pressure and government legislation has promoted the use of recycled plastics, and more specifically recycled post-consumer waste, thereby adding to the list of materials available to choose from.

PLASTRIBUTION TERMINOLOGY	INDUSTRY TERMINOLOGY
Prime	Virgin, Prime
Prime Compound	Compound
Off Grade	Wide-spec, Off Grade, Near to Prime, Second Quality, Second Choice
Off Grade Compound	Industrial
Post-consumer waste	Repro, Reprocesses, Recycled, Reclaimed, Re-engineered
Pre-consumer waste	Industrial, Repro, Recycled, Re-engineered
Prime + Post-consumer Waste	Repro, Blended, Industrial, Recycled Content
Prime + Pre-consumer Waste	Repro, Industrial, Blended, Recycled Content
Off-Grade + Post-consumer Waste	Repro, Blended, Industrial, Recycled Content
Off-Grade + Pre-consumer Waste	Repro, Industrial, Blended, Recycled Content

On the basis of the vast range of classifications currently used, Plastribution has chosen to employ simpler and clearer terminology for greater transparency:

Prime
As it comes from the polymerisation plant, and within a published specification.

Off Grade
As it comes from the polymerisation plant, but does not conform to a published specification.

Compound
Material within which additives have been incorporated by means of a compounding process.

Pre-consumer Waste
Thermoplastic material that is a waste by-product of an industrial process.

Post-consumer Waste
Thermoplastic material which has been recovered from a consumer item that has reached the end of its intended use.

In the event that you require further information, or need to comply with specific requirements in terms of post-consumer waste concentration, please do not hesitate to contact a member of the Plastribution team for further information on 0845 3454560 or sales@plastribution.co.uk.

Plastribution is the UK's leading distributor of plastics raw materials, delivering reliability, know-how and true business partnership to the world's best polymer suppliers and our UK customers.

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