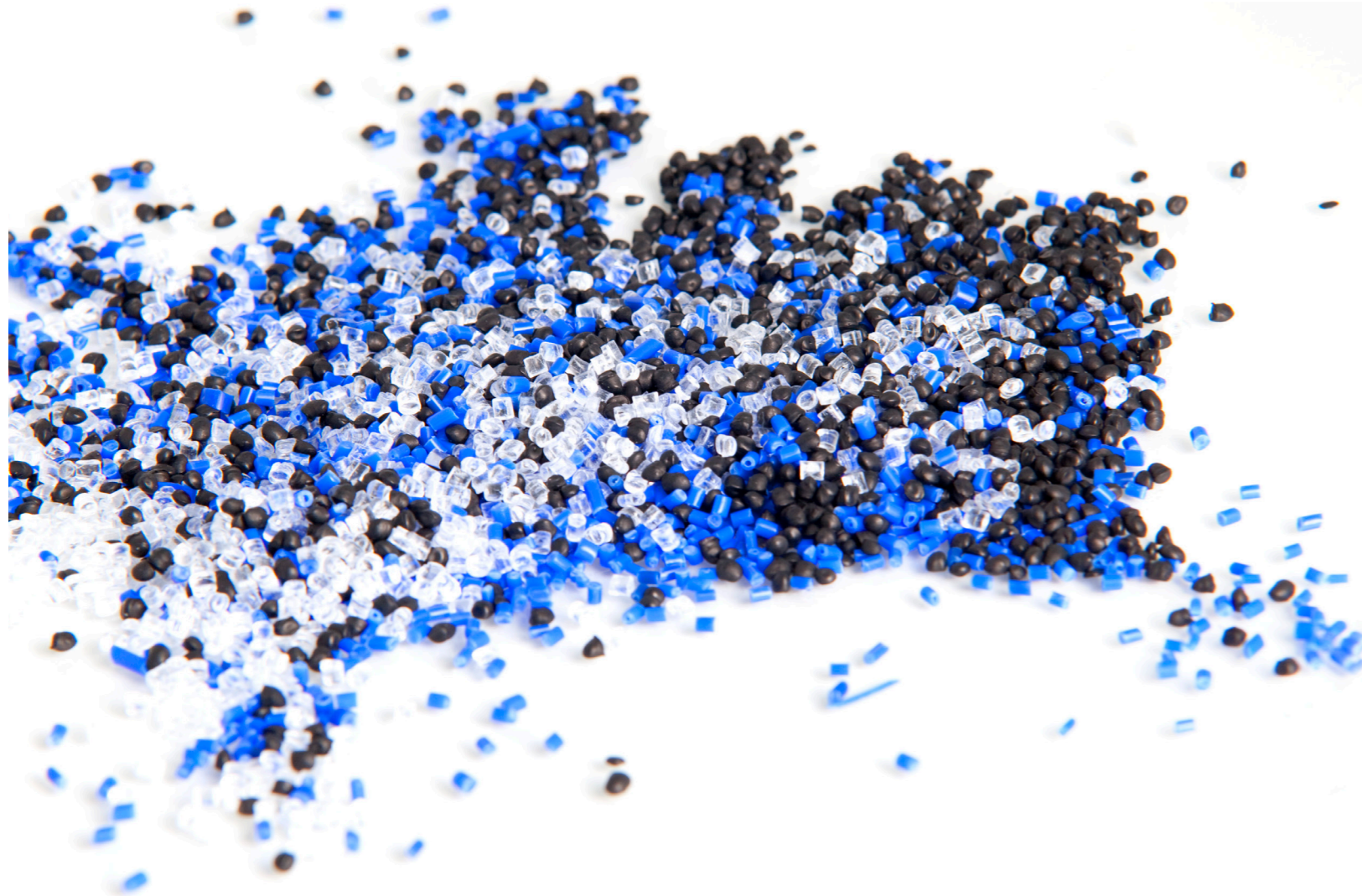


industry

know-how

0845 34 54 560

www.plastribution.co.uk



The colouring of plastics

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 that shares this expertise to provide essential background on some of the common terminology and practices used within the plastics industry.

Techniques commonly used for the colouring of plastics are discussed in this issue, with a more detailed analysis available on the Plastribution website www.plastribution.co.uk

Colouring of Plastics

One of the great advantages of plastics is the ability to easily colour them to an infinite variety of colours and special effects. Two of the two most commonly used techniques are described on the next page.

Compounding

Compounding involves an additional process where just enough colourant is compounded to a polymer base to achieve the desired colour and opacity. The resultant colour compound is ready for processing by injection moulding or extrusion into finished product.

There are several advantages to having a material compounded which include:

- Excellent colour distribution (not to be confused with dispersion)
- Ease of use (no dosing of colour or masterbatch required)
- No dosing equipment needed
- Consistent colour within batch

The disadvantages of compounds are that they can work out more expensive due to the additional processing that the material undergoes and it may be necessary to increase stock holding because a quantity has to be held for each colour of the same grade.

Masterbatch

The use of masterbatch involves adding a colour concentrate to an uncoloured base polymer. This concentrate, or masterbatch, can be added in liquid or solid form from as little as 0.5% to 5% typically. As with compounded material, there are advantages and disadvantages of using this method to colour a polymer base.

Advantages include:

- Lower cost
- Optimum dispersion of pigments (pigments contained in a masterbatch should be fully dispersed at the manufacturers)
- Cleaner alternative than using **Dry Blends*****
- Flexibility
- Less stock holding
- A universal carrier means that the masterbatch can be used across generic material types e.g. LDPE, HDPE, PPH, PPCP, HIPS, ABS, POM etc. although in order to optimize properties a polymer specific carrier should be used.

Some of the disadvantages to bear in mind when using masterbatch can be colour consistency throughout a batch. Accurate dosing is essential to maintaining colour quality which requires modern dosing equipment and the ability to use and monitor correctly.

Generally the use of masterbatch works out cheaper than compounding as long as it is added at the correct dosing levels.

In solid colours there may be very little difference in colour between an addition rate of 1% or 2% yet the cost of colouring is doubled!

There are two other methods of colouring plastics, which are perhaps not so widespread, that are also worth mentioning:

Dry Blend***

Dry blending involves tumbling the polymer base and raw pigments together and processing without any further mixing. It results in a low quality product of varying colour consistency with a high chance of poor dispersion and distribution.

Salt and Pepper mix

Instead of dosing masterbatch at the machine, the masterbatch is added to the polymer base and mixed manually. This method is sometimes used when there is no dosing equipment available. It may also be used where the sort of high addition rates are required that dosing units cannot accommodate.

Should you require further information please contact Plastribution. We will be happy to guide you in your choice of colourant or to discuss any current technical issues or projects you may have regarding the colouring of plastics - 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.

In the event that you require further information about the colouring of plastics, please do not hesitate to contact a member of the Plastribution team for further information by emailing sales@plastribution.co.uk or phone 0845 3454560

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