

## Technical Data Sheet PRIME-EX X1 & X2 HMPP TAG

**PRIME-EX X1 & X2 HMPP TAG** Is Polypropylene sheet specially formulated to replace HIPS for UV offset printed horticulture labels.

Main applications are plant tags and horticultural labels and other cards.

Embossing		HMPP Gloss matt	HMPP Gloss Satin	HMPP Gloss Peach
Primer X1 & X2		Applied on gloss side or both sides		
Top (sides can be reversed on request)		Gloss	Gloss	Gloss
Bottom		Matt Ra 3-4 $\mu$	Satin Ra 1-1.5 $\mu$	Peach Ra 0.4-0.5 $\mu$
Thickness $\mu$ m		300-800		
Thickness tolerance $\mu$ m		+10-30		
Size tolerance mm		Tight tolerance for offset See Figure1		
Specific Gravity	White opaque (B)	350-500 $\mu$ m	0.96 SG vary from 0.94-1 depends on opacity and thickness	
Coefficient of thermal expansion		10 <sup>-4</sup> /K 5-80°C	1 mm for each meter for change of 10°C	

Property	Method	Unit	Value
Tensile Strength at Yield	ISO 527-2	MPa	36
Elongation at Yield	ISO 527-2	%	9
Tensile modulus	ISO 527-2	MPa	1900
Flexural modulus	ISO 178	MPa	1950
Izod Impact Strength (notched)at 23°C	ISO 180	kJ/m <sup>2</sup>	5
Charpy Impact Strength (notched)at 23°C	ISO 179	kJ/m <sup>2</sup>	9
Melting Point	ISO 3146	°C	165°C
Vicat Softening Point	ISO 306	50N-50°C per hour	85 °C
		10N-50°C per hour	150 °C
Heat Deflection Temperature	ISO 752	1.80 MPa-120°C per hour	58 °C
		0.45 MPa - 120°C per hour	100 °C
Hardness Rockwell - R-scale	ISO 2039-2		96
Tear—Simulation of cord	Internal EXTEN	N/mm (HIPS 50-100N)	400

**Color and opacity:** select color from EX-P color palette SG varies according to color and thickness.

**Fragility in cold environment: HMPP** is rigid and brittle in freeze temperature. Take care when selecting application.

**Surface:** Please state which side to be on top. EX-P will produce according to client request.

The gloss side is primed for offset printing. The primer guarantees printing for 12 month after production date.

The other side is corona treated or primed according to order specification.

The corona level is 38-40 dyne for 12 month after production date.

**Inks:** Use UV inks for corona treated PP Always check carefully if ink is suitable to the job and process.

**Cutting and creasing:** Acclimate the sheets to room temperature before converting (also in the core of the pallet). For label production use cannon press and drill. Cutting on flat bed requires high pressure due to the high hardness of the sheet. Sharp tools are essential in order to avoid brakes and cracks. The sheet is brittle in cold temperature so when cutting make sure that the sheet is not too cold.

**Foil blocking:** use zinc or brass stamp. Select foils suitable for plastics and for the required print resolution.

Preliminary test of the foil must be taken

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It is possible to laminate the sheet with foil in order to have a metallic surface. Gloss or satin are recommended.

**Heat bending:** it is possible to bend the sheet at any angle desired with heat bending machine. Glow wire and hot bar  
Typical value for hot bar: thickness ~0.5mm; Dwell time 2 sec; Bar temperature 230-250 °C

**Welding: HMPP** heat contact welding is not welding the coated side. Hot plate & Ultrasonic welding works if the tool knurling is rough and penetrates through the primer and printing.

**Bonding:** Use hot melt PUR on automatic folding gluing lines. Carefully select glue and gluing conditions in order to avoid bubbles and glue yellowing.

Other glues may work, depends on the technical requirements and to what substrates.

**Conformity:** Not confirmed to direct food contact.

Norm	Toy safety Directive 2009/48/EC Flammability & Migration	COMMISSION REGULATION (EU) No 10/2011	RoHS Directive 02/95/EC	Heavy metals Directive 94/62/EC
	Yes	No	Yes	Yes

**Storage:** store in dry and shaded place. In case of corona treated, do not store at temperature higher than 25°C  
printability deteriorates.

**Recycling:** Production rejects and waste should preferably be recycled instead of being disposed. The sheets are degradable by exposure to UV light and combustion. Sheets are not biodegradable.

Figure 1

