

TOTAL PETROCHEMICALS

MATERIAL DATASHEET

Total Petrochemicals Polystyrene 814

UV Stabilised V0 @ 1.5 mm, 5VA @ 2.5 mm Non-Deca Polystyrene

Total Petrochemicals Polystyrene 814 is a heat resistant, UV Stabilised V0 Non Deca Polystyrene for injection molding.
It is recommended for the manufacturing of articles which require good dimensional stability at elevated temperature.

Suitable Applications for Total Petrochemicals Polystyrene 814 includes TV Covers, printers, scanners and electrical appliances.

Properties	Test Method	S.I.		Metric		English	
		Value	Units	Value	Units	Value	Units
RHEOLOGICAL							
Melt Flow Index (200 °C - 5 kg)	ASTM D-1238	0.0065	kg/ 10 min	6.50	g/ 10 min	1.43E-02	lb/ 10 min
Spiral Flow (220 °C)	ASTM D-3123	0.47	m	47	cm	18.50	in
THERMAL							
Vicat Softening Point 10N (T increase = 50 °C/h)	ASTM D-1525	370	K	97	°C	207	°F
Heat Distortion Temperature	ASTM D-648	358	K	85	°C	185	°F
Coefficient of Linear Thermal Expansion (10 ⁻⁵)	ASTM D-696	3.25E-05	m/K	8.90	mm/°C	1.04E-02	in/°C
Ball Pressure Test (2.00 mm)	JET	358.15	K	85.00	°C	185.00	°F
MECHANICAL							
Notched Izod Impact Strength	ASTM D-256	7.00	kJ/m ²	6.50	kg-cm/cm	1.19	ft-lb/in
Tensile Strength at Yield	ASTM D-638	22	MPa	220	kg/cm ²	3254	psi
Tensile Strength at Break	ASTM D-638	24	MPa	240	kg/cm ²	3549	psi
Elongation at Break	ASTM D-638	50	%	50	%	50	%
Tensile Modulus	ASTM D-638	2000	MPa	20000	kg/cm ²	290155	psi
Flexural Modulus	ASTM D-790	2000	MPa	20000	kg/cm ²	290155	psi
Rockwell Hardness	ASTM D-785	R83	-	R83	-	R83	-
ELECTRICAL							
Dielectric Strength	ASTM D-149	160000	kV/m	160	kV/mm	4064	kV/in
Surface resistivity	ISO IEC 93	>10e+13	Ohms ⁻¹	>10e+13	Ohms ⁻¹	>10e+13	Ohms ⁻¹
MISCELLANEOUS							
Density	ASTM D-792	1150	kg/m ³	1.15	g/cm ³	71.78	lb/ft ³
Mold Shrinkage	ASTM D-955	0.4 - 0.7	%	0.4 - 0.7	%	0.4 - 0.7	%
Water absorption	ASTM D-570	0.04	%	0.04	%	0.04	%



RECOMMENDED INJECTION MOLDING PARAMETERS

Barrel Temperature	Value	Units	Mold Temperature	Value	Units
Zone 1	160 - 180	°C	Fixed Half	30 - 50	°C
Zone 2	180 - 200	°C	Moving Half	10 -- 30	°C
Zone 3	190 - 210	°C	Injection Pressure	200 - 400	Bars
Zone 4	200 - 220	°C	Hold on Pressure	20 - 80	Bars
Nozzle	210 - 230	°C	Screw Back Pressure	10 - 50	Bars
			Screw Speed	50 - 200	RPM
			Pre Drying Temperature for 2 hours	70	°C

General Information :

Standard Properties: All Tests are carried out at 23 °C unless otherwise stated. Mechanical properties are measured on injection moulded test specimens

Bulk Density: Bulk Density of all Natural grades is approximately 0.6 g/cm3

Total Petrochemicals Polystyrene 814 should be kept in a cool and dry place. Avoid direct exposure to sunlight.