



For a transparent view with
Kafrit Masterbatches and Compounds

Polycarbonate and PMMA Sheets










Kafrit Group is a leading producer of Masterbatches and Compounds for the plastics industry and currently employs more than 470 people. In 2021, the Group achieved USD 302 million \$ turnover with an available capacity of more than 120,000 MT. Moreover, the company is active on a global scale and has set up production sites all over the world.

All of this began in 1973 when the company was founded in Israel. Since then, the company has grown primarily via acquisition.

Today, the Kafrit Group incorporates **Kafrit Industries (1993) Ltd. in Israel, CONSTAB Polyolefin Additives GmbH and Delta Kunststoffe AG in Germany, China's Suzhou Constab Engineering Plastics Co. LTD, Polyfil Inc. in the USA, the Canada-based Kafrit NA Ltd. and Addvanze AB in Sweden.** With more than 50 years of experience in the plastics processing industry, the company can draw on high levels of expertise and technical know-how. Kafrit Group places a high value on sustainability and has made it to one of the cornerstones of our corporate strategy.

Our unbridled dedication to environmental, social and financial issues makes us to one of the leading business partners in the plastics industry. Our customers value our passion and appreciate our ecological awareness and social commitment. Moreover, they recognize our world leading services and consider our products as among the best within our industry.

We develop and produce cost-efficient solutions which will enhance the completion of high-quality end products in many areas of the plastics industry, such as packaging films (BOPP, BOPE, CPP, PE), PC sheet, agricultural films and derivatives, biopolymers, flame retardant applications, PEX, pipes, fibers and nonwovens.

-  KAFRIT IL ①
-  CONSTAB GER ②
-  CONSTAB CN ③
-  KAFRIT NA ④
-  POLYFIL USA ⑤
-  ADDVANZE SWE ⑥
-  DELTA KUNSTSTOFFE GER ⑦



● Kafrit Group production sites ● Agencies/Distribution

Unite talent and technology to drive the future of plastics, together.

This purpose is the driving force of our organization. The reason we do what we do, why we come to work every day. And although our group is made of many different Companies around the world, our purpose unites us.

These three pillars support our purpose

TOGETHER TO THE FUTURE

The world doesn't stand still, and nor do we. We're always looking ahead, searching for new ways to sustainably grow and thrive. To push our technology and keep working on the next generation of solutions to benefit our customers. Working together in perfect synergy to achieve something great, today and tomorrow.

TALENT

Around the world, we have hundreds of talented colleagues and partners. All with unique skills, multidisciplinary knowledge, and deep industry experience. Innovators with brilliant ideas and the drive to see them through. People striving for excellence in everything they do.

TECHNOLOGY

After decades in the plastics industry, we have more than high levels of expertise, a strong focus on customer service, and vast technical knowledge. We also have a burning passion for innovation and transformation. A passion that drives us to seek out new solutions, new machinery, and fresh ways to give our customers just what they need.

Together we have the power to drive the future of plastics – within our community and around the world. And we'll keep doing it, today, tomorrow and always.

But the real magic happens when we work together. There's a spark, an energy. A belief that anything is possible. And that's how we provide the best solutions for our customers.

And with the latest technology in our hands and new innovations within our grasp, there's only one question. How far can we go?



Defining new production goals

Experience the new high performance products

Research that takes us to the top

Throughout our company history, research and development have always been a key area of our expertise. Kafrit employs a staff of more than 470 people that work on innovative products and make use of our vast pool of knowledge that we developed in 50 years of experience in the plastics industry. Our experts optimize and develop additive concentrates, flame retardants, color concentrates, and compounds for various applications.

Kafrit enjoys a close partnership with renowned research institutions at the Shenkar University in Israel and at different universities in Germany. Moreover, we maintain a strong co-operation with well-known suppliers including machine manufacturers that do recommend our products for use in combination with their machines.

Polycarbonate

Kafrit UV Compounds

Kafrit UV compounds are designed and tailored according to the customer's specifications and Kafrit's vast experience in this field. All Kafrit solutions are colored with a bluish tint to hide the UVA yellow shade, and contain optical-brightener to enable layer identification by the sheet producer. Kafrit is offering unique coloring abilities to meet customer demands.

Flow Properties

The compound flow properties are a key factor in uniform and stable layer distribution across the sheet's width. The Cap Layer flow is determined by the PC resin type, lubrication system level and, most importantly, the UV absorbers types and level.

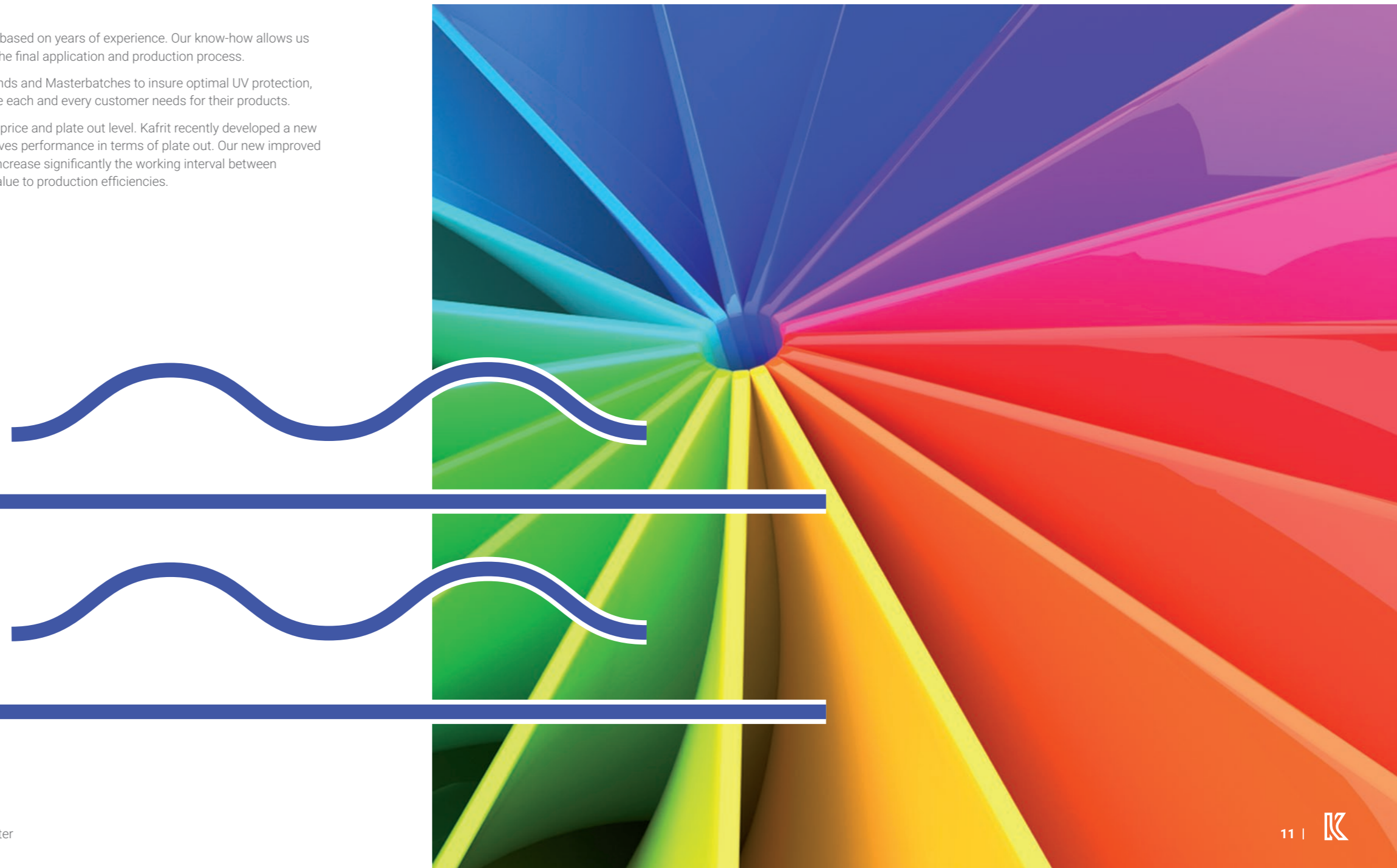
Process optimization

Kafrit solutions offer an optimized MVI based on years of experience. Our know-how allows us to offer a variety of MVIs according to the final application and production process.

We use different types of UVA compounds and Masterbatches to insure optimal UV protection, process optimization and the best value each and every customer needs for their products.

The UVA types differ in their chemistry, price and plate out level. Kafrit recently developed a new line of products that significantly improves performance in terms of plate out. Our new improved technology allows sheet producers to increase significantly the working interval between cleaning, therefore adding significant value to production efficiencies.

Kafrit assumes full responsibility for its products, keeps its word on delivery and lead times and has an excellent reputation.



Polycarbonate

1. UV Cap Layer

Most PC sheets are protected by a thin co-extruded layer (Cap Layer). This layer is based on PC resin, enriched with a high level of UV absorbers. The recommended layer thickness is taking into consideration the layer erosion over the service life and the UV additive optical density, so no harmful UV light will penetrate the Cap Layer to the unprotected Polycarbonate.

Code	Application	UV	Color	Remarks
UVA 60J781 PC	MW sheets	5 %	Deep bluish	High linear speed
UVA 60H42 PC	Solid and MW sheets	5%	Deep bluish	
UVA 60J783 PC	MW sheets and panels	5%	Light bluish	Low linear speed
UVA 60397A PC	Solid and MW sheets	6%	Light bluish	
UVA 6G090 PC	Solid and panels	10%	Deep bluish	Extended service life
UVA 6D49B PC	MW sheets	Advanced chemistry	Light bluish	Improved plate out performance.
UVA 6D490 PC	MW sheets and panels	Advanced chemistry	Deep bluish	Improved plate out performance. 20 years service life at moderate climate.

“Kafrit is very flexible regarding changes in delivery times. We appreciate the great reliability.”

2. Anti-Glare

The purpose of this product group is to eliminate the sheets' glossy surface appearance. As this is a surface phenomena, the AG products are always combined with UVA and applied to the sheets in the same manner as the UV cap layers.

The effect obtained can also be referred to as a "matt-effect". The AG products are based on cross-linked polymeric spheres (similar to the light diffuser additives) that create a kind of micro-structure on the surface and, as such, interfere with the glossy appearance. The AG products contain different types of polymeric spheres, with different diameters. Both parameters are very important factors in the AG's performance, appearance and processability. It is recommended to apply the AG compounds at a layer thickness of 40-50 µm to get the best effect.

Code	Surface effect	UV	Color /Appearance	Max processing temp
UVA 69600 PC	Fine	10%	Deep bluish/Milky-Haze	300
UVA 6C670 PC	Fine	6%	Deep bluish/Milky-Haze	300
UVA 60D67 PC	Medium	5%	Deep bluish/Matt Effect	270
UVA 60D23 PC	Medium	10%	Light bluish/Matt Effect	270
UVA 60919 PC	Rough	7%	Light bluish/Matt Effect	270
UVA 60F66 PC	Rough	10%	Light bluish/Matt Effect	270

3. Anti-Scratch

Code	Surface effect	UV	Color /Appearance	Max processing temp
UVA 60J71 PC	Rough	Advanced chemistry	Deep bluish/Matt Effect	300

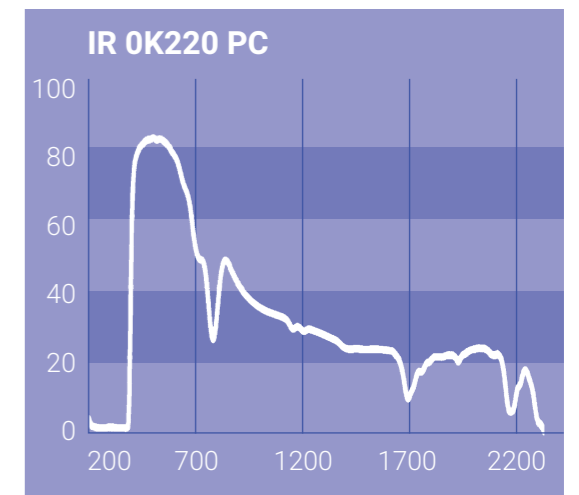
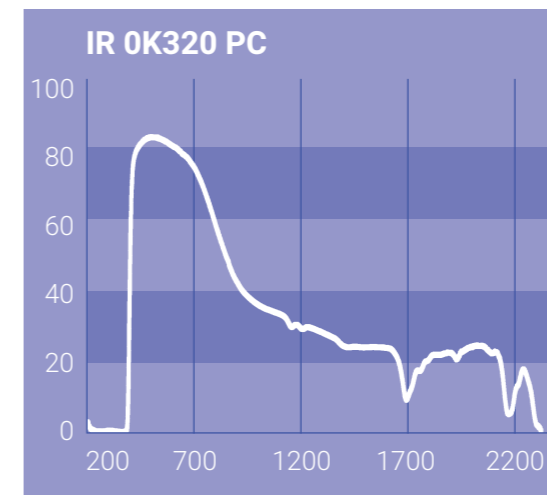
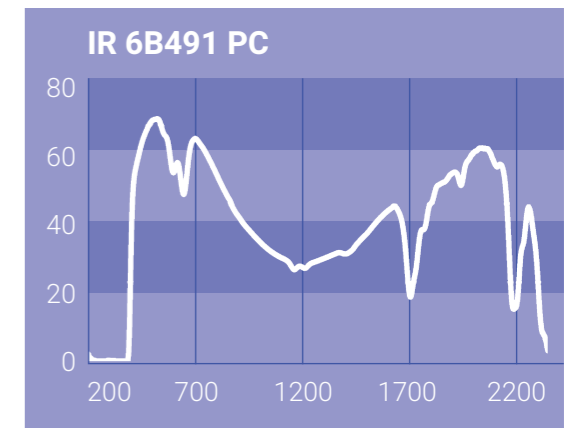
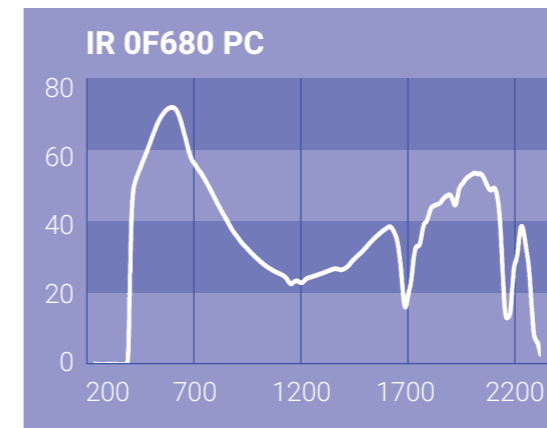
4. Heat Management

In today's world energy savings are essential and play an important role in designing the world's future. The major global trends such as climate changes, mobility, growing population and increasing urbanization require by better solutions to insure: zero emissions, low energy building, efficient and lightweight transportation, better housing structure and system and more efficient public infrastructure.

More than 50% of the light is invisible and translates into heat (NIR). This heat is accumulated under covered spaces and requires energy in order to control the temperature under such structures.

Kafrut NIR PC Masterbatches are designed to insure that NIR is reflected and therefore allows architects and other users to insure that covered spaces are efficient and cost effective. With our versatile portfolio while using unique proprietary we offer a wide range of optimized solutions to answer tomorrow's demand.

Code	Description	Feeding Rate	Solar Performances	LT %
IR 0F680 PC	Standard NIR MB; transparent with greenish appearance; based on unique technology. Kafrut proprietary	3% @1.3mm chip	SHGC = 0.61, SC = 0.70, LSC = 1.08	66
IR 6B491 PC	Modification of IR 0F680 PC, combined with blue pigment	3% @1.3mm chip	SHGC = 0.58, SC = 0.67, LSC = 1.01	59
IR 0K320 PC	NIR Based on new chemistry NIR absorber; very transparent with slightly bluish shade	3% @1.3mm chip	SHGC = 0.67, SC = 0.77, LSC = 1.23	82
IR 0K220 PC	New combination of NIR additives based on advanced technology; covers large area of the energetic part in the NIR region.	3% @1.3mm chip	SHGC = 0.63, SC = 0.72, LSC = 1.29	81



Additional IR Products

All products available as compound:

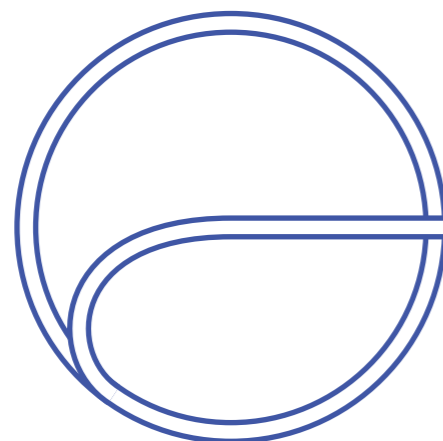
- Designed for a co-extrusion layer of 50 μ , under the UV layer.
- Designed for a co-extrusion layer of 50 μ combined with UVA for a single-layer implementation

SHGC solar heat gain coefficient

SC shading coefficient

LT light transmission

LSG LT/SHGC



"I greatly appreciate the reliable handling and top quality.

The technical support is excellent and the staff are always there to help."

5. Light Diffuser

5.1 Polycarbonate diffusers

Code	Properties	Application	Feeding Rate	LT %
DIF 0J160 PC	High efficiency.	MW, Corrugated	2%, 3 mm	72
DIF 09540 PC	High efficiency.	MW, Corrugated	1.4%, 3 mm	72
DIF 00097 PC	High thermal stability.	Solid	1.7%, 3 mm	60
NEW! DIF 00973 PC	Excellent LT/Haze ratio (LED).	MW, Solid, Corrugated	1.5%, 3 mm	87
DIF 10981 PC	High efficiency and white shade (Opal).	MW, Corrugated	1.5%, 3 mm	60

All measurements were done on 1.2 mm plaque

5.2 PMMA diffusers

Code	Properties	Application	Feeding Rate	LT %
DIF 0R76 MMA	High thermal stability.	Solid	3.0%, 3 mm	80
NEW! DIF 00376 MMA Diffuser	High thermal stability, excellent LT/Haze ratio (LED).	Solid	1.8%, 3mm	91,0

All measurements were done on 1.2 mm plaque

6. Flame Retardant

The Single Burning Item standard (SBI) EN 13823 is the main building standard for PC sheets in Europe. The same goes for the ASTM E84 in North America. In addition to the various required standards in different countries, the PC sheet geometry, type of polycarbonate resin mixed with the FR MB, thickness and weight have an important impact on the FR performances.

The various factors described above are used by our experts and customers alike to offer a suitable solution so as to fulfill the requirements of the standards.

Our lab developed skills and an extrapolation method of Flame Retardants to evaluate the FR performance using UL-94 and LOI tests. Different building standards require different testing methods using the final sheet structure produced by our customers.

6.1 Flame Retardant PC

Code	Description	Feeding Rate	Standard	Comments
FR 0I670 PC	Brominated FR	10.0–15.0%	UL-94, 1.6mm, V0.	Transparent
FR 00I171 PC	Brominated FR	Compound	E-84, Class A , different thicknesses.	Transparent
FR 00P90 PC	HFFR	15.0–20.0%	UL-94, 1.6mm, V0.	Transparent, solid sheets
FR 04530 PC	HFFR	2.0–4.0%	UL-94, 1.6mm, V0.	Translucent, Injection Molding, sheets

6.1 Flame Retardant PMMA

Code	Description	Feeding Rate	Standard	Comments
NEW! FR 00676 ACR	Brominated FR	48–52%	UL-94, 1.6–3.2 mm, V2.	Transparent


7. Additive


Code	Property	Description	Application	Feeding Rate
SL 00002 PC	Mold Release	Especially for PC injection molding but not only. Solves lubrication problems.	IM	1.0–5.0%
AB 0G380 PC	Antiblock	Has minimal effect on the product transparency or haze.	PC corrugated	0.5–1.0% in the UV Cap layer
CB 00T33 PC	Glass Fibers	HAMMER EFFECT	MW sheets and panels	0.2%–2%


8. PMMA Antiglare / Anti Slip


Code	Surface effect	Feeding Rate	Application
AG 0K830 PMMA Antiglare	Fine	100% 50 micron co-extrusion layer.	PMMA sheets
AG 0K83B PMMA Antiglare	Medium	100% 50 micron co-extrusion layer.	PMMA sheets
AS 0K83C PMMA Anti slip	Rough	100% 50 micron co-extrusion layer.	PMMA sheets


Please request for further information:



 **BOPP**
Optimizing BOPP film production
with CONSTAB® Masterbatches and Compounds


 **BOPE**
Sustainable solutions for flexible packaging films
with CONSTAB® CON-X® Masterbatches

 **Functionalities: Ecocell® – Lighten up!**
A revolutionary foaming agent
to reduce material and resin consumption


 **Functionalities: Kafrit Group Antioxidants**
Reliable protection for your plastic products


 **Functionalities: Conpeel**
Strong protection, easy peeling
with CONSTAB CONPEEL® Compounds


 **Polyethylene Packaging, Polypropylene Cast
and Calender Films**
 Rolling to success with Kafrit Group
Masterbatches and Compounds

 **Polycarbonate and PMMA Sheets**
for a transparent view with Kafrit Masterbatches
and Compounds

 **Pipes and Sheets**
Customized solutions with Kafrit Group
Masterbatches and Compounds

 **Injection Molding, Blow Molding**
Injecting new ideas into your products with
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 **Nonwovens**
Adding value to Fibers and Nonwovens
with Kafrit Group Masterbatches

 **Agricultural Film**
Growing success with Kafrit Group
Masterbatches and Compounds

Global supply, local partnership:
We are where you are.

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