

Data Sheet

SKYGREEN PETG S2008

High clarity general-purpose grade co-polyester

FEATURES:

- Excellent Clarity & High Gloss
- High Impact Strength
- Excellent Chemical Resistance
- Easy to Process
- Environment Friendly

APPLICATIONS:

- Injection Moulding
- Extrusion-blow Moulding
- Sheet Extrusion

Injection Moulding Properties – ASTM Method

Properties	Test Method	Unit	Typical Values
Physical			
Specific Gravity	ASTM D792	-	1.27
Mould Shrinkage (parallel to flow)	ASTM D955	%	0.3-0.6
Rockwell Hardness	ASTM D785	R scale	110
Water Absorption (24 hr immersion)	ASTM D570	%	0.13
Mechanical			
Tensile Strength @ Yield 50mm/min (2 inch/min)	ASTM D638	MPa (kgf/cm ²) psi	50 (510) 7300
Tensile Strength @ Break 50 mm/min (2 inch/min)	ASTM D638	MPa (kgf/cm ²) psi	28 (290) 4100
Elongation @ Break 50 mm/min (2 inch/min)	ASTM D638	%	140
Flexural Strength 1.27mm/min (0.05 inch/min)	ASTM D790	MPa (kgf/cm ²) Psi	73 (745) 10600
Flexural Modulus 1.27mm/min (0.05 inch/min)	ASTM D790	MPa (kgf/cm ²) psi	2100 (21500) 305000
Izod Impact Strength Notched @ 23°C (73°F)	ASTM D256	J/m (kgf.cm/cm) Ft.lbf/in	100 (10.2) 1.88
Impact Resistance (Puncture Energy) Max. Load in 3.2mm (0.125 inch) plaque @ 23°C (73°F), 220m/min	ASTM D3763	J Ft.lbf	33 24
Thermal			
Heat Distortion Temperature @ 0.455 MPa (66 psi) @ 1.82 MPa (264 psi)	ASTM D648	°C (°F)	70 (158) 64 (147)
Vicat Softening Temperature @1kg load	ASTM D1525	°C (°F)	85 (185)
Glass Transition Temperature (Tg)	DSC method	°C (°F)	80 (176)
Electrical			
Dielectric Strength (Short-time, 500v/sec)	ASTM D149	kV/mm (V/mil)	16 (410)
Volume Resistivity	ASTM D257	Ohm.cm	10 ¹⁵
Surface Resistivity	ASTM D257	Ohm	10 ¹⁶
Dielectric Constant	@ 1 MHz @ 1 kHz	ASTM D150	- 2.6 2.4
Dissipation Factor	@ 1 MHz @ 1 kHz	ASTM D150	- 0.005 0.023
Flammability			
UL Flammability Classification @ 1.6 mm thickness @ 3.2 mm thickness	UL 94	-	HB V-2

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.

Processing Conditions for Injection Moulding

Drying Conditions

- Drying Temperature : 65°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 type design.
- Compression Ratio: 2.5:1 – 3.5:1
- L/D: 18:1 – 20:1
- Ring-type non-return valve preferred.

Temperature Control

- Cooling of feed bush is needed to prevent sticking problems.
- Mould temperature 15°C to 40°C (59°F to 104°F)
- Advantages of mould and sprue bush temperature control:
 - Reduces cycle time.
 - Reduces warpage & residual stress.
 - Increases ejection efficiency.

Typical Processing Conditions

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

	Mould	Nozzle	C2	C3	C4	Feeding
°C	40	245	245	245	210	240
°F	104	473	473	473	410	464

- 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.