



**HIGHPET<sup>®</sup>**

Masterbatches for PET Applications

PET Films, PET Fibers & Filaments, PET Bottles, PET Sheets



**HIGH GRADE INDUSTRIES**

[www.highgrade.in](http://www.highgrade.in)



*“ Our Mission is to be a leading solution provider for the stabilization of Plastics & to engage in the development of products for the Polymer Processing, Packaging & Textile Industries. ”*

## ABOUT US

We are a group of technocrats and professionals engaged in the business of Polymer Stabilization & providing Industrial solutions for Plastics in the form of Additives and Concentrates.

M/s High Grade Industries (I) Pvt. Ltd. is a manufacturing company founded by Mr. G. S. Kohli in the Year 2000, engaged in the manufacturing of Plastic Additives and Plastic Masterbatches/Compounds with an annual manufacturing capacity of 3000 MT per annum of Additives & 45,000 MT per annum of Masterbatches/Compounds.

We are based in Mumbai with manufacturing facilities in Silvassa, D&NH, ably supported by a sales network across India.

Our current major markets are the domestic market of India and exports to over 14 countries encompassing Asia, South East Asia, Africa & Europe.

Our group company, **M/s Solaris Speciality Chemicals Pvt. Ltd.** is also engaged in the manufacturing of masterbatches.

All the operations of the group viz, the Corporate offices, Manufacturing facilities are fully owned by the founder promoters – the Kohli Family.

**Our total group revenue in the year 2022-23 was 60 million USD.**

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## MASTERBATCH SOLUTIONS FOR POLYESTER (PET)

**BoPET (biaxially-oriented polyethylene terephthalate)** is a PET film made from stretched polyethylene terephthalate (PET) and is used for its high tensile strength, chemical and dimensional stability, transparency, reflectivity, gas and aroma barrier properties, and electrical insulation.

**PET fibres** are widely used in the textile industry. PET fibres are used in fashion apparel often blended with cotton, as heat insulation layers in thermal wear, sportswear and workwear and automotive upholstery.

**Plastic bottles made from PET** are widely used for soft drinks. Non-oriented PET sheet can be thermoformed to make packaging trays and blister packs.

We manufacture the following PET Masterbatches to cater to the above applications of polyester:

- **Additive Masterbatches** such as : UV, Antiblock, Antioxidant, Optical Brighteners, Matt Compounds
- **White Masterbatches**
- **Black Masterbatches**

## UV MASTERBATCHES

On exposure to UV radiation, PET fibres tend to lose their elasticity, elongation and tensile strength. Polyester films discolour, show surface crazing, and finally, become brittle. To protect the polymers from the effect of UV, it is recommended to use UV Stabilizers / Absorbers.

**HighPET UV products** provide outstanding protection against the degrading effects of sunlight, heat and oxygen on the mechanical, optical and physical performance of plastic parts.

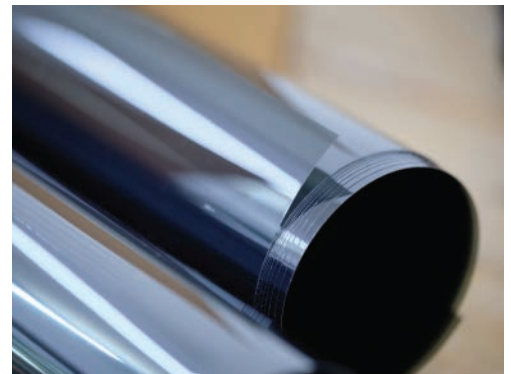
UV stabilization is done in a couple of ways -

- UV absorbers absorb harmful UV radiation, dissipating it as “harmless” thermal energy.
- Hindered amine light stabilizers (HALS), which do not absorb UV radiation, but act as radical interceptors, effectively inhibiting polymer degradation. Significant stabilization levels can be achieved at relatively low concentrations

HALS and UV absorbers are frequently used in combination to achieve the highest possible levels of light protection.

### We offer the following Grades :

<p><b>UV 702:</b> This product contains a combination of UV Absorbers and HALS. It provides superior UV protection for PET fibers with low colour and low volatility. It has a very strong, broad UVA and UVB coverage, no colour and imparts excellent UV protection for PET.</p> <p>It is typically used in the stabilization of PET bottles, PET Films &amp; Electronic displays.</p>	<p><b>UV 905:</b> This product is a highly concentrated UV-absorber masterbatch developed for PET packaging to protect UV-sensitive ingredients in cosmetics, beverages and other products. At 1.0% dosage, it offers an optimum balance of price and performance.</p> <p>This product is mainly used in complex moldings, fibers, plain and corrugated sheets, twin wall sheets, thin films, co-injected or coextruded semi-finished parts. Depending on equipment, processing conditions, and polymer types. Its very high UV screen activity allows the use of lower concentrations than with traditional UV absorbers.</p>
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### Applications:

PET Film, PET Fibers and Filament, Sheets, PET Bottles

## ANTIBLOCK MASTERBATCHES

These masterbatches modify the surface characteristic by creating a slight surface roughness or smoother surface, thus reducing the coefficient of friction. This prevents self-adhesion of plastic film or sheet, making it easier to handle. Typical applications include polyester films and sheets used in food packaging.

These products provides very good dispersion, optical properties and efficient anti-blocking effects even at low dosages.

We offer the following grades :

Grades	Active Content	Description
AB 1150	5%	Synthetic Silica based product, 4,4 micron particle size
AB 9012	7.5%	Synthetic Silica based product, 4,5 micron particle size
AB 1001	10%	Synthetic Silica based product, 4,4 microns particle size
AB 6075	7.5%	Synthetic Silica based product, 3,0 microns particle size
AB 3029	5%	Speciality Antiblock for Low haze film, Transparent films

**Applications :** PET Films & Sheets



## ANTI-OXIDANT MASTERBATCHES

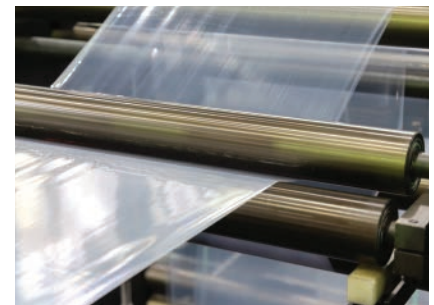
Anti-Oxidants are added in Polymers to reduce the degradation effect & control flow behaviour.

We offer the following Grades :

**6 AO :** This masterbatch contains a special anti-oxidant package which prevents product degradation during extrusion. It is generally used in PET films and sheets to prevent discolouration and keep the mechanical properties intact.

**10AO :** This is a higher concentration version of the above grade, 6 AO.

**Applications :** PET Films & Sheets



## MATT COMPOUNDS

Matt Compounds are mainly used to achieve special aesthetic effects as matt/silky appearance. We offer a range of matt compounds to obtain different targets for haze, gloss and sealability.

Grades	Active Content	Description
MATTE S-4110	10%	Good matt properties, Low gloss, High haze , Good process-ability
MATTE S-4700	14%	Good matt properties, Low gloss, High haze , Good process-ability

**Applications :** PET Films & Sheets

## OPTICAL BRIGHTENER MASTERBATCHES

Optical Brighteners are added to camouflage the yellowness of the polymer due to catalyst residue/effect in polymerization and also to retain the colour of Polymer due to heat & shear degradation during.

In PET Films, Optical brighteners are applied to reduce the yellowish colour of films. They give the films a slightly bluish tint, thus making transparent, white, and white-pearlescent films look more attractive.

In PET Fibers, Optical brighteners are added to improve the whiteness of the fiber. The Optical Brighteners help in reducing the b\* value of the fiber, thereby imparting a blueish undertone, making the fiber appear brighter.

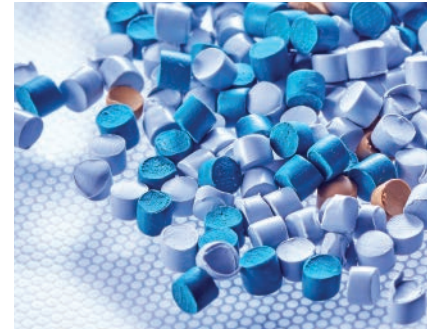
We offer the following grades :

**6 OBB:** 6 % Concentrate of OB Additive in PET, Yellowish colour

**10 OBB:** 10% Concentrate of OB Additive in PET, Yellowish colour

**B-51 OBB:** Blueish Colour product with concentrate of OB Additive

**Applications:** PET Films, PET Bottle, PET Fiber & Filaments, PET Sheets

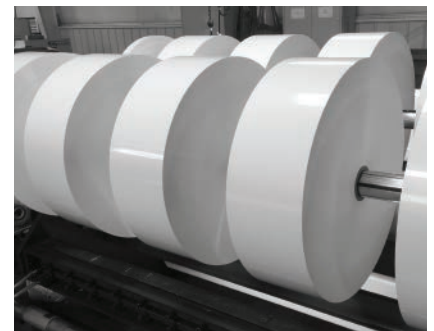


## WHITE MASTERBATCHES

White Masterbatches are primarily used in PET films to provide opacity and whiteness, and in PET Fibres and Filament industries to impart brightness and whiteness in textile applications.

We offer a wide range of white masterbatches (with up to 60% titanium dioxide) that are based on PET & PBT. We have different grades for PET film and Fiber (PSF), POY & Filament industries depending on the application.

We offer the following grades :



Grades	Base Resin	Content of TiO <sub>2</sub>	Description
<b>White 4T</b>	PET	40%	For use in PET Fiber (PSF), low FPV, good runability
<b>White 6T</b>	PET	60%	Higher concentration, For use in PET Fiber (PSF), low FPV, good runability
<b>FilaWhite 4T</b>	PET +PBT	40%	For use in POY, very low FPV, excellent runability
<b>FilaWhite 6T</b>	PET +PBT	60%	Higher concentration, For use in POY, very low FPV, excellent runability
<b>SuperWhite 6T</b>	PET	60%	For use in PET Films & PET Sheets, good runability, Opaque films
<b>UltraWhite 6T</b>	PET	60%	Higher concentration, For use in PET Films, excellent runability, Opaque films

**Applications:** PET Films, PET Fiber & Filaments, PET Sheets

## BLACK MASTERBATCHES

Black masterbatches are used to impart blackness in the final application. We manufacture a variety of speciality black masterbatches in a range of polymers such as Olefins (PP, PE) & Polyesters (PET & PBT).

We use German Twin Screw technology from Coperion GmbH in the manufacturing of these masterbatches & have a current installed capacity of 12,000 tons per annum.

Our PET & PBT black masterbatches cater to a vast variety of applications in Virgin & Recycled PSF (Staple Fiber) & Filament such as POY, FDY & DTY.

Most of these grades are tailor-made for customers and vary with the tone and the dosage of carbon black.

Polyester based black masterbatches come in a variety of dosages from 25% upto 30% carbon based products.

We offer the following grades :

Grades	Base Polymer	Carbon Loading	Application	Description
<b>POLY C130</b>	PET	30%	Recycled PSF	Standard grade for recycled PSF, low FPV
<b>POLY C77130</b>	PET	30%	Recycled PSF	Deeper tone black for recycled PSF, low FPV
<b>POLY C930</b>	PET	30%	Recycled PSF	Blue undertone grade for recycled PSF, low FPV
<b>POLY C7006</b>	PET	30%	Recycled PSF	Premium grade for recycled PSF, very low FPV, excellent runability
<b>POLY C4030Q</b>	PET	30%	Fine Recycled PSF	Premium grade for Fine denier (1.2dpf) Recycled PSF, excellent runability
<b>POLY C4028</b>	PET	28%	Virgin PSF	Standard grade for virgin PSF, low FPV
<b>POLY C1425</b>	PET + PBT	25%	Virgin PSF	Premium grade for virgin PSF, very low FPV, excellent runability
<b>POLY C3925</b>	PET	25%	POY	Standard grade for POY, very low FPV
<b>POLY C1725</b>	PET + PBT	25%	Fine POY	Premium grade for virgin PSF, very low FPV, excellent runability
<b>POLY C728</b>	PET + PBT	28%	Fine POY	Premium grade for virgin PSF, very low FPV, excellent runability



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## TECHNOLOGY CENTRE

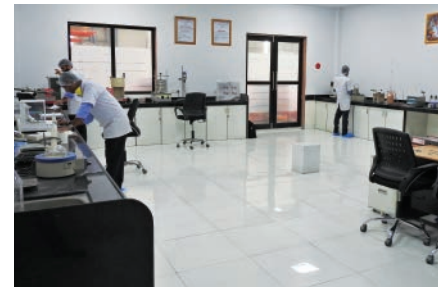
The Technology Centre is at our factory in Silvassa, India where we innovate, test and certify our products. It comprises of 3 Laboratories:

- Quality Control
- Analytical
- Application Development

## QUALITY CONTROL

Our Quality Control department comprises of standard procedures to test basic quality measures of both our Raw Materials and Finished Products.

Our quality measuring system comprises of Chemical, Physical and Application based testing to ensure the customer gets the desired quality and performance with each lot of material dispatched. This helps us in maintain a company policy of “Zero” Quality Issues.



## ANALYTICAL

The analytical laboratory evaluates help us to evaluate our products in depth with instruments such as Spectrophotometers, COF tester, Polarizing Microscope, Haze Meter, DSC, TGA, Potentiometric Titrators, Moisture Karl Fischer testers and FPV tester among others.



## APPLICATION DEVELOPMENT

Our application developmental laboratory caters to variety of applications such as Textiles, Packaging Films (BOPP, CPP, BOPET, PE films) , Molding, Rigid Packaging, & Automotive.

This Laboratory consists of various equipments intended to check the suitability of our products in the final application.



Cast Film Line

At High Grade Industries we have invested USD 2 Million in the last 5 years to enhance our R&D facilities and continue to look at various avenues to further improve our facilities.

www.highgrade.in

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## **HIGH GRADE INDUSTRIES (I) PVT. LTD.**

CORPORATE OFFICE

A/510-513, Crystal Plaza,  
New Link Road, Andheri (West)  
Mumbai – 400 053. INDIA

FACTORY

Survey No 6/1/3, Village Kilvani,  
Silvassa, Dadra & Nagar Haveli – 396 230

ishan@highgrade.in | amit.mahajan@highgrade.in | deepak.pardhe@highgrade.in | highgrade\_mum@rediffmail.com