



# MARPOL® LL4M 820

Marco Polo International, LLC - Linear Low Density Polyethylene

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## General Information

### Product Description

Applications include freezer lids, housewares, closures, dispensers, protective caps. Compounding this resin offers outstanding toughness and tear resistance in freezer applications.

### General

Material Status	• Commercial: Active		
Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America
Features	• Food Contact Acceptable • Good Tear Strength	• Low Density • Low Temperature Resistant	• Low Temperature Toughness
Uses	• Caps • Closures	• Household Goods • Lids	• Low Temperature Applications
Agency Ratings	• FDA Food Contact	• HPB (Canada) Food Contact	

## ASTM & ISO Properties<sup>1</sup>

Physical	Nominal Value	Unit	Test Method
Density	0.925	g/cm <sup>3</sup>	ASTM D4883
Melt Mass-Flow Rate (190°C/2.16 kg)	20	g/10 min	ASTM D1238
Environmental Stress-Cracking Resistance (ESCR) (F50)	< 1.00	hr	ASTM D1693
Mechanical	Nominal Value	Unit	Test Method
Tensile Strength (Yield)	11.0	MPa	ASTM D638
Tensile Elongation (Break)	350	%	ASTM D638
Flexural Modulus - 1% Secant	258	MPa	ASTM D790B
Impact	Nominal Value	Unit	Test Method
Tensile Impact Strength (-40°C)	255	kJ/m <sup>2</sup>	ASTM D1822
Thermal	Nominal Value	Unit	Test Method
Brittleness Temperature	< -70.0	°C	ASTM D746
Vicat Softening Temperature	94.8	°C	ASTM D1525
Peak Melting Temperature	124	°C	ASTM D3418

### Notes

<sup>1</sup> Typical properties: these are not to be construed as specifications.