

ACRYLITE® Optical

ACRYLITE® Pure Optical Quality (POQ)

Product

ACRYLITE® Optical POQ compounds are specialty crystal-clear acrylic polymers that provide high optical purity for applications that require high transmission efficiency in long light paths.

ACRYLITE® Optical POQ compounds are available in three grades: POQ66, POQ64 and POQ62. The grades differ in flow properties, which are adjusted to optimize the results for different processing methods.

ACRYLITE® Optical POQ molding compounds achieve the maximum purity in acrylic polymers. These compounds use proprietary purification processes that ensures the polymers are free of any visible dust, fines and contaminant. The specialty compounds provide the high optical purity needed for applications that require high transmission efficiency in long light paths. The low absorption coefficient characteristics provide

the best possible outcome for sophisticated light pipes, and edge-lit, interior lighting lenses.

ACRYLITE® Optical POQ compounds have formulation refinements that further ensure its high optical pureness. Millions of pounds of ACRYLITE® Optical POQ have been sold into the manufacture of optical light guides for backlight units in TFT-LCE displays. Specially designed packaging options ensure that purity is maintained during delivery.

ACRYLITE® Optical POQ compounds are excellent for long path light guide applications but they should not be used for outdoor applications and are engineered to be used with LED lighting sources.

Packaging Options

ACRYLITE® Optical POQ is available in 375 lb Drums, Gaylords and other options on request.

ACRYLITE® Optical POQ - Chart 1

Material		Melt Volume Rate <i>(ISO 1133)</i>	Vicat Softening Temp <i>(ISO 306)</i>	Deflection Temp. Under Load <i>(ISO 75)</i>
POQ66	Suitable for extrusion Balanced combination of melt elasticity & flow properties High heat deflection temperature under load Good mechanical properties for post treatment (sheet)	2.3	104 (°C)	94.5 (°C)
POQ64	Suitable for injection (comp.) molding: Excellent flow properties Optimized de-molding behavior Accurate reproduction of mold surfaces	9.0	104 (°C)	97 (°C)
POQ62	Suitable for injection (comp.) molding & co-extrusion: Outstanding flow properties Highly accurate reproduction of microstructures	21.0	97 (°C)	91 (°C)

Properties by ISO Test Method – Chart 2

Property	ACRYLITE® Optical			
	Standard	POQ66	POQ64	POQ62
OPTICAL				
Luminous transmittance D65 %	ISO 13468-2	92	92	92
Refractive Index	ISO 489	1.49	1.49	1.49
RHEOLOGICAL PROPERTIES				
Melt Volume Rate, MVR 230°C & 3.8kg cm ³ / 10min	ISO 1133	2.3	9	21.0
MECHANICAL				
Tensile Modulus, 1 mm / min (Mpa)	ISO 527	3200	3300	3300
Stress @Break, 5mm / min (Mpa)	ISO 527	69	49	63
Strain @ Break, 5 mm / min %	ISO 527	4	1.8	2.8
Charpy Impact Strength (kJ/m ²)	ISO 179 / 1 eU	20	17	20
PHYSICAL				
Deflection Temperature Under Load 1.8 MPa °C	ISO 75	94.5 (°C)	97 (°C)	91 (°C)
Vicat Softening Point, B / 50 °C	ISO 306	104 (°C)	104(°C)	97 (°C)
Density g / cm ³	ISO 1183	1.19	1.19	1.19
Water Absorption % Max.	ISO 62	<2	<2	<2
Coeff. Of Linear Therm. Exp. Parameter: 0 – 50°C Unit: E-5 / °K	ISO 11359	8	8	8
Fire Rating	DIN 4102	B2	B2	B2
Flammability UL 94 1.6mm Class	IEC 707	UL 94 HB	UL 94 HB	UL 94 HB



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