

Product Data Sheet

Outstanding electrical and physical properties combined with hydrolytic stability, ability to withstand multiple autoclaving and FDA approval.

PRODUCT DESCRIPTION

- HYDEX 6101 is a unfilled polyetherimide made by G.E. Plastics under the trade name of Ultem*. Its continuous use temperature of 332° F is higher than that of commodity plastics such as Nylon and Delrin. It is used widely in the electronic's market because of its good arc resistance and dielectric constant. It is also a prime material for medical applications because of its ability to withstand multiple autoclave steam sterilization.
- HYDEX 6120 is a 20% glass reinforced Ultem that has all of the advantages of unfilled Ultem with the addition of higher tensile properties and higher thermal properties.
- HYDEX 6201 is an unfilled polysulfone made by Amoco under the trade name of UDEL**. It has a good continuous use temperature of 320° F. It has excellent electrical properties and can withstand multiple autoclave cycles which make it a good candidate for medical applications.
- HYDEX 6101, 6120 and 6201 are available in a wide variety of rod and slab sizes.

PROPERTIES

- High continuous use temperature
- Good chemical resistance
- Hydrolytic stability
- High mechanical strength
- FDA approved
- Inherently flame retardant
- Low smoke generation
- Dimensional stability
- Multiple autoclavable

BENEFITS

- Electrical applications vs. ceramic
 - cost savings
 - ease of machining
 - increased impact resistance
- Medical applications vs. stainless steel
 - cost savings
 - weight savings
 - fast heat loss properties (for ease of handling)

PHYSICAL PROPERTIES	ASTM	UNITS	HYDEX 6101 (unfilled)	HYDEX 6201 (unfilled)	HYDEX 6120 (20% glass reinforced)
• Tensile Strength, Yield	D638	psi	15,200	10,200	20,100
• Tensile Elongation, Yield	D638	%	7	—	—
• Tensile Elongation, Break	D638	%	60	50-100	3
• Flexural Modulus	D790	psi	480,000	390,000	900,000
• Compressive Strength	D695	psi	21,900	—	28,700
• Izod Impact (Notched)	D256	ft•lb/in.	1	1.3	9
• Heat Deflection Temperature 264 psi	D1525	°F	392	345	408
• Coefficient of Thermal Expansion	E831	in./in.-°F	3.1	—	1.4
• Oxygen Index	D2863	%	47	30	50
• Water Absorption (24-hours)	D570	%	.25	.3	.19
• Density	D792	—	1.27	1.24	1.42
• 94 V-0 Flame Class	UL94	in.	.016	—	.016

*® Registered Trademark of G.E. Plastics

**® Registered Trademark of Amoco

HYDEX™ 6101, 6120, 6201

ROD AND SLAB

ELECTRICAL PROPERTIES	ASTM	UNITS	HYDEX 6101 (unfilled)	HYDEX 6201 (unfilled)	HYDEX 6120 (20% glass reinforced)
• Volume Resistivity	D257	ohm – cm	6.7E17	5.0E16	7.0E16
• ARC Resistance, Tungsten (sec)	D495	PLC Code	5	122	6
• Dielectric Strength 62 mils 130 mils	D149	V/mil	831 –	– 425	670 –
• Dielectric Constant	D150	1 kHz 1 mHz	3.15 –	– 3.03	3.5 –
• Dissipation Factor	D150	1 kHz 1 mHz	.0013 –	– .0034	.0015 –

TYPICAL APPLICATIONS

- Electrical/Electronic
 - circuit boards
 - relays
 - motor parts
 - coil bobbins
- Medical Applications
 - surgical tools
 - joint replacement measuring devices
 - pacemakers
- Industrial
 - light bezel
 - high temperature automotive sensors
 - light bezels
 - battery caps
 - fuse box switches
 - threaded rod
 - battery caps

CHEMICAL RESISTANCE

Complete specific information about the chemical resistance of thermoplastic polymers is impossible to present because of the great number of chemical media and the wide range of exposure combinations and conditions.

In general, HYDEX 6101 and 6120 display excellent property retention and resistance to environmental stress cracking when exposed to most commercial automotive and aircraft fluids, fully halogenated hydrocarbons, alcohols, and weak aqueous solutions. Exposure to partially halogenated hydrocarbons and strong alkaline environments should be avoided.

The chemical resistance of HYDEX 6201 is shown on the chart below.

CHEMICAL	RESULT
• Inorganic Acids	No effect
• Alkalines	No effect
• Alcohols	No effect
• Esters	Partly soluble, swells
• Ketones	Partly soluble, swells
• Aliphatic Hydrocarbons	No effect
• Aromatic Hydrocarbons	Partly soluble, swells
• Chlorinated Hydrocarbons	Dissolves

We believe this information is the best currently available on the subject. It is subject to revision as additional knowledge and experience are gained. A.L. Hyde Company makes no guarantee of results and assumes no obligation of liability whatsoever in connection with this information. Anyone intending to use recommendations contained in this publication should first satisfy himself that the recommendations are suitable for his use and meet all appropriate safety and health standards. This publication is not a license to operate under, or intended to suggest infringement of any existing patents. References to products not of A.L. Hyde manufacture do not indicate endorsement of named products or unsuitability of other similar products.

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