

# HDPE Disk

**Formula:** HDPE

**Thickness:** 1mm

**Diameter:** 12.7mm

**CAS Number:** 9002-88-4

**UOM Code:** 108-785-93

**SKU:** 1000021497-group

**Product Code:** ET32-SH-000100

## Material Properties for Polymers

### Chemical Resistance

Element	Value
Acids - concentrated	Good-Fair
Acids - dilute	Good
Alcohols	Good
Alkalis	Good
Aromatic hydrocarbons	Fair
Greases and Oils	Good-Fair
Halogenated Hydrocarbons	Fair-Poor
Halogens	Fair-Poor
Ketones	Good-Fair

### Mechanical Properties

Element	Value
Coefficient of friction	0.29
Hardness - Rockwell	D60-73 - Shore
Poisson's ratio	0.46
Tensile modulus( GPa )	0.5-1.2
Izod impact strength( J m <sup>21</sup> )	20-210
Tensile strength( MPa )	15-40

### Electrical Properties

Element	Value
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Dielectric constant @ 1MHz 2.3-2.4  
 Dissipation factor @ 1MHz 1-10x 10<sup>-4</sup>  
 Dielectric strength( kV mm<sup>-1</sup> ) 22  
 Surface resistivity( Ohm/sq ) 10<sup>13</sup>  
 Volume resistivity( Ohmcm ) 10<sup>12</sup>-10<sup>14</sup>

## Physical Properties

Element	Value
Flammability	HB
Radiation resistance	Fair
Refractive index	1.54
Resistance to Ultra-violet	Poor
Limiting oxygen index( % )	17
Water absorption - over 24 hours( % )	0.01
Density( gcm <sup>-3</sup> )	0.95

## Thermal Properties

Element	Value
Heat-deflection temperature - 0.45MPa( C )	75
Heat-deflection temperature - 1.8MPa( C )	46
Upper working temperature( C )	55-120
Specific heat( J K <sup>-1</sup> kg <sup>-1</sup> )	1900
Thermal conductivity( W m <sup>-1</sup> K <sup>-1</sup> )	0.45-0.52@23°C
Coefficient of thermal expansion( x10 <sup>-4</sup> K <sup>-1</sup> )	100-200