

Data Sheet

SKYGREEN J Series

High clarity co-polyester with improved impact and chemical resistance

FEATURES:

- Excellent Clarity & High Gloss
- Excellent Impact Strength
- Outstanding Chemical Resistance
- Environment Friendly

GRADES:

- J2003 : Standard grade for sheet extrusion
- JN100 : Standard grade for EBM, injection moulding
- JN200 : High flow grade for injection moulding

Injection Moulded Properties (ASTM Method)

Properties	Test Method	Unit	Typical Values
Physical			
Specific Gravity	ASTM D792	-	1.23
Rockwell Hardness	ASTM D785	R scale	105
Water Absorption (24 hr immersion)	ASTM D570	%	0.13
Mechanical			
Tensile Strength @ Yield 50mm/min (2 inch/min)	ASTM D638	MPa (kgf/cm ²)	45 (460)
Tensile Strength @ Break 50 mm/min (2 inch/min)	ASTM D638	MPa (kgf/cm ²)	53 (540)
Elongation @ Yield 50 mm/min (2 inch/min)	ASTM D638	%	5.0
Elongation @ Break 50 mm/min (2 inch/min)	ASTM D638	%	340
Flexural Strength 1.27mm/min (0.05 inch/min)	ASTM D790	MPa (kgf/cm ²)	67 (685)
Flexural Modulus 1.27mm/min (0.05 inch/min)	ASTM D790	MPa (kgf/cm ²)	1800 (18300)
Izod Impact Strength Notched @ 23°C (73°F)	ASTM D256	J/m (kgf.cm/cm)	NB
Thermal			
Heat Distortion Temperature @ 0.455 MPa (66 psi) @ 1.82 MPa (264 psi)	ASTM D648	°C (°F)	74 (165) 64 (147)
Optical			
Haze	ASTM D1003	%	< 1.0
Total Transmittance	ASTM D1003	%	91
Flammability			
UL Flammability Classification @ 3.0mm thickness	UL 94	-	HB

The data listed here consists of preliminary data for this range of products. Therefore this data should not be used to establish specification limits or be used alone as a basis for design. This information is not intended as a warranty of any kind. Customers must make their own representative tests and assume all risks of use, whether used alone or in combination with other products. SK Chemicals assumes no obligation or liability for any advice furnished or results obtained with respect to these products. All warranties of merchantability for particular purpose or use are excluded and disclaimed.

Processing Conditions for Injection Moulding

Drying Conditions

- Drying Temperature : 70°C.
- Drying Time : Min. 4 hours / Max. 10 hours.
- Air Flow of Dry Air : > 0.065 m³/min per kg/h (1 cfm per lb/h).
- Dew Point of Dry Air : < -30°C, -40°C is better for good drying.
- Residual Moisture Content : < 0.05% (500 ppm).

Problems caused by insufficient drying

- Molecular Weight (I.V.) reduction of the polymer and degradation of any additives.
- Adverse effect on the colour of the final product.
- Difficult control of processing parameters such as melt pressure and power consumption.
- Bubbles and silver streaks.

Drying hopper recommendation

- Capacity of hopper : 6 to 12 times extruder output.
- Height/Diameter ratio : > 2:1, 3:1 is better for plug flow.
- Insulation : Insulate well to improve efficiency.
- Monitoring : Air temperature and dew point at the air inlet.

General Guidelines

- Injection speed : Slow to medium speed.
- Screw speed : Low screw speed of 50 to 100 rpm.
- Cushion size : Minimum cushion size (3 – 13mm).
- Decompression : To minimise drooling.
- Back Pressure : 0.3 – 1 MPa (50 – 150psi) is sufficient to produce uniform metering & eliminate air entrapment.
- Hold Pressure/Time : To eliminate sink marks or voids, but avoid overpacking.
- Purge : PETG is the most effective material.

Screw Design

- General purpose screw type.
- Compression Ratio: 2.5:1 – 3.5:1
- L/D: over 18:1 – 20:1
- Ring type non-return valve is preferred.

Temperature Control

- Cooling of feed bush is needed to prevent sticking problems.
- Advantages of mould and sprue bushing control:
 - Reduces cycle time.
 - Reduces warpage & residual stress.
 - Increases ejection capacity.

Typical Processing Conditions

- Clamp force: 75 Ton, Shot size: 5.2 oz
- Cylinder temperature

	Mould	Nozzle	C2	C3	C4	Feeding
°C	40	260	260	260	255	255
°F	104	500	500	500	491	491

- Injection conditions
 - Injection time : 2.0 sec
 - Holding time : 15 sec
 - Cooling time : 15 sec
 - Stroke : 62 mm

Processing conditions shown above are a typical processing profile and may vary somewhat in other similar applications.

The information in this technical data sheet is provided in good faith and is based on our present state of knowledge. It is intended to provide general notes on the properties, processing and use of our products. It should not therefore be construed as guaranteeing any specific properties of the products described or their suitability for any particular application.