Exposure controls and personal protection

- Personal protective equipment
- Normal handling: eye protection
- Thermal processing: gloves, eye and / or a face protection

Physical and chemical properties

- Form: solid sheet
- Colour: clear, opal, coloured or translucent

Change in physical state:

Softening point:	> 70°C	ISO 306
Ignition temperature:	> 400°C	DIN 51794
Density:	1.02-1.06 g/cm²	ISO 1183

- Solubility in water: insoluble
- Solubility in other solvents: soluble in aromatic solvents

Stability and reactivity

- Conditions to avoid: to avoid thermal decomposition, do not overheat
- Starts to decompose at temperatures > 270 °C
- Possible thermal degradation products: monomers, other degradation products

Toxicological information

Effects of exposure:

- Inhalation: low hazard for usual industrial handling or commercial handling by trained personnel
- Eyes: same as above
- Skin: molten material may cause thermal burns
- Ingestion: expected to be a low ingestion hazard

Ecological information

- Extremely low water solubility. Low volatility
- No environmental hazards known

Disposal considerations

- Must be disposed of or incinerated in accordance with local regulations

Transport information

- Not classified as hazardous under transport regulations

Regulatory information

- Labelling according to EEC Directives: not subject to labelling

Other information

- The information contained herein is based on the present state of our knowledge and does not therefore guarantee certain properties.
- Recipients of our product must take responsibility for observing existing laws and regulations.

6. Technical information

6.1. Technical data sheet

GENERAL

Property	Method	Unit	QUINN HIPS Glossy/Matt	QUINN HIPS Matt/Matt
Density	ISO 1183	g/cm³	1,05	1.05
Burning resistance	UL standard 94		94 HB	94 HB

MECHANICAL

Property	Method	Unit	QUINN HIPS Glossy/Matt	QUINN HIPS Matt/Matt
Flexural modulus	ISO 178	MPa	1850	1800
Flexural strength	ISO 178	MPa	34	32
Tensile modulus	ISO 527-2	MPa	1730	1670
Tensile strength	ISO 527-2	MPa	24	20
Elongation at break	ISO 527-2	%	2.9	42
Stress at break	ISO 527-2	MPa	18	16
Ball indentation hardness	ISO 2039-1	N/mm²	80	80

THERMAL

Property	Method	Unit	QUINN HIPS Glossy/Matt	QUINN HIPS Matt/Matt
Vicat temperature (B 50)	ISO 306	°C	92	91
Heat deflection temp. (A)	ISO 75-2	°C	82	84
Linear thermal expansion	DIN 53752	$K^{-1}x10^{-5}$	8	8
Service temperature - continuous use	DIN 52612	°C	70	70
Thermal conductivity	ISO 11501	W/mK	0.16	0.16
Dimensional change on heating (4 mm)	ISO 14631	%	5	5.5

ELECTRICAL (raw material specifications)

Property	Method	Unit	QUINN HIPS Glossy/Matt	QUINN HIPS Matt/Matt
Volume resistivity	IEC 93	Ωcm	$>10^{16}$	$>10^{16}$
Surface resistivity	IEC 93	Ω	$>10^{13}$	$>10^{13}$
Dielectrical strength	IEC 243-1	kV/mm	155	155
Dielectrical constant at 100Hz-1MHz	IEC 250		2.5	2.5
Dissipation factor at 100Hz-1MHz	IEC 250		10^{-4}	10^{-4}

IMPACT RESISTANCE

Property	Method	Unit	QUINN HIPS Glossy/Matt	QUINN HIPS Matt/Matt
Charpy notched glossy side impacted	ISO 179-1/1fA	KJ/m²	9	-
Charpy notched matt side impacted	ISO 179-1/1fA	KJ/m²	6	10

Note: all mentioned data is based on extruded sheets in a thickness of 4 mm

6.2. Product range QUINN HIPS

Standard Matt/Matt (FMM type)

Type	Thickness	Max. sheet width	Max. sheet length
Smooth	0,70 – 6,00 mm	2050 mm	3050 mm
Embossed	1,50 – 4,00 mm	1400 mm	3050 mm

Standard product is supplied without protection foil: on request the sheets can be protected with PE glued foil on one or both sides.
Surface finish: FMM sheets typically have a matt surface finish with a gloss value between 10 and 25 units (measured at 60° according to ISO 2813). On request FMM sheets can be made gloss improved.
Available embossed surface: SMART, PINSEAL, CRISTAL

Standard Matt/Gloss (FMG type)

Type	Thickness	Max. sheet width	Max. sheet length
Smooth	1,50 – 6,00 mm	2050 mm	3050 mm

Standard production sheets are protected with a PE thermoformable protection film on the glossy side only.
Surface finish: FMG sheets have a GPPS (general purpose polystyrene) layer with a gloss level of above 85 units (measured at 60° according to ISO 2813) on one side and on the other a matt HIPS finish. The gloss layer has a thickness of approx. 5-7% of the total sheet thickness.

Standard minimum sheet size
Minimum size for all sheets is:1000 x 500 mm

Colour range
A range of colours is available. Other shades can be matched using the latest state-of-the-art Spectrophotometer technology on customer request. For minimum quantities see further.

Standard product tolerances
All sheets are made to size on-line by a knife or guillotine cut. This means no secondary cutting which could create marks during thermoforming or printing.

- Thickness: +/- 0.1 mm
- Length: +/- 3 mm
- Width: +/- 1.5 mm

Required minimum quantities
Unless agreed on a contract basis, no goods are held on stock.
Therefore we need minimum quantities for production in order to optimize productivity and to guarantee the most competitive prices. These are:

- 1 ton for a thickness change
- 0,5 tons for a dimension (length and width) change
- 5 tons for a colour change (existing colour)
- 10 tons for a change from FMM type to FMG type, for a new colour match and for other special changes/requests like UV stabilization, gloss improved FMM sheets, raw material grade change

Return of off cuts
Special contracts can be established and agreed for the return of off-cuts.