



CHawk Technology Intl., Inc.

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Lexan® Polycarbonate, Unfilled, Machine Grade, Extruded

Lexan* polycarbonate is a mechanical grade of extruded polycarbonate that offers high strength, stiffness, and impact resistance with temperature resistance to 290°F. This material also has excellent electrical properties, making it a candidate for both the electronics industry and structural applications requiring transparency. A food grade polycarbonate is also available that is compliant with FDA, NSF, Canada AG, and USP Class VI regulations

MECHANICAL PROPERTIES	ENGLISH VALUES	COMMENTS	METRIC VALUES
Specific Gravity	1.2	ASTM D792	1.2
Tensile Strength, psi	10500	ASTM D638	72 MPa
Tensile Modulus, psi	320000	ASTM D638	2,206 MPa
Elongation, %	100	ASTM D638	100 %
Flexural Strength, psi	13000	ASTM D790	90 MPa
Flexural Modulus, psi	350000	ASTM D790	2,413 MPa
Shear Strength, psi	9200	ASTM D732	63 MPa
Compressive Strength, psi	11500	ASTM D695, 10% Def.	79 MPa
Compressive Modulus, psi	300000	ASTM D695	2,069 MPa
Hardness, Rockwell M	75	ASTM D785	75
Hardness, Rockwell R	126	ASTM D785	126
Hardness, Durometer, Shore D Scale	80	ASTM D2240	80
Izod Impact (Notched), ft-lb/in	1.5	ASTM D256 Type A	80 J/m
Limiting PV, psi-fpm	1000	PTM55007	0.04 MPa-m/sec
THERMAL PROPERTIES	ENGLISH VALUES	COMMENTS	METRIC VALUES
Coefficient of Thermal Expansion, 10E-4/°F	0.39	ASTM E831 (TMA)	0.70 10 ⁻⁴ /K
Deflection Temperature 264 psi, °F	290	ASTM D648	143 °C
Tg-Glass Transition (Amorphous), °F	293	ASTM D3418	145 °C
Continuous Service in Air (Max), °F	250	Without Load	121 °C
Thermal Conductivity, BTU-in/hr-ft ² -°F	1.3		0.19 W/m-K
ELECTRICAL PROPERTIES	VALUES	COMMENTS	METRIC VALUES
Dielectric Strength, Short Term, Volts/mil	400	ASTM D149(2)	16 kV/mm
Surface Resistance, Ohm/Square	1E+13	Lower Limit; EOS/ESD S11.11	1E+13 Ohm/Square
Dielectric Constant, 1 MHz	3.17	ASTM D150(2)	3.17
Dissipation Factor, 1 MHz	0.0009	ASTM D150(2)	0.0009
CHEMICAL PROPERTIES	ENGLISH VALUES	COMMENTS	METRIC VALUES
Water Absorption Immersion, 24 hr., %	0.2	ASTM D570	0.2 %
Water Absorption Immersion Sat, %	0.4	ASTM D570	0.4 %
Acids, Weak (acetic, dilute HCl)	3	Acceptable Service	3
Acids, Strong (conc. HCl or sulfuric)	1	Unacceptable	1
Alkalies, Weak (dilute NaOH)	3	Acceptable Service	3
Alkalies, Strong (conc. NaOH)	1	Unacceptable	1
Hydrocarbons, Aromatic (toluene)	1	Unacceptable	1
Hydrocarbons, Aliphatic (gasoline)	2	Limited Service	2
Ketones, Esters (acetone)	1	Unacceptable	1
Ethers (diethyl ether, THF)	1	Unacceptable	1
Chlorinated Solvents (methylene chloride)	1	Unacceptable	1
Alcohols (methanol, anti-freeze)	3	Acceptable Service	3
Inorganic Salt Solutions (NaCl, KCl)	3	Acceptable Service	3
Continuous Sunlight	2	Limited Service	2
Steam	3	Acceptable Service	3

COMPLIANCE	ENGLISH VALUES	COMMENTS	METRIC VALUES
Flammability, UL94 (5=V-0; 4=V-1; 3=V-2; 1=HB)	1 (HB)	UL94	1
FDA (1=Yes)	0	Not Compliant	0
USDA (1=Yes)	0	Not Compliant	0
NSF (1=Yes)	0	Not Compliant	0
3A-Dairy (1=Yes)	0	Not Compliant	0
Canada AG (1=Yes)	0	Not Compliant	0
USP Class VI (1=Yes)	0	Not Compliant	

Note: The information contained herein are typical values intended for reference and comparison purposes only. This data should not be considered as the sole basis for design, specification or quality control. Actual test data may vary. All values at 73 F (23 C) unless otherwise noted.