HIPEX®

PRODUCT GUIDE

Flawlessly extruded A-PET and PET-G thermoplastic polyester sheets.

3A COMPOSITES

HIPEX®

HIPEX® sheets are flawlessly extruded A-PET and PET-G thermoplastic polyester sheets. The sheets are characterized by high impact strength, high transparency, good printability with UV curing inks as well as an easy and fast processability.

Moreover, **HIPEX®** sheets are flame retardant rated "difficult-to-ignite" and are therefore ideally suitable for a variety of indoor and outdoor applications. For outdoor applications we recommend the variants with UV protection.

The **HIPEX®** product range offers ideal conditions for the field of forming. **HIPEX® A** is the best for flat and cold bending applications, **HIPEX® G** for complex vacuum forming and thermoforming.

HIPEX® A is available in thicknesses of 0.5 to 6 mm, **HIPEX® G** in thicknesses from 0.8 to 20 mm and up to a width of 2050 mm.

Detailed information on the product availability can be found in the current valid version of the delivery programme. Please contact your customer service representative.

HIPEX® A

THE BEST FOR FLAT AND COLD BENDING APPLICATIONS

HIPEX® A is a premium quality amorphous polyethylene terephthalate (A-PET). **HIPEX® A** is the best choice for flat and cold bending applications. **HIPEX® A** shows good printability with UV curing inks and is flame retardant rated "difficult-to-ignite" as well as suitable for food applications. Moreover, it is extremely impact resistant also at temperatures down to -20°C and shows excellent outdoor durability in the variant with UV protection.

HIPEX® A sheets offer a unique combination of excellent properties and occupy an unrivalled ecological position amongst fully transparent and translucent sheet materials.

CHARACTERISTICS

- 100% recyclable within its own waste category
- Tough and hard with high impact strength also at temperatures down to -20°C
- Impeccable optical properties with a light transmission of nearly 90% for non-tinted types
- Good outdoor durability in the variant with UV protection
- Flame retardant rated "difficult-to-ignite"
- Very high chemical resistance
- Easy and fast to process
- Good printability thanks to optimal adhesion of UV curing inks

APPLICATIONS

- Flexible poster covers
- Printed translucent signs
- Small to medium sized displays
- Slatwall magazine racks
- Cold food storage elements
- Protective glazing for machinery

PROCESSING

- Printing
- Laminating
- Sawing
- Drilling
- Thread cutting
- Milling
- Laser and water jet cutting
- Polishing
- Stamping/Cutting
- Bonding
- Cold bending
- Tempering

GENERAL			
Property	Method	Unit	HIPEX® A
Density	DIN EN ISO 1183-1	g/cm³	1.33
Surface hardness	ISO 868	Shore D	50
MECHANICAL			
Property	Method	Unit	HIPEX® A
Flexural modulus	EN ISO 178	MPa	2500
Tensile strength	DIN EN ISO 527-2	MPa	>55
Coefficient of linear expansion	DIN EN ISO 75-2	mm/(m·K)	0.05
Impact strength – Charpy (unnotched)	DIN EN ISO 179-1	kJ/m²	NB (no break)
OPTICAL			
Property	Method	Unit	HIPEX® A
Light transmission (3 mm clear transparent)	DIN 5036	%	>86
THERMAL			
Property	Method	Unit	HIPEX® A
Max. service temperature		°C	65
OTHERS			
Property	Method	Unit	HIPEX® A
Fire classification	EN 13501-1	Classification	B-s1, d0

Note: These technical data of our products are typical ones; the actually measured values are subject to production variations.

HIPEX® G

THE PERFECT MATERIAL FOR VACUUM FORMING AND THERMOFORMING

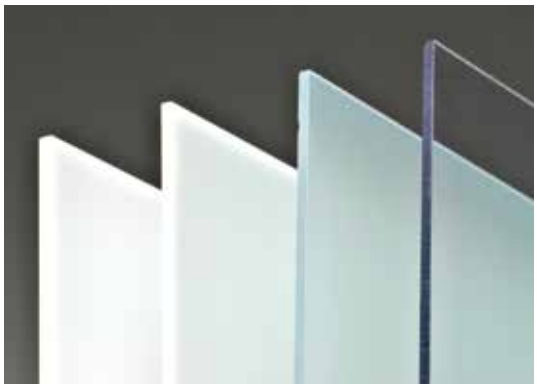
HIPEX® G are extruded polyethylene terephthalate glycol (PET-G) sheets, which are characterized by good optical properties, easy processability and very good impact resistance. Moreover, **HIPEX® G** sheets are flame retardant rated "difficult-to-ignite", are suitable for food applications and can be printed with UV curing inks.

Especially for applications in the field of vacuum forming and thermoforming, **HIPEX® G** sheets are the best choice as they don't crystallize and can be processed without pre-drying (time and energy saving). Thanks to its easy formability, the material offers designers and fabricators various possibilities, from simple shapes to complex constructions.

The sheets are available with or without UV protection and in addition to the clear and opal white versions also in a variety of colours and design patterns.

CHARACTERISTICS

- Good optical properties and a brilliant surface
- Easy to fabricate
- Excellent for vacuum forming and thermoforming without pre-drying (time and energy saving)
- Exceptional low temperature performance
- Very good chemical resistance
- Very high impact resistance
- Easy to recycle
- Flame retardant rated "difficult-to-ignite"
- Good printability thanks to optimal adhesion of UV curing inks



APPLICATIONS

- Bus shelters
- Poster glazing
- Machine guards
- Medical appliance packaging
- Displays and signs for interior and exterior use
- Bicycle safety helmets
- Lighting controllers for hazardous areas
- Back-printed translucent signs
- Three-dimensional POS/POP displays

PROCESSING

- Printing
- Laminating
- Sawing
- Drilling
- Thread cutting
- Milling
- Laser and water jet cutting
- Polishing
- Stamping/Cutting
- Bonding
- Hot and cold bending
- Thermoforming
- Tempering

GENERAL			
Property	Method	Unit	HIPEX® G
Density	DIN EN ISO 1183-1	g/cm³	1.27
Rockwell hardness	EN ISO 2039-1 / ASTM D-785	M-Scala	105
MECHANICAL			
Property	Method	Unit	HIPEX® G
Flexural Modulus	DIN EN ISO 178	MPa	1900
Flexural Strength	DIN EN ISO 178	MPa	70
Tensile Modulus	DIN EN ISO 527-2	MPa	2000
Tensile Strength	DIN EN ISO 527-2	MPa	50
Elongation	DIN EN ISO 527-2	%	60
Impact strength – Izod (notched)	DIN EN ISO 180/4A	kJ/m²	11.5
Impact strength – Charpy (notched)	DIN EN ISO 179-1/1eA	kJ/m²	7
Impact strength – Charpy (unnotched)	DIN EN ISO 179-1	kJ/m²	NB (no break)
OPTICAL			
Property	Method	Unit	HIPEX® G
Light transmission (3 mm clear transparent)	DIN EN ISO 13468-1	%	88
Refractive index	DIN EN ISO 489	n_D^{20}	1.57
Haze	ISO 14782 / ASTM D1003	%	<1
Solar energy transmittance g-value	DIN EN 410	%	3 mm 82.4 / 10 mm 79.4
THERMAL			
Property	Method	Unit	HIPEX® G
VICAT -Temperature (method B50)	DIN EN ISO 306	°C	70
Heat Deflection Temp. (A/B)	DIN EN ISO 75-2	°C	72/68
Specific Heat Capacity	DIN EN ISO 11357-4	J/gK	1.1
Coefficient of linear thermal expansion	DIN 53752 / ISO 11359-2	mm/m °C	0.068
Thermal conductivity	DIN 52612 / DIN EN ISO 22007-1	W/mK	0.20
Degradation temperature		°C	>280
Max. service temperature continuous use		°C	60
Max service temperature short term use		°C	70
Forming temperature		°C	120 – 160
ELECTRICAL			
Property	Method	Unit	HIPEX® G
Dielectric constant (100 Hz)	IEC 250 / DIN 53483-2		2.6
Volume Resistivity	IEC 60093 / DIN EN 62631-1-3-1 ASTM D257	Ω.cm	$>10^{15}$
Surface Resistivity	IEC 60093 / DIN EN 62631-1-3-2 ASTM D257	Ω	$>10^{16}$
Dielectric strength	IEC 60243-1 / ASTM D149	kV/mm	16
Dissipation factor (50 Hz)	IEC 250 / DIN53483-2		0.01
OTHERS			
Property	Method	Unit	HIPEX® G
Fire performance (building product) up to 10 mm	DIN 4102-1	Technical Approval	B1
Fire performance up to 10 mm	DIN EN13501-1	Classification	B-s1, d0
Biocompatibility (skin contact)	DIN EN 10993-5	Classification	not cytotoxic

Note: These technical data of our products are typical ones; the actually measured values are subject to production variations.

COMPOSITES

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