

LUCITE® DIAKON® FROST

Lucite Diakon Frost is an acrylic polymer primarily designed for sheet, profile and tube extrusion where a textured surface and unique diffusing properties are key requirements. This makes Lucite Diakon Frost particularly suitable for a wide range of lighting and display applications.

Optical properties

Lucite Diakon Frost products combine the benefits of maximum light transmission and diffusing properties – enabling light output to be maintained even when strong light source hiding is also required.

Surface Aesthetic

The textured surface provides a matt, non-glossy effect giving a cool, soft look and feel with excellent scratch resistance.

Processing

All grades can be processed in the same way as standard Lucite Diakon, without requiring changes to existing process equipment or conditions.

Property Retention

Extruded sheet manufactured from Lucite Diakon Frost retains excellent definition and light diffusing characteristics after thermoforming.

Weathering

The excellent weathering performance of Lucite Diakon Frost makes it suitable for many demanding applications.

Grade Range

Available in a range of melt flow PMMA polymers.

Versatility

Can be blended with standard Lucite Diakon grades to produce a range of surface and transmission effects.

Unique Frost Grades

Bespoke Lucite Diakon Frost grades can be designed to meet your specific requirements.

LUCITE® DIAKON® FROST

Unique optical properties with excellent filament hiding/diffusivity

- ❑ Lucite Diakon Frost 902 51 nat 111 - easy melt flow for profile extrusion
- ❑ Lucite Diakon Frost 952 51 nat 111 - sheet extrusion grade

Optimised combination of total light transmission and diffusivity

- ❑ Lucite Diakon Frost 902 70 nat 111
- ❑ Lucite Diakon Frost 902 80 nat 111

- ❑ Lucite Diakon Frost 952 70 nat 111
- ❑ Lucite Diakon Frost 952 80 nat 111

Grade	Maximum Light Transmission	Maximum Diffusivity	Profile Extrusion	Sheet Extrusion
Frost 902 70 nat 111		✓	✓	
Frost 902 80 nat 111	✓		✓	
Frost 952 70 nat 111		✓		✓
Frost 952 80 nat 111	✓			✓

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Lucite Diakon Frost technology has combined the benefits of maximum light transmission and high diffusing power - enabling light output to be maintained even when the hiding of the light source itself is also required. This demonstrates dramatic improvements when compared to traditional methods of opal pigmentation.

Figure 1

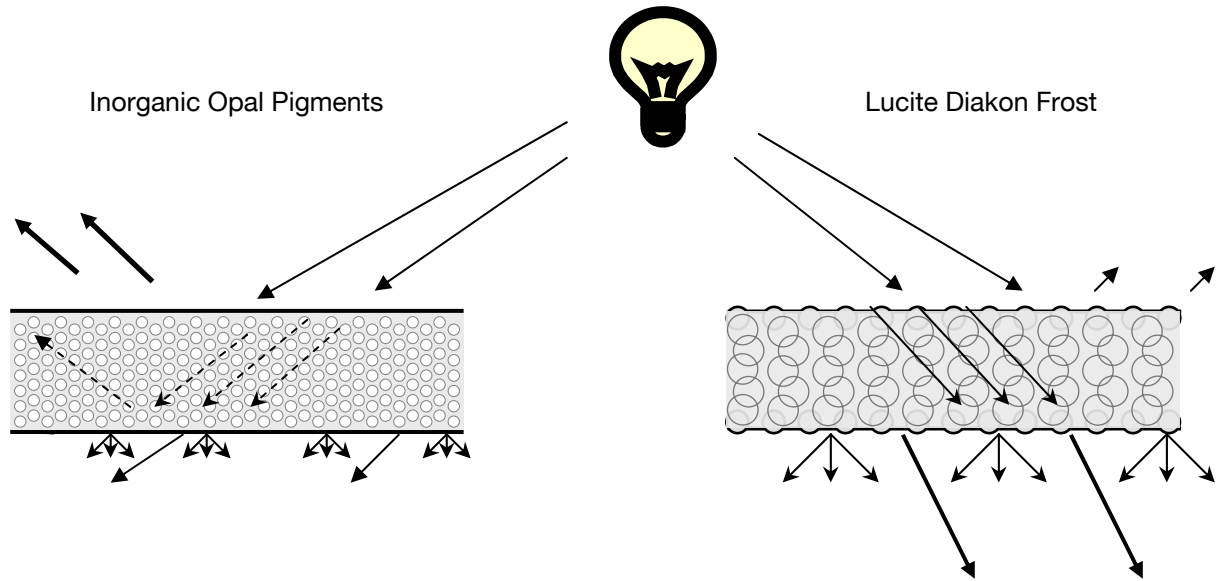
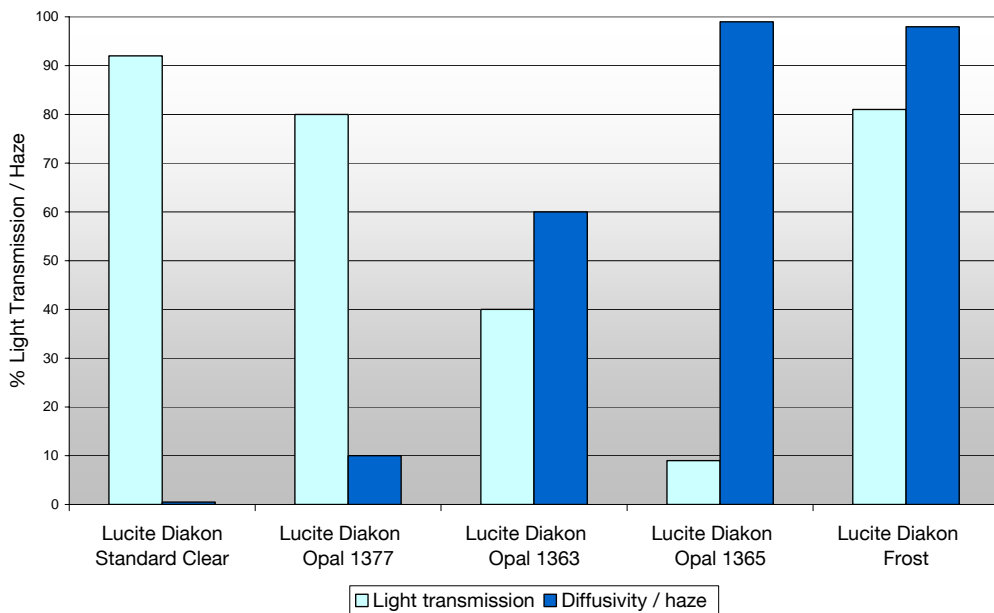


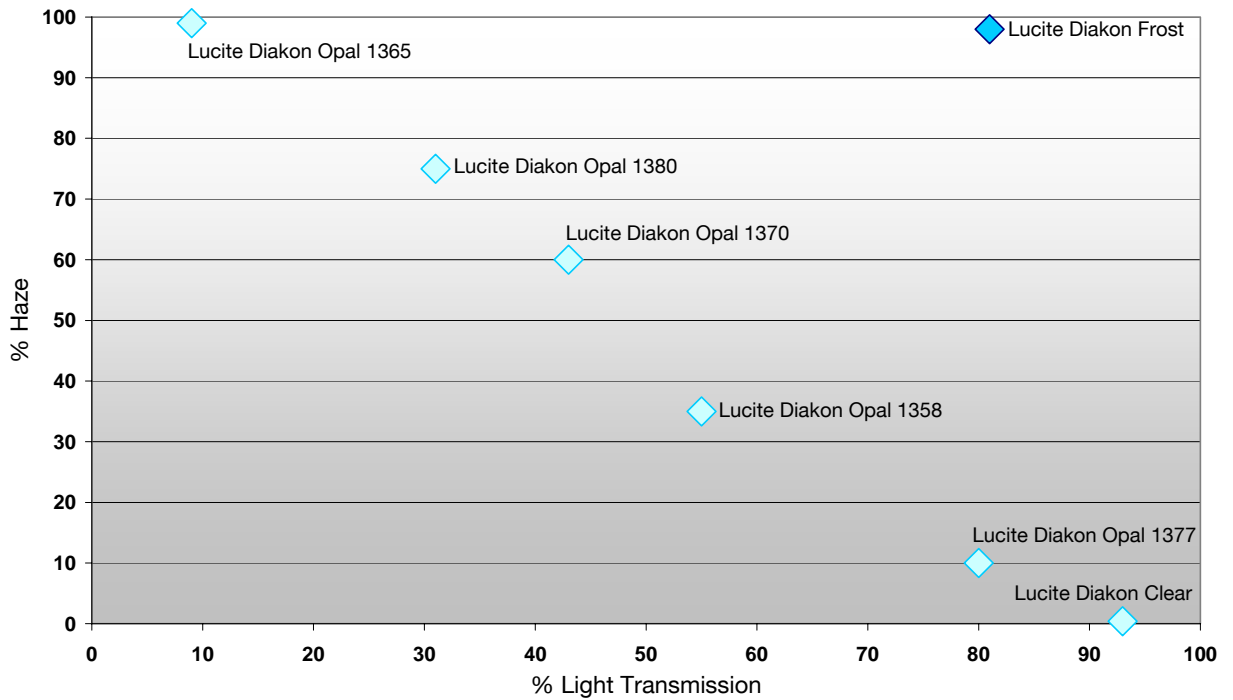
Figure 2



LUCITE® DIAKON® FROST

Lucite Diakon Frost grades can be created to match your particular light output and diffusivity requirements. Different lighting and display designs require a variety of light transmission or filament hiding properties which may be defined by part thickness or light source type and proximity to the PMMA sheet or profile.

Lucite Diakon Frost technology can be utilised to create bespoke grades which meet customer requirements which may not be achievable with traditional methods of opal pigmentation which is sometimes limited in terms of optimal light output properties.



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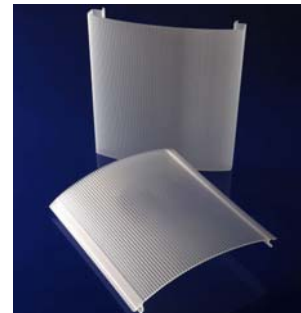
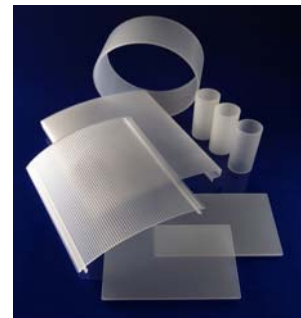
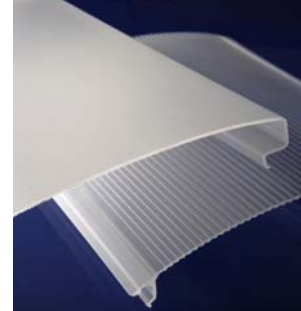
Application areas include:

- ❑ Bathroom / kitchen lighting
- ❑ Point of Purchase
- ❑ Decorative lighting
- ❑ Safety lighting

Lucite Diakon Frost is particularly recommended for lighting and point of purchase applications, where light output, filament hiding, soft surface texture and resistance to scratching are key material requirements.

Applications such as lighting profiles produced via profile or sheet extrusion are increasingly demanding better optical performance from the polymer of choice.

Lucite Diakon Frost offers this enhanced optical performance whilst retaining the usual properties that can be expected from more standard grades – ease of processing, scratch / solvent resistance and weatherability.



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PROPERTY	TEST METHOD	UNITS	LUCITE DIAKON FROST					
			902 51	952 51	902 70	952 70	902 80	952 80
OPTICAL								
Light Transmission	ASTM D1003	%	74	74	80.5	80.5	87.3	87.3
Haze	ASTM D1003	%	66	66	97.5	97.5	88.8	88.8
THERMAL								
Melt Flow Index	ISO 1133	gms/10mins	5.5	1.3	5.8	1.5	5.8	1.5
Vicat Softening Point	ISO 306A	°C	108	109	106	108	106	108
	ISO 306B	°C	102	102	100	101	100	101
Heat Deflection Temperature	ISO 75A	°C	97	96	95	95	95	95
	ISO 75B	°C	100	100	99	99	99	99
MECHANICAL								
Tensile Strength	ISO 527	MPa	80	73	52	72	52	72
Elongation	ISO 527	%	5	4	2.6	6.4	2.6	6.4
Flexural Modulus	ISO 178	GPa	3.1	3.4	3.1	3.2	3.1	3.2
Flexural Strength	ISO 178	MPa	98	103	88	120	88	120
Izod Impact Strength	ISO 180/1A	kJ/m ²	1.3	1.6	1.4	1.6	1.4	1.6
Charpy Impact Strength	ISO 179/1eU	kJ/m ²	11	10	12	22	12	22
GENERAL								
Relative Density	ISO 1183	-	1.19	1.19	1.20	1.19	1.20	1.19
Flammability	UL94		HB	HB	HB	HB	HB	HB
Water absorption	ISO 62	%	0.3	0.3	0.3	0.3	0.3	0.3

* M Scale. The above data represents typical results obtained using standard test pieces, it should not form the basis of specifications.

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Users of Lucite Diakon should consult the relevant Material Safety Data Sheet.

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