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HDPE

Ralloy® HDPE (High Density Polyethylene)

High Density Polyethylene also referred to as HDPE sheet is manufactured from the semi-crystalline polyethylene (PE) family and exhibits the properties of high impact strength, abrasion resistance, and low coefficient of friction. The material is also moisture, stain and odour resistant, and is FDA approved to be used in the food processing industry. The material's durability makes it ideally suited for a variety of applications such as water tanks, chute linings and numerous industrial uses.

Key Features

- Light weight and extremely tough, even at low temperatures
- Durable
- Good Impact Resistance
- Does not absorb water,
- Resistant to stains and odours
- Lightweight
- Good chemical resistance
- Easily to fabricated
- Good sliding properties (low coefficient of friction)
- FDA approved for Food Contact
- Black HDPE has good UV resistance

Product Applications

- Chemical Tanks
- Water Tank
- Hopper
- Silo and chute linings
- Wall linings
- Scrubbers
- Cutting Boards
- Valves and Pipes Bollards
- Dock Fenders
- Rollers
- Washers
- Bushes

TECHNICAL DATA SHEET

PROPERTY	ASTM TEST METHOD	TYPICAL VALUES ENGLISH UNITS	TYPIC VALUES METRIC UNITS
GENERAL			
Density	D1505	59.6 lbs/ft ³	0.955 g/cc
Melt Index Cond. 90°C / 2.16kg	D1238	-	0.25g/10min
Polyethylene Classification	D4976	Group 2, Class 3, Grade 5	Group 2, Class 3, Grade 5
MECHANICAL PROPERTIES			
Tensile Strength @ Yield	D638	4000 psi >	27.6 MPa
Ultimate Elongation	D638	600%	> 600%
Tensile Impact Strength	D1822	70 ft-lbf/in	147 KJ/m ²
Notched Izod Impact Strength	D256	2.99 ft-lbf/in	159 J/m
Compressive Stress @ Yeild	D695	1,500 psi	10.3 MPa
ESCR, Condition A (10% Igepal), F50	D1693	45 hours	45 hours
ESCR, Condition B (10% Igepal), F50	D1693	35 hours	35 hours
Durometer Hardness	D2240	64 Shore D	64 Shore D
Flexural Modulus	D790	200,000 psi	1379 MPa
Coefficient of Friction, Static	D1894	0.31	0.31
Coefficient of Friction, Kinetic	D1894	0.22	0.22
THERMAL PROPERTIES			
Coefficient of Linear Thermal Expansion	E831	7 x 10 ⁻⁵ in/in/°F	1.26 x 10 ⁻⁴ cm/cm/°C
Decomposition Temperature	Union Carbide	~ 650°F	~ 345°F
Vicat Softening Temperature	D1525	257°F	125°C
Heat Deflection Temperature @ 66 psi	D648	171°F	77°C
Brittleness Temperature	D746	< -120°F	< -84°C
Glass Transition Temperature	Union Carbide	-193°F	-125°C
Continous Use Temperature	-	-100°F to 180°F	-73° to 82°C .
Thermal Conductivity	Private Test	2.5 Btu-in/h-ft ² -°F	35 W/m - °C
Burn Rate	D635	1 in/min	25.4 mm/min
Ignition Temperature, Flash Conditions	D1929	645°F	341°C
Ignition Temperature, Self Ignition Cond.	D1929	660°F	349°C
Flame Spread	E84 Tunnel Test	98	98
Smoke Developed	E84 Tunnel Test	350	350
Fire Rating	Underwriters Labs	UL94HB	UL94HB
OPTICAL PROPERTIES			
Dielectric Strength	D149	510 V.mil	20.1 KV/mm
Dielectric Constant	D150	2.35	2.35
Volume Resistivity	D257	> 2.3 x 10 ⁻⁵ ohm-in	> 6 x 10 ⁻⁵ ohm-cm

This specification provides typical data to the best of our knowledge at the time of publishing. Due to our inability to control conditions of use and application, we are unable to make any recommendations or suggestions. Mulford International nor any of their suppliers assume any liability for use of information presented.

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