

# shinkolite<sup>lx</sup> aviation grade

## TECHNICAL BULLETIN

Shinkolite is the registered trade name of Mitsubishi Rayon's cast acrylic sheet, consisting of Shinkolite L and LX type. Shinkolite L and LX is the trade name of continuous, cast acrylic sheet developed by Mitsubishi Rayon.

Shinkolite has many excellent characteristics such as clarity transparency, beautiful color, and light in weight, weatherability, impact resistance, and good formability. As it is the most gorgeous and magnificent in all of the plastics, it is used for light fixture, building material, furniture, industrial material, aviation, signboard, daily necessities, and so on Shinkolite LX has successfully passed the major standards listed below.

- Flammability standard 92HB approved by Underwrites Laboratories Inc.
- ASTM D4802, Category A-2, finish 1 agency code, LP391D.

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### WATER CLEAR

Colorless Shinkolite is as clear as a rock crystal. Its light transmittance rate of 93 percent means that Shinkolite is the clearest material available in the market.

### WEATHER-RESISTANCE

Shinkolite has an extremely excellent resistance to sunlight, weather, and both high and low temperatures. Outdoor exposure test for all kinds of Shinkolite has been done both in a desert district of the U.S. and in MCR/s laboratory.

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### EASY FORMABILITY

Being a thermoplastic, Shinkolite becomes soft when heated, and hard when cooled. The thermal conductivity of Shinkolite is as small as that of phenolics and only one sixth of that of glass.

### VARIOUS COLORS AVAILABLE

A wide range of transparent colors as well as translucent colors are available. Surface of colored sheet has superior gloss. White translucent colors have a superior light diffusion effect, characteristics of which are made good use in lighting diffuser panel, sky-light-dome, and sign board and so on.

### IMPACT RESISTANCE

Shinkolite has greater impact strength than glass. It is unbreakable and even in the case of breakage it will be safe because it doesn't become small pieces which fly off in different directions like glass.

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*For sales and information,  
please contact Jane Nash  
1-800-4-LUCITE x 2426*

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### CHARACTERISTICS

#### *Tensile Properties*

Typical tensile test is shown in the following chart. Resistance to tensile change with temperature and deforming speed. When stress is put for a longer period, deformation increases with the time due to creep phenomenon.

#### *Surface Hardness*

Generally speaking, the surface hardness of SHINKOLITE is almost the same as that of aluminum. It is harder than some of other plastics sheet but a bit softer than glass. SHINKOLITE may be scratched due to abrasion.

#### *Chemical Resistance*

It is insolvent to inorganic chemicals and normal chained hydrocarbon, but contact with organic solvent causes dissolvment, swelling, hazing and cracking.

### HANDLING AND STORAGE

#### *Exposure to heat*

SHINKOLITE tends to deform when heated up to over 100 C. It should be stored in an area whose ambient temperature does not exceed 80C.

#### *Mechanical damage*

SHINKOLITE has relatively high surface hardness, comparable to aluminum. However, care should be taken not to have the surface scratched during handling. Both surfaces of SHINKOLITE are protected with masking film or paper. It is recommended not to remove the masking until necessary to prevent dust collection and accidental surface scoring or scratching.

#### *Dust Collection*

In care the unmasked surface of SHINKOLITE is rubbed strongly with a dry cloth or the like to remove dust or stain on the surface, and then static charge may build up to collect even more dust on the surface. Use of dampened cloth is recommended to wipe it with, if necessary, to minimize static build-up.

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	Test Procedure	Method		Value	Unit
<b>Optical</b>	Luminous Transmittance	ASTM D1003	JIS K 7361-1	93	%
	Haze	ASTM D1003	JIS K 7136	0.5	%
	Refractive Index	ASTM D542	JIS K 7142	1.49	-
<b>Mechanical</b>	Tensile Strength(rupture)	ASTM D638	JIS K 7162	75	MPa
	Elongation @ rupture	ASTM D638	JIS K 7162	4.5	%
	Flexural Strength (rupture)	ASTM D790	JIS K 7171	120	MPa
	Modulus (elasticity)	ASTM D790 ASTM	JIS K 7171	3.2	GPa
	Rockwell hardness	D785	JIS K 7002-2	100	M scale
	Izod (impact)	ASTM D256	JIS K 7110	2.0	kJ/m <sup>2</sup> kJ/m <sup>2</sup>
	Charpy (impact)	ASTM D6110	JIS K 7111	17	
<b>Thermal</b>	Specific Heat	-	JIS K 7123	1.5	J/g°C
	Deflection Temperature under load	ASTM D648	JIS K 7191-2	96	°C
	Coefficient of thermal expansion	ASTM D696	JIS K 7197	7.E-05	cm/cm/deg
<b>Electrical</b>	Surface Resistivity	ASTM D257	JIS K 6911	>1E16	Ω/sq
<b>Miscellaneous</b>	Abrasion/Mar resistance (Tabor -100 cycles)	ASTM D4060	JIS K 7204	40	% haze
	Specific gravity	ASTM D792	JIS K 7112	1.19	g/cm <sup>3</sup>
	Water Absorption	ASTM D570	JIS K 7209	0.3	%
	Flammability	UL 94	-	HB	
	Intrinsic Viscosity		JIS K 7367-1	cross-linking	l/g

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