

4. Maps showing the East Coast Economic Region (ECER) of Malaysia and major infrastructure facilities / Industrial Parks





5. Product Data Sheet of Degradable Polymer developed by Petronas



PRODUCT DATA SHEET
EcoPLUS™ 105
High Density Degradable Polyethylene

EcoPLUS™ 105 Degradable Polyethylene is a natural high density degradable polyethylene which is suitable for extrusion of a wide variety of film application.

EcoPLUS™ 105 Degradable Polyethylene is based on high density copolymer and it is supplied in pellet form

Recommended Applications include: - Carrier bags
 - Thin counter bags
 - Garbage liner

Physical Properties

Properties	Typical Value	Units	Test Method
Melt Flow Rate: (2.16 kg load)	0.08	g/10 min	ISO 1133 - 1981: Condition 4
: (21.6 kg load)	9	g/10 min	ISO 1133 - 1981: Condition 7
Density (annealed)	950	kg/m ³	ISO 1872/1 - 1986

Film*				
Dart Impact Strength		>150	g	ISO 7765 - 1: 1998 (E)
Tensile Stress at Break	MD	73	MPa	ISO 1184 - 1983
	TD	48	MPa	
Tensile Stress at Yield	MD	40	MPa	ISO 1184 - 1983
	TD	27	MPa	
Elongation at Break	MD	527	%	ISO 1184 - 1983
	TD	987	%	
Elmendorf Tear Strength	MD		g/25microns	ISO 6383/2 - 1983
	TD		g/25microns	
Degradation Under Accelerated Weathering		750	hrs	ASTM D2565: 1999 Cycle 1
Overall Migration		<1	mg/dm ²	EN 1186 Part 3 (3% Acetic Acid, 10% Ethanol, olive oil)

MD = Machine Direction

TD = Transverse Direction

*15 microns film extruded at 20 Kg/hr from a 60mmX1.2mm die, using a blow ratio of 4:1 and a neck height of 8D. The property values shown are typical values obtained by averaging a number of test results. Small divergences from the quoted values may occur with film extrusion conditions and testing method.

Processing Condition Guide: The actual temperature setting will vary with machine, die design etc. Generally, melt temperature 200-230°C should be obtained. Screen pack; 40/80 mesh is suggested

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 Version No: PPTC/EcoPLUS 105

6. Sample of Carry Bag manufactured from degradable polymer