X4300 PRODUCT DATASHEET
PPH VIRGIN

DESCRIPTION

Perspex South Africa Polypropylene Homopolymer (PPH) has excellent physical characteristics, particularly for applications where stiffness and high heat resistance is important. It can be easily thermoformed or fabricated. It's chemical resistance is excellent and has a very low moisture vapour permeability, ideal as a barrier to water. Compared to the Polypropylene Block Copolymer it is stiffer which can allow for down gauging, and has higher heat resistance. It is typically used in packaging layer boards applications.

APPLICATIONS

Layer boards, Packaging, Containers, Automotive, Construction, Flooring/Wall Cladding, Chemical Tanks, Fabrication.

KEY FEATURES

Certification/Approvals

The certification is available on request and must be specified during ordering.

Thermoforming

Excellent thermoforming ability.

Printing/Painting

Due to its high chemical resistance it needs to be corona treated or primed for ink adhesion. Laser printed logo's are available for layer board application.

Conversion

Glueing: Hot - melt or PUR glue, corona treatment is recommended. Welding preffered option.

Cutting: Guillotine, Band-saw, Circular-Saw, Routing.

Welding: Thermal, Ultrasonic and Hot Gas.

PRODUCT SPECIFICATIONS

Colour

Various Colours and colour matching. Green, Blue, Natural are common.

Thickness

1.5mm to 8mm

Finish

Gloss and a collection of embossed finishes.

Sheet Size Specifications

Gauge	Width
0.8mm to 8mm	500 - 1500 mm

NB: Available sizes vary depending on gauge, colours, and order size, please ask confirmation to sales department.

TYPICAL PHYSICAL PROPERTIES*

Properties	Unit	Standard	Method	Value
Density #	g/cm^3	ISO 1183	-	0.94
CaC03 %	%		In house	0
Tensile strength at Break	MPa	ASTM D6693	50 mm/min	35.2
Hardness	MPa	Shore D		77
Bend Strength	kgf	In house	50 mm/min	26
Melting Temperature	°C	ISO 11357-3	DSC	163
Thermal Analysis	%	ASTM E1131	TGA	>0.45

#The density quoted should only be used as a guide. This value can change depending upon the type and quantity of pigments or additives used. Due to the flexible nature of extruded twin wall polypropylene (PP), absolute flatness cannot be guaranteed.

Typical commercial quality guidelines allow the following approximate variations when measured on a flat table:
• Flatness: sheets are supplied with a flatness tolerance of ±2 to ±6 mm depending on sheet size and thickness.

PRODUCT AVAILABILITY

Thermoforming

Compared to High Impact Polystyrene (HIPS), PP tends to require greater heating and cooling cycle times. Typical thermoforming temperatures are between 150 to 190°C. It is also susceptible to distortion, sagging and shrinkage, therefore thermoforming equipment with good heating and vacuum control is recommended. PP has very low moisture absorption, and pre-drying is not normally required. Due to its low melt strength sagging can occur, which can cause 'webbing' particularly with shallow forming. Pressure balancing vacuum forming machines are ideal, or alternatively webbing blocks to remove excess material from the mould. To reduce distortion issues the tool should be Aluminium, which is temperature controllable. Typical mould temperature of 35 - 60°C, and the moulded article temperature should be below 90°C before removing from the mould. Mould shrinkage is typically 1.5 to 2.5%.

Fabrication

It can be fabricated using standard plastic methods of fixing and machining. Sheet can be cut with a band/circular saw and drilled using standard metal working tools. PP can be riveted, welded and punched. PP can easily be welded by hot gas welding (hot air temperature 280 - 330°C) and by hot plate welding (200 - 220°C). High frequency welding is not possible. Routered edges to ensure rounded corners and edging is done online as well.

Cleaning and Maintenance

Typical detergents and soaps dissolved in warm water can be used to effectively clean surface contamination from the surface. For the more stubborn marks organic solvents such as isopropyl alcohol and n-heptane will be more effective.

UV Resistance

In outdoor or strong UV light conditions, natural PP can become brittle in a matter of months. Black pigmentation will improve UV resistance. The addition of UV stabiliser additives will significantly improve longevity. Please contact our Sales office to discuss further. Layer boards do contain a portion of UV additives in the mix.

#Please contact the sales office to discuss any further requirements.

CHEMICAL RESISTANCE

Chemical resistance is influenced by many factors, including concentration, temperature, exposure time and material stress.

Reagent	Chemical Resistance	Reagent	Chemical Resistance
Acetone	Very Good	Beer	Excellent
Acid - weak	Very Good	Brake Fluid	Very Good
Acid - strong	Very Good	Coffee	Excellent
Alcohol	Very Good	Detergent	Excellent
Anti-freeze (glycol free)	Excellent	Diesel	Good
Base - weak	Excellent	Foodstuffs	Excellent
Base - strong	Good	Lubrication Oil	Good
Battery Acid	Very Good	Petrol	Good

***NOTE** The information contained in this leaflet is based on our present technical knowledge and experience. In view of the large number of factors that may influence the processing and use of our products, the information does not relieve the processors and manufacturers of the need to carry out their own tests and experiments. Our information does not constitute a legally binding assurance of product availability, of properties or of a suitability for a particular end use. Patent rights that may exist must be duly observed.

ADDITIONAL INFORMATION

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