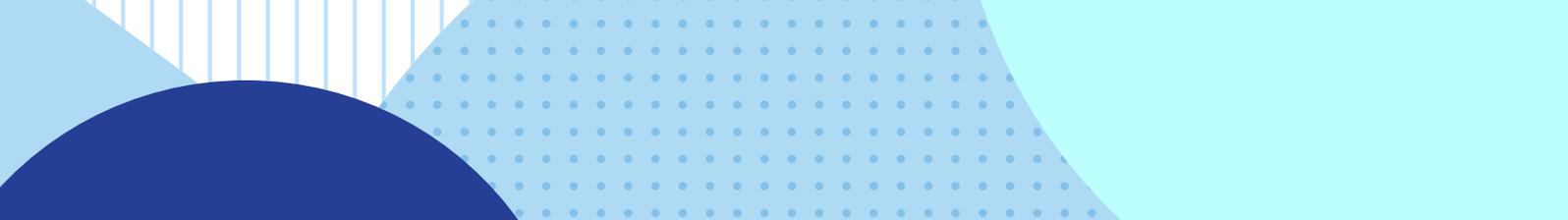


**ADDITIVES & COLORS FOR THE  
PLASTICS INDUSTRY**

**Effective Solutions and  
Additives for Polycarbonate -  
Sheet & Profile Extrusion**





# Effective Solutions and Additives for Polycarbonate - Sheet & Profile Extrusion

There is a growing global trend to replace glass with transparent plastic sheets in building applications such as malls, swimming pools, train stations and DIY projects. The most commonly used option is polycarbonate (PC) sheets, which are produced in solid, multiwall or corrugated form. Each form of PC sheets has its unique production challenges. Because polycarbonate is a transparent polymer, its optical properties are of utmost importance, along with optical manipulations where transparent colors, light diffusers and near-IR heat shielders are used. Tosaf offers a comprehensive range of solutions for PC sheet producers.

Our range of masterbatch & compound solutions are not limited to polycarbonate sheet extrusion.

Throughout the years, we have offered similar solutions to other transparent engineering polymers like: PMMA, PET-G, SAN & transparent ABS. In addition, Tosaf has wide experience with light diffuser systems, and provides solutions for the lighting & LED market. This unique growing arena is mainly served by converters of profiles extrusion or injection molding of light lens.

With over 20 years of experience and dedicated R&D in this field, TOSAF offers an extensive range of quality off the shelf products, tailored solutions and valuable technical support. Our state-of-the-art lab services are available to our customers for quality and performance testing.

# Our Leading Products

## UV CAP LAYER

Protection of PC sheets from solar radiation is achieved by using a thin co-extrudate cap layer. We offer several grades of UV cap layers, suitable for both solid and multi-wall sheets. All of them minimize plate-out. They are lightly tinted with a bluish dye to counter the yellowing color of the UV absorber, and contain optical brighteners so that UV cap layer thickness is visible under the microscope, to ensure full protection.



Product	Min. UV content	Undertone	Applications	Remarks
UV0153PCU	5%	Deep Bluish	MW sheets	Standard applications
UV7727PCU	5%	Light Bluish	MW sheets	Most suitable for slow speed production like panels and thick MW sheets
UV7912PCU	5.5%	Light Bluish	Solid Sheets & MW sheets	Premium grade clean process
UV0150PCU	6%	Light Bluish	Solid sheets	Improved protection level with very low plate out
UV0155PCU	5%	Deep Bluish	Solid sheets	Very low plate out
UV3328PCU	10%	Deep Bluish	MW sheets & systems	Prolonged service life
DA7754PCU	5%	Bluish /Milky	MW & Solid	Combination of UV Cap Layer and Antiglare Additive
DA8720PCU	5%	Deep Bluish	Corrugated sheets	Combination of UV Cap Layer + Anti Block
UV7749PCU	5%	Transparent Grey	MW sheets	Combination of UV Cap Layer + Near IR Absorber

## FR MASTERBATCH

The main challenge in applying additives to PC sheets, is maintaining the original transparent properties of the polycarbonate. We have developed several flame-retardant solutions that have a minimal effect on the sheets' transparency, with no reduction in light transmission and a marginal increase of haze (1-2% of the original value). For opaque products like injection molding of E&E articles, we offer a range of masterbatches and compounds that can also be colored, upon request.



Product	Applications	Remarks
FR3997PC Highly Concentrated MB	Sheets & profiles	Halogen base FR cost effective. No effect on optical properties V0 & 2mm
FR7607PC Highly Concentrated MB	Sheets & profiles	Halogen base FR cost effective. No effect on optical properties V0 & 1.5mm
FR7762PC Ready Compound	With compliance for train components EN-45545-2 (R4 Requirements)	European standard tested and indicatively proven (regulatory approval in process)
FR7683PC Highly Concentrated MB	Injection molding Non-transparent applications	Halogen free
KK800458 White Compound	Injection molding of E&E and more	Halogen free ready to use compound

## LIGHT DIFFUSERS

Light diffusion additives are used to eliminate the uncomfortable glare that can occur when direct sunlight comes through a clear PC sheet. Having developed, a range of unique light diffuser MB's and compounds, we offer products that effectively maximize light transmission while providing high quality light diffusion.

TOSAF's Light diffuser range includes products for PC, PMMA, PETG, SAN and transparent ABS.



Product	Applications	Remarks
LD5891PC Highly concentrated MB	<b>Polycarbonate</b> Mainly extrusion of sheets and profiles	Excellent diffusion High light transmission – L.T ~ 85% Hides all hot spots <b>PREMIUM PRODUCT</b>
LD5825PC Highly concentrated MB	<b>Polycarbonate</b> Mainly extrusion of sheets and profiles	Excellent diffusion Moderate light transmission L.T ~ 65% High thermal stable
LD5889PC Diluted MB	<b>Polycarbonate</b> Mainly for injection molding	Excellent diffusion Very High light transmission Hiding all hot spots
LD7631PC Compound	<b>Polycarbonate</b> Injection molding	Excellent diffusion Very High light transmission Hiding all hot spots
LD7416MA Highly concentrated MB	<b>PMMA</b> Mainly extrusion of sheets and profiles	Excellent diffusion High light transmission
LD7292MA Highly concentrated MB	<b>PMMA</b> Mainly extrusion of sheets and profiles	Excellent diffusion Very High light transmission Hiding all hot spots <b>PREMIUM PRODUCT</b>
LD7898PS Highly concentrated MB	<b>Polystyrene</b> Mainly extrusion of sheets and profiles	Excellent diffusion High light transmission
LD8876SA Highly concentrated MB	<b>SAN &amp; ABS (transparent)</b> Mainly extrusion of sheets and profiles	Excellent diffusion High light transmission
LD8873ET Highly concentrated MB	<b>PET-G</b> Mainly extrusion of sheets and profiles	Excellent diffusion High light transmission

## HEAT REDUCTION

One of the main drawbacks of using a transparent cover or roofing in construction is that it lets in Near IR (NIR) energy creating a 'greenhouse' effect, which causes the covered area to become very hot, especially in summer. Our NIR masterbatch absorbs most of the NIR energy, with minimum effect on transparency to visible light.



Code	Application	Remarks
IR5980PC	PC sheets and injection molding	Highly efficient selective properties Transparent greenish undertone
IR7579PC	PC Sheets and injection molding	Highly efficient selective properties Transparent bluish undertone
UV7749PCU	PC Sheets	Combination of UV cap layer & IR additive implemented with co- extrusion layer Grey undertone

## MATTE AND FROST EFFECT

To reduce glare for esthetic or functional purposes, customers may request a matte or frost effect on their PC sheets. We offer several solutions for achieving this special effect. Solutions include masterbatches for PC, PMMA and PS profiles. The range includes gentle or rough effect and a combination with the UV Cap Layer to be applied via a co-extrusion system.

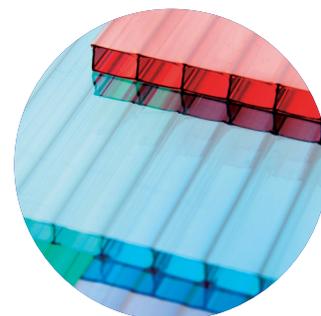


Code	Applications	Surface properties
MT7756PC	Extrusion of <b>Polycarbonate</b> sheets and profiles	Rough
MT8741PC	Extrusion of <b>Polycarbonate</b> sheets and profiles	Gentle
MT7424MA	Extrusion of <b>PMMA</b> sheets and profiles	Rough
MT8742MA	Extrusion of <b>PMMA</b> sheets and profiles	Gentle
MT8743PS	Extrusion of <b>Polystyrene</b> sheets and profiles	Rough
MT8745PS	Extrusion of <b>Polystyrene</b> sheets and profiles	Gentle

## COLOR MASTERBATCH

As well as standard color MBs for sheet extrusion and injection molding, we offer a wide range of special effect colors, including transparent, opaque, metallic, opal-diffuser and pearlescent. They are all based on high thermal stability dyes and pigments. We also deliver color-matching services with fast turnaround times.

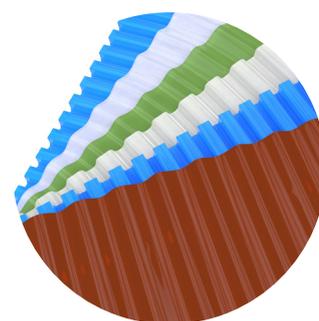
Color masterbatches range for Polycarbonate and PMMA.



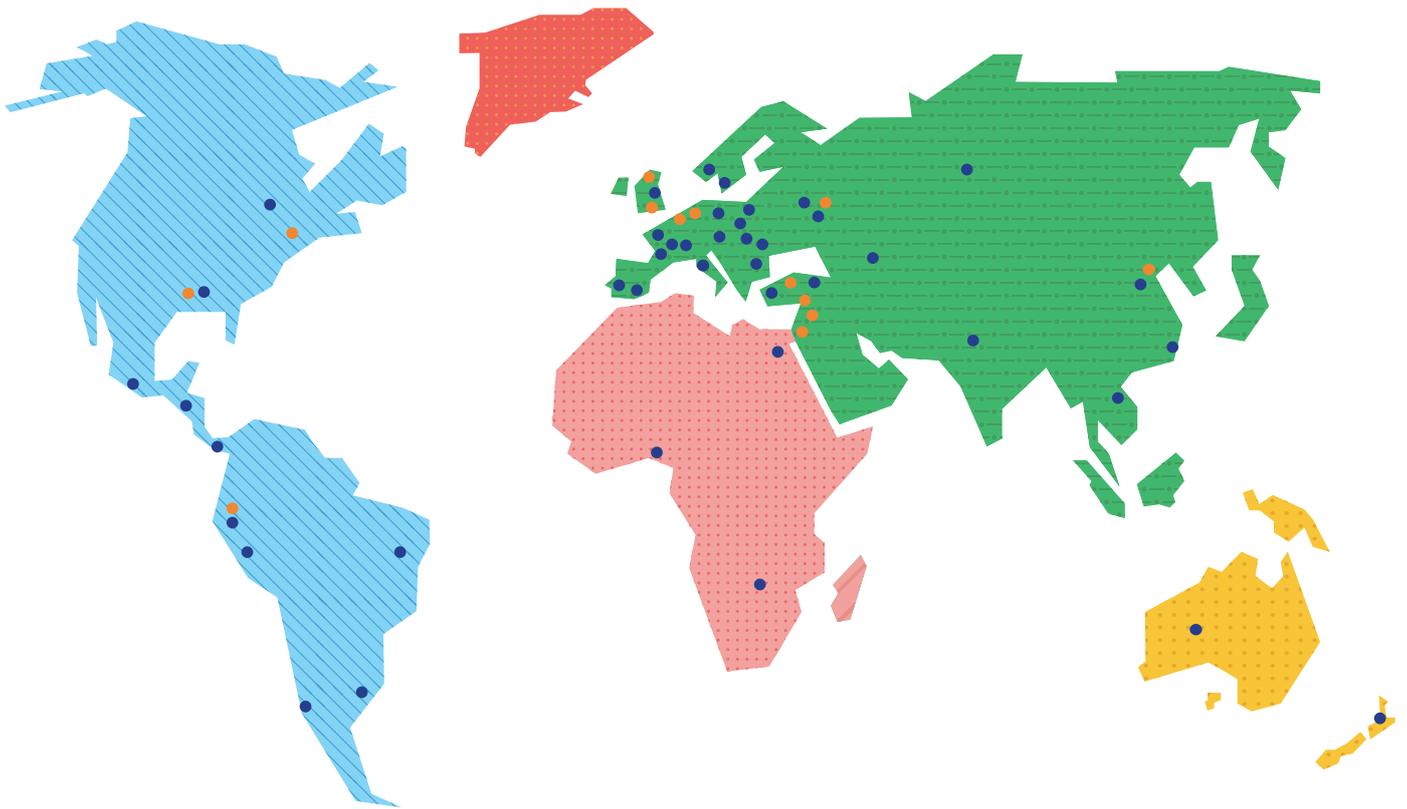
Family type	Remarks
Transparent Colors	Blue, purple, red, yellow, orange green and more...
Opal colors	Range of MB's based on TiO <sub>2</sub> or combination of TiO <sub>2</sub> + light diffuser additive
Opaque colors	Range of opaque colors black, grey, ivory, white and range of pastel colors
Metal colors	Range of MB's based on metal pigments with color shifting or natural

## MISCELLANEOUS

Anti-Block for corrugated sheets  
 Glass Fibers for "hammer effect"  
 Mold release for injection molding & extrusion of profiles  
 Processing aids



\* This catalogue present only part of our polycarbonate products range. If you can't find the right solution for your needs, please contact us for more technical information.



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