Polycyclohexylenedimethylene Ethylene Terephthalate (PETG)

Category: Copolyester

General Description: Clear amorphous copolyester Resin[1118]

Processing Methods: Extrusion, extrusion blow molding, thermoforming, injection molding, and fabrication, heat sealed.

Applications: Bags, blister packaging, thermoformed containers, bottles for shampoo, soap, detergent and oils, and protective sleeves.[1118]

Permeability Data by Material Supplier Trade Name: See Tables 30-01 through 30-02.

Table 30-01. Oxygen and Water Vapor Through Eastman PETG

Material Family	POLYCYCLOHEXYLENEDIMETHYLENE ETHYLENE TEREPHTHALATE (PETG)	
Reference Number	296	
TEST CONDITIONS		
Penetrant	oxygen	water vapor
Temperature (°C)	22.8	37.8
Relative Humidity (%)	0	90
Test Method	ASTM D1434	ASTM F1249
PERMEABILITY (normalized units)		
Permeability Coefficient ($cm^3 \cdot mm/m^2 \cdot day \cdot atm$)	9.97	
Vapor Transmission Rate ($g \cdot mm/m^2 \cdot day$)		1.6

Table 30-02. Water Vapor, Carbon Dioxide, Oxygen, and Nitrogen Through Eastman Kodar Eastar PETG 6763

Material Family	POLYCYCLOHEXYLENEDIMETHYLENE ETHYLENE TEREPHTHALATE (PETG)
Material Supplier/Grade	EASTMAN KODAR EASTAR PETG 6763
Product Form	FILM
Features	amorphous, transparent
Reference Number	1118

MATERIAL CHARACTERISTICS

Sample Thickness (mm)	0.25

TEST CONDITIONS

Penetrant	water vapor	carbon dioxide	oxygen	nitrogen
Temperature (°C)		23		
Test Method	ASTM E96E	ASTM D1434		

PERMEABILITY (source document units)

Gas Permeability ($cm^3 \cdot mil/100\ in^2 \cdot day$)		125	26	10
Gas Permeability ($cm^3 \cdot mm/m^2 \cdot day \cdot atm$)		49	10	5
Vapor Transmission Rate ($g/m^2 \cdot day$)	6			
Vapor Transmission Rate ($g/day \cdot 100\ in^2$)	0.4			

PERMEABILITY (normalized units)

Permeability Coefficient ($cm^3 \cdot mm/m^2 \cdot day \cdot atm$)		31.5	9.84	3.94
Vapor Transmission Rate ($g \cdot mm/m^2 \cdot day$)	1.5			