

## Technical Data Sheet

### Moplen EP332L



Polypropylene, Impact Copolymer

#### Product Description

Moplen EP332L is a heterophasic copolymer with medium flow used in injection molding. This grade is characterized by a medium stiffness-impact balance at low temperature as well as a low warpage tendency. The additive formulation provides a good heat aging resistance.

Moplen EP332L is typically used by customers requiring a high resistance to temperature degradation, in particular for battery cases and automotive components.

#### Regulatory Status

For regulatory compliance information, see *Moplen EP332L Product Stewardship Bulletin (PSB) and Safety Data Sheet (SDS)*.

This grade is not intended for medical and pharmaceutical applications.

<b>Status</b>	Commercial: Active
<b>Availability</b>	Africa-Middle East; Asia-Pacific; Australia and New Zealand; Europe; South & Central America
<b>Application</b>	Battery Cases
<b>Market</b>	Automotive; Consumer Products; Industrial, Building & Construction
<b>Processing Method</b>	Injection Molding
<b>Attribute</b>	Good Heat Aging Resistance; Good Impact Resistance; Good Stiffness; Heat Stabilized; Impact Copolymer; Low Warpage

Typical Properties	Nominal		Test Method
	Value	Units	
<b>Physical</b>			
Melt Flow Rate, (230 °C/2.16 kg)	7	g/10 min	ISO 1133-1
Density	0.90	g/cm <sup>3</sup>	ISO 1183-1
<b>Mechanical</b>			
Tensile Modulus	1200	MPa	ISO 527-1, -2
Tensile Stress at Yield	26	MPa	ISO 527-1, -2
Tensile Strain at Break	>50	%	ISO 527-1, -2
Tensile Strain at Yield	8	%	ISO 527-1, -2
<b>Impact</b>			
Charpy Impact Strength - Notched			
(23 °C, Type 1, Edgewise, Notch A)	7.5	kJ/m <sup>2</sup>	ISO 179
(0 °C, Type 1, Edgewise, Notch A)	4.5	kJ/m <sup>2</sup>	ISO 179
(-20 °C, Type 1, Edgewise, Notch A)	3.5	kJ/m <sup>2</sup>	ISO 179
<b>Thermal</b>			
Vicat Softening Temperature, (A50)	148	°C	ISO 306
Heat Deflection Temperature B, (0.45 MPa, Unannealed)	70	°C	ISO 75B-1, -2

# Preliminary

## TUB121GN Polyethylene Copolymer

TUB121GN is a natural bimodal high density polyethylene copolymer designed for extrusion of potable water, natural gas, industrial and mining pipe. When blended with an approved black concentrate, the resulting formulation ("TUB121") is listed by the Plastics Pipe Institute (PPI TR-4, as both PE 4710 and PE 100) and is certified to ANSI/NSF Standards 14 and 61.

### Typical Properties<sup>1</sup>

	Values		ASTM Method
	English Units	SI Units	
<b>Resin</b>			
Density	—	0.949 g/cc	D4883
Melt Index 190°C/5.0 kg	—	0.24 g/10 min	D1238
Melt Index 190°C/ 21.6 kg	—	8.5 g/10 min	D1238
<b>Compression Molded Sample</b>			
Tensile Strength (2 in/min)			D638
@ Yield	3,500 psi	24.1 MPa	
@ Break	4,400 psi	30.3 MPa	
Elongation (2 in/min)			D638
@ Yield	10.4 %	10.4 %	
@ Break	>600 %	>600 %	
Flexural Modulus			D790A
2% Secant	130,000 psi	900 MPa	
Hardness			D2240
Shore D	64	64	
Vicat Softening Point	259 F	126 C	D1525
Brittleness Temperature	<-180 °F	<-118 °C	D746
Environmental Stress Crack Resistance			D1693
Condition C, 100 % Igepal, F50 (hrs.)	>5,000	>5,000	
Hydrostatic Design Basis <sup>2</sup>			D2837
@ 23 C	1,600 psi	11.0 MPa	
@ 60 C	1,000 psi	6.9 MPa	
Minimum Required Strength (MRS) <sup>4</sup>	1,450 psi	10.0 MPa	ISO 9080/12162
Notch Tensile (PENT) (hrs.)	>2000	>2000	F1473
Oxidation Induction Time			D3895
@ 210 C	>20 min	>20 min	
Thermal Stability	>464 F	>240 C	D3350
Cell Classification	445574C <sup>2</sup>	445576C <sup>2</sup>	D3350
Oxidative Resistance Classification	CC3	CC3	D3350

<sup>1</sup> Typical properties will vary and are not to be used for specification purposes.

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<sup>2</sup> Blended with approved black concentrate. Contact INEOS Technical Service for a list of approved concentrates.

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Olefins & Polymers USA

## Product Description

EL-Pro™ P640J is an impact copolymer polypropylene resin designed for injection molding process. This resin is recommended for product that requires high stiffness with good processibility.

## Typical Application

- Automotive parts
- Home appliance parts
- Industrial uses
- Toy, Furniture

## Product Characteristics

- High impact strength
- Good processibility and stiffness
- U.S FDA 21 CFR 177.1520
- UL Yellow Card
- RoHS

## Physical Properties

Property	Test Method	Typical Value	Unit
Melt Flow Rate	ASTM D 1238 @ 230°C, 2.16 kg	10	g/10 min
Density	ASTM D 1505	0.910	g/cm <sup>3</sup>
Tensile Strength at Yield	ASTM D 638 @ Speed 50 mm/min	280	kg/cm <sup>2</sup>
Tensile Strength at Break	ASTM D 638 @ Speed 50 mm/min	200	kg/cm <sup>2</sup>
Flexural Modulus	ASTM D 790	12,000	kg/cm <sup>2</sup>
Notched Izod Impact	ASTM D 256 @ 23 °C	98	J/m
Notched Izod Impact	ASTM D 256 @ 0 °C	59	J/m
Notched Izod Impact	ASTM D 256 @ -20 °C	39	J/m
Rockwell Hardness	ASTM D 785	70	R-Scale
Melting Point	ASTM D 2117	163	°C
Vicat Softening Point	ASTM D 1525	150	°C
Heat Deflection Temperature (HDT)	ASTM D 648 @ 4.6 kg/cm <sup>2</sup>	105	°C
Heat Deflection Temperature (HDT)	ASTM D 648 @ 18.5 kg/cm <sup>2</sup>	55	°C
% Shrinkage (2mm) MD	TPE Method	1.3	%
TD	TPE Method	1.1	%
Flammability	UL - 94	HB	-

**Note:** Conversion factor for changing unit from kg/cm<sup>2</sup> to MPa is divided by 10.20

## Processing Techniques

The actual processing conditions depend on each machine type, product size, mold design and environment. Recommended processing conditions:

Melt temperature: 230-270°C  
 Pressure (of Max. Pressure):

Mold temperature: 25-70°C  
 Injection 40-80%

Injection speed: Fast  
 Packing and Holding 30-60%

Screw speed: 40-70 rpm  
 Back 10%

### Product Technical Assistance

For technical assistance or further information on this product or any other SCG Chemicals' products contact your SCG Chemicals technical service engineer at the address or telephone number as specified below.

## Product Available Form

- Pellet

## Product Packaging

- 25 kg loose bag
- 25 kg stretch wrap palletized
- 750 kg big bag
- Sea bulk container

## KOPELEN JM-350

## PP BLOCK COPOLYMER

### General Information

#### ● Description

JM-350 is high impact block copolymer which has more ethylene contents than normal block copolymer.

This grade is designed to be processed in conventional Injection molding equipment.

JM-350 shows better impact resistance than normal block copolymer and has good physical property balance.

#### ● Applications

- ◆ Industrial supplies
- ◆ Automotive compound base resin

### Physical Properties<sup>1</sup>

Physical	Test Method	Nominal Values			
Melt Flow Index	ASTM D1238	10	g/10min		
Density	ASTM D792	0.9	g/cm <sup>3</sup>		
<b>Mechanical</b>					
Tensile Stress (Yield)	ASTM D638	270	kgf/cm <sup>2</sup>	26	MPa
Tensile Strain (Break)	ASTM D638	>100	%	>100	%
Flexural Modulus	ASTM D790	13,000	kgf/cm <sup>2</sup>	1,280	MPa
<b>Impact</b>					
Notched Izod Impact Strength (23℃)	ASTM D256	8.5	kgf·cm/cm	83	J/m
Notched Izod Impact Strength (-10℃)	ASTM D256	4.0	kgf·cm/cm	39	J/m
<b>Thermal</b>					
Heat Deflection Temperature (4.6kgf/cm <sup>2</sup> )	ASTM D648	105	℃		
<b>Additional Properties</b>					
Flammability	UL94	HB			

### NOTE

ISO 9001, 14001, /TS 16949

<sup>1</sup> Physical Properties : these are not to be construed as specifications

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## Moplen EP348N

### Polypropylene, Impact Copolymer

#### Product Description

Moplen EP348N is a polypropylene impact copolymer. This grade has good stiffness and high impact with good thermal ageing stability. Potential applications include pails, luggage, toys, crates, houseware, two wheeler moulded parts and battery cases etc.

#### Product Characteristics

<b>Status</b>	Commercial: Active
<b>Test Method used</b>	ISO
<b>Availability</b>	Europe, Asia-Pacific, Africa-Middle East
<b>Features</b>	High Impact Resistance , Good Stiffness , Good Thermal Aging Resistance
<b>Typical Customer Applications</b>	Battery Cases, Crates, Housewares, Luggage, Opaque Containers, Sports, Leisure and Toys

Typical Properties	Method	Value	Unit
<b>Physical</b>			
Density	ISO 1183	0.9	g/cm <sup>3</sup>
Melt flow rate (MFR) (230°C/2.16kg)	ISO 1133	11	g/10 min
<b>Mechanical</b>			
Tensile Stress at Yield	ISO 527-1, -2	23	MPa
Flexural modulus	ISO 178	1200	MPa
Elongation at yield	ISO 527	6	%
<b>Impact</b>			
Notched izod impact strength (23 °C)	ISO 180	25	kJ/m <sup>2</sup>
<b>Thermal</b>			
Heat deflection temperature B (0.45 MPa) Unannealed	ISO 75B-1, -2	97	°C

#### Additional Properties

##### Hardness

Rockwell hardness- Internal test method - 80 R scale

##### Notes

Typical properties; not to be construed as specifications.

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LyondellBasell markets this product through the following entities:

- Equistar Chemicals, LP
- Basell Sales & Marketing Company B.V.
- Basell Asia Pacific Limited
- Basell International Trading FZE
- LyondellBasell Australia Pty Ltd

For the contact details of the LyondellBasell company selling this product in your country, please visit <http://www.lyb.com/>.

PRODUCT DATA SHEET  
**POLYPROPYLENE**  
**BE961MO**

POLYPROPYLENE BLOCK COPOLYMER FOR INJECTION MOULDING

**DESCRIPTION**

**BE961MO** is a heterophasic copolymer. This product is characterized by an optimum combination of high stiffness, low creep and very high impact strength.

This product uses Borstar Nucleation Technology (BNT) to increase productivity by cycle time reduction.

Articles produced with this product have very good demoulding properties, well-balanced mechanical properties and excellent dimension consistency with respect to different colours.

**APPLICATIONS**

Crates and boxes  
Pails  
Luggage

Ice cream containers  
Appliances  
Technical parts

**SPECIAL FEATURES**

High Impact strength, even at low temperatures  
Excellent dimensional stability  
Good flow behaviour

**PHYSICAL PROPERTIES**

Property	Typical Value	Test Method
Density	900-910kg/m <sup>3</sup>	ISO 1183
Melt Flow Rate (230°C/2.16kg)	12g/10min	ISO 1133
Tensile Modulus (1mm/min)	1200MPa	ISO 527-2
Tensile Strain at Yield (50mm/min)	5,3%	ISO 527-2
Tensile Stress at Yield (50mm/min)	23MPa	ISO 527-2
Flexural Modulus	1250MPa	ISO 178
Tensile Strain at Yield	5.3%	ASTM D638
Tensile Stress at Yield	23MPa	ASTM D638
Flexural Modulus(by 1% secant)	1200MPa	ASTM D790A
Charpy Impact Strength, notched (23°C)	14kJ/m <sup>2</sup>	ISO 179/1eA
Charpy Impact Strength, notched (-20°C)	7kJ/m <sup>2</sup>	ISO 179/1eA
IZOD Impact Strength, notched (23°C)	160J/m	ASTM D256
IZOD Impact Strength, notched (-20°C)	75J/m	ASTM D256
Heat Deflection Temperature(0,45MPa)**	92°C	ISO 75-2
Vicat Softening Temperature(Method A)***	144°C	ISO 306
Hardness, Rockwell(R-scale)	87	ISO 2039-2

\*Data should not be used for specification work

\*\*Measured on injection moulded specimens acc. to ISO 1873-2

\*\*\* Measured on injection moulded specimens, conditioned at 23°C and 50% Rel. Hum.

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Borouge is a joint venture of ADNOC and Borealis



# CI20MN

## IMPACT COPOLYMER FOR INJECTION MOULDED PRODUCTS

Repol CI20MN is recommended for use in **Injection Moulding** processes where good impact-stiffness balance is required. It is an ideal material to use in pails, luggage shells, industrial and automotive components. Repol CI20MN contains antistatic agents that reduces static charge build-up in products. Repol CI20MN contains nucleating agent.

Typical Characteristics			
Property	Test Method	Unit	Typical Value*
Melt Flow Rate (230°C/2.16 kg)	ASTM D1238	g/10 min	12
Tensile Strength at Yield (50 mm/min)	ASTM D638	MPa	24
Elongation at Yield (50 mm/min)	ASTM D638	%	7
Flexural Modulus (1% secant)	ASTM D790A	MPa	1150
Notched Izod Impact Strength (23°C)	ASTM D256	J/m	125
Heat Deflection Temperature (455 kPa)	ASTM D648	°C	105

\* Typical values, not to be taken as specification. All the mechanical properties as per ASTM D638 Type I specimen injection moulded in accordance with ASTM D4101

### Applications

Paint pails, luggage, industrial components.

### Regulatory Information

- Meets the requirements stipulated in IS 10910 on 'Specification for Polypropylene and its Copolymers for safe use in contact with foodstuff, pharmaceuticals, and drinking water'. Additives incorporated in this grade conform to the positive list of constituents as prescribed in IS 10909. The grade and the additives incorporated in it also comply with the FDA:CFR Title 21,177.1520, Olefin polymers.

### Storage Recommendations

- Bags should be stored in dry / closed conditions at temperatures below 50°C and protected from UV / direct sunlight

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Updated as of Jan, 2008

## Sahara Marketing Company Material Data Sheet

**Sahara C 160 HM**  
Polypropylene, Impact Copolymer

### Product Description

**Sahara C 160 HM** is a nucleated heterophasic copolymer, suitable for injection moulding applications, and contains an anti-static agent. It exhibits a high stiffness combined with a medium fluidity.

**Sahara C 160 HM** is extensively used in housewares, furniture, cylindrical containers and crate.

This grade is not intended for medical and pharmaceutical applications.

### Product Characteristics:

<b>Status:</b>	Commercial: Active
<b>Processing Method:</b>	Injection Molding
<b>Application:</b>	Crates, Furniture, Housewares, Opaque Containers.
<b>Market</b>	Consumer Products; Rigid Packaging
<b>Attribute</b>	Contains Antistat; Impact Copolymer; Medium Flow ; Medium Stiffness; Nucleated

Typical Properties	Method	Nominal Value	Unit
<b>Physical</b>			
Density , (23 °C)	ISO 1183-1	0.90	g/cm <sup>3</sup>
Melt flow rate (230°C/2.16kg)	ISO 1133-1	16	g/10 min
<b>Mechanical</b>			
Tensile Modulus	ISO 527-1, -2	1400	MPa
Tensile Stress at Yield	ISO 527-1, -2	28	MPa
Tensile Strain at Break	ISO 527-1, -2	> 50	%
Tensile Strain at Yield	ISO 527-1, -2	7	%
<b>Impact</b>			





## Moplen EP548Q

### Polypropylene, Impact Copolymer

#### Product Description

Moplen EP548Q is a nucleated polypropylene impact copolymer, suitable for injection moulding applications and contains antistatic agent. This grade exhibits good stiffness with medium fluidity.

Potential applications include houseware, furniture, pails, cylindrical containers and crates.

#### Product Characteristics

<b>Status</b>	Commercial: Active
<b>Test Method used</b>	ISO
<b>Availability</b>	Europe, Asia-Pacific, Africa-Middle East
<b>Processing Methods</b>	Injection Molding
<b>Features</b>	Antistatic, Medium Flow, Nucleated, Good Stiffness
<b>Typical Customer Applications</b>	Crates, Furniture, Housewares, Opaque Containers

Typical Properties	Method	Value	Unit
<b>Physical</b>			
Density	ISO 1183	0.9	g/cm <sup>3</sup>
Melt flow rate (MFR) (230°C/2.16kg)	ISO 1133	19	g/10 min
<b>Mechanical</b>			
Tensile Stress at Yield	ISO 527-1, -2	28	MPa
Flexural modulus	ISO 178	1450	MPa
Elongation at yield	ISO 527	5	%
<b>Impact</b>			
Charpy notched impact strength (23°C)	ISO 179	9	kJ/m <sup>2</sup>

#### Notes

Typical properties; not to be construed as specifications.

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LyondellBasell markets this product through the following entities:

- Equistar Chemicals, LP
- Basell Sales & Marketing Company B.V.
- Basell Asia Pacific Limited
- Basell International Trading FZE
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## SEETEC L-270A

## PP COPOLYMER

### General Information

#### ● Description

L-270A is the polypropylene Copolymer manufactured by under the Spheripol process. This grade is designed to potential end use applications include Extrusion coating on Woven and Kraft paper.

Low neck-in, High speed processability, Good adhesive property to paper and Kraft paper, Oil & moisture permeation resistance

#### ● Applications

Resin, fish, steel tube, dog food packaging

### Physical Properties<sup>1</sup>

Physical	Test Method	Nominal Values			
Melt Flow Index	ASTM D1238	25	g/10min		
Density	ASTM D792	0.9	g/cm <sup>3</sup>		
<b>Mechanical</b>					
Tensile Stress (Yield)	ASTM D638	280	kgf/cm <sup>2</sup>	27	MPa
Tensile Strain (Break)	ASTM D638	>500	%	>500	%
Flexural Modulus	ASTM D790	9,800	kgf/cm <sup>2</sup>	970	MPa
Rockwell Hardness	ASTM D785	96	R		
<b>Impact</b>					
Notched Izod Impact Strength (23°C)	ASTM D256	4.5	kgf·cm/cm	44	J/m
<b>Thermal</b>					
Melting Point	Lotte'S	162	°C		
Vicat softing point	ISO 308	147	°C		
Heat Deflection Temperature (4.6kgf/cm <sup>2</sup> )	ASTM D648	105	°C		

### NOTE

ISO 9001, 14001

<sup>1</sup> Physical Properties : these are not to be construed as specifications



# TECHNICAL DATA SHEET

Product Name

**SCG PP**

Product Type

**Polypropylene Impact Copolymer**

Product Grade

**P740J**

## Product Description

SCG PP P740J is a medium flow impact copolymer polypropylene resin designed for injection molding process. This resin is recommended for product that requires good stiffness and impact balance.

## Typical Application

- Automotive parts
- Electrical appliance parts
- Complicated Industrial parts
- Any parts require good flow ability

## Product Characteristics

- Good impact strength
- Good stiffness
- Good processibility
- Food contact applicable

## International

- U.S FDA 21 CFR 177.1520
- UL Yellow Card E202743
- RoHS Directive 2011/65/EU

## Physical Properties

Property	Test Method	Typical Value	Unit
Melt Flow Rate	ASTM D 1238 @ 230°C, 2.16 kg	27	g/10 min
Density	ASTM D 1505	0.910	g/cm <sup>3</sup>
Tensile Strength at Yield	ASTM D 638 @ Speed 50 mm/min	290	kg/cm <sup>2</sup>
Tensile Strength at Break	ASTM D 638 @ Speed 50 mm/min	200	kg/cm <sup>2</sup>
Flexural Modulus	ASTM D 790	12,500	kg/cm <sup>2</sup>
Notched Izod Impact	ASTM D 256 @ 23°C	78	J/m
Notched Izod Impact	ASTM D 256 @ 0°C	49	J/m
Notched Izod Impact	ASTM D 256 @ -20°C	39	J/m
Rockwell Hardness	ASTM D 785	70	R-Scale
Melting Point	ASTM D 2117	163	°C
Vicat Softening Point	ASTM D 1525	150	°C
Heat Deflection Temperature (HDT)	ASTM D 648 @ 4.6 kg/cm <sup>2</sup>	110	°C
% Shrinkage (2mmt) MD	TPE Method	1.4	%
TD	TPE Method	1.2	%
Flammability	UL - 94	HB	-

### Note:

- Conversion factor for changing unit from kg/cm<sup>2</sup> to MPa is divided by 10.20
- The given values are typical value measured on the product. Values herein are not to be constructed as a product specification.

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Page | 1

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# Products

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## Polypropylene > B380G Bulk

YUPLENE B380G is a propylene impact copolymer designed for injection molding applications. YUPLENE B380G has high stiffness, excellent dimensional stability, good impact strength and has been listed by Underwriters Laboratories (UL). YUPLENE B380G is especially suitable for various electrical appliances such as washing machine parts and refrigerator parts.

### Application / Use Case

Injection Molding / Automobile Application, Industrial Part for Electronics, Large Container

### Characteristics

Stiffness, Impact Strength, High Flow

### Specification

Item	Value	Unit	Test Method
Melt Index	28	g/10min	ASTM D1238

### Physical Properties

Item	Value	Unit	Test Method
IZOD Impact Strength(Notched, 23°C)	9	kg-cm/cm	ASTM D256
IZOD Impact Strength(Notched, -20°C)	4.5	kg-cm/cm	ASTM D256
Softening Point(Vicat)	150	°C	ASTM D1525
Tensile Strength at Yield	260	kg/cm <sup>2</sup>	ASTM D638
Elongation at Break	<300	%	ASTM D638
Flexural Modulus	12000	kg/cm <sup>2</sup>	ASTM D790
Hardness(Rockwell)	90	R Scale	ASTM D785
Heat Distortion Temperature	110	°C	ASTM D648
Accelerated Oven Aging(in Air at 150°C)	360	hr	ASTM D3012
Dupont Impact at -10°C	> 70	kg-cm	ASTM D2794
Spiral Flow	>800	mm	SK Method

These are typical properties only, and are not to be construed as specific limits.

### Application / Use Case

Injection Molding / Automobile Application, Industrial Part for Electronics, Large Container

### Characteristics

Stiffness, Impact Strength, High Flow

### Physical Properties

항목	Value	Unit	Test Method
Melt index	28	g/10min	ASTM D1238

## KOPELEN JM-375

## PP BLOCK COPOLYMER

### General Information

#### ● Description

JM-375 is high impact block copolymer which has high ethylene-propylene rubber content. This grade is designed to be processed in conventional Injection molding equipment. JM-375 shows a high melt flow, controlled rheology and has good balance of strength, impact resistance, and processability.

#### ● Applications

- ◆ General supplies & Industrial supplies
- ◆ Automotive compound base resin

Physical Properties <sup>1</sup>					
Physical	Test Method	Nominal Values			
Melt Flow Index	ASTM D1238	45	g/10min		
Density	ASTM D792	0.90	g/cm <sup>3</sup>		
<b>Mechanical</b>					
Tensile Stress (Yield)	ASTM D638	260	kgf/cm <sup>2</sup>	25	MPa
Tensile Strain (Break)	ASTM D638	>50	%	>50	%
Flexural Modulus	ASTM D790	15,000	kgf/cm <sup>2</sup>	1,470	MPa
<b>Impact</b>					
Notched Izod Impact Strength (23℃)	ASTM D256	7.5	kgf·cm/cm	74	J/m
Notched Izod Impact Strength (-10℃)	ASTM D256	3.5	kgf·cm/cm	34	J/m
<b>Thermal</b>					
Heat Deflection Temperature (4.6kgf/cm <sup>2</sup> )	ASTM D648	125	℃		
<b>Additional Properties</b>					
Flammability	UL94	-			

#### NOTE

ISO 9001, 14001, /TS 16949

<sup>1</sup> Physical Properties : these are not to be construed as specifications

## Impact HCPP BM3900

YUPLENE BM3900 is a high crystalline propylene impact copolymer designed for injection molding applications. YUPLENE BM3900 has excellent properties in stiffness, flow, mechanical properties, heat resistance and impact strength, which make YUPLENE BM3900 suitable for auto parts, electric appliances, large size containers, thin wall and very high speed injection applications. This is not a chemical cracked grade so it is free from surface gas mark. YUPLENE BM3900 can reduce various injection problems such as surface trouble, shrink, warpage etc. and reduce the cycle time of injection molding due to rapid crystallization. Especially, YUPLENE BM3900 has low shrinkage value and excellent dimensional stability.

### Application

Injection Molding / industrial parts for electronic, automobile applications, large container

### Physical Properties

	Value	Unit	Test Method
Melt Index	60.0	g/10min	ASTM D1238
Softening Point(Vicat)	155	°C	ASTM D1525
Tensile Strength at Yield	300	kg/cm <sup>2</sup>	ASTM D638
Elongation at Break	<100	%	ASTM D638
IZOD Impact Strength(Notched, -20°C)	5.0	kg·cm/cm	ASTM D256
IZOD Impact Strength(Notched, 23°C)	7.5	kg·cm/cm	ASTM D256
Spiral Flow	>800	mm	SK Method
Flexural Modulus	16000	kg/cm <sup>2</sup>	ASTM D790
Hardness(Rockwell)	100	R Scale	ASTM D785
Heat Distortion Temperature	130	°C	ASTM D648
Oven Aging Time	360	hr	ASTM D3012

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## Technical Data Sheet

### Moplen EP548U



Polypropylene, Impact Copolymer

#### Product Description

Moplen EP548U is a nucleated heterophasic copolymer with antistatic additivation, used in injection moulding applications.

It exhibits an good impact/stiffness balance combined with a high fluidity.

Moplen EP548U is typically used by customers in opaque containers, housewares, toys and in thin-walled containers for food packaging (e.g. margarine tubs, yoghurt pots, etc.).

#### Regulatory Status

For regulatory compliance information, see *Moplen EP548U* [Product Stewardship Bulletin \(PSB\)](#) and [Safety Data Sheet \(SDS\)](#).

This grade is not intended for medical and pharmaceutical applications.

<b>Status</b>	Commercial: Active
<b>Availability</b>	Africa-Middle East; Europe
<b>Application</b>	Housewares; Opaque Containers; Sports, Leisure & Toys
<b>Market</b>	Consumer Products; Rigid Packaging
<b>Processing Method</b>	Injection Molding
<b>Attribute</b>	Contains Antistat; High Flow; Impact Copolymer; Nucleated

Typical Properties	Nominal		Test Method
	Value	Units	
<b>Physical</b>			
Melt Flow Rate, (230 °C/2.16 kg)	70	g/10 min	ISO 1133-1
Density	0.90	g/cm <sup>3</sup>	ISO 1183-1
<b>Mechanical</b>			
Tensile Modulus	1450	MPa	ISO 527-1, -2
Tensile Stress at Yield	28	MPa	ISO 527-1, -2
Tensile Strain at Break	30	%	ISO 527-1, -2
Tensile Strain at Yield	5	%	ISO 527-1, -2
<b>Impact</b>			
Charpy Impact Strength - Notched			
(23 °C, Type 1, Edgewise, Notch A)	4	kJ/m <sup>2</sup>	ISO 179
(0 °C, Type 1, Edgewise, Notch A)	3.5	kJ/m <sup>2</sup>	ISO 179
(-20 °C, Type 1, Edgewise, Notch A)	3	kJ/m <sup>2</sup>	ISO 179
Ductile/Brittle Transition Temperature	-53	°C	ISO 6603-2
<b>Thermal</b>			
Vicat Softening Temperature, (A50)	151	°C	ISO 306
Deflection Temperature Under Load, (0.45 MPa, Unannealed)	95	°C	ISO 75B-1, -2

# SABIC® PP 513MN40

## POLYPROPYLENE IMPACT COPOLYMER FOR INJECTION MOLDING

### DESCRIPTION

SABIC® PP 513MN40 is a controlled rheology PP grade with very high fluidity. It contains an antistatic agent and especially developed for producing injection molded articles. This grade has a good impact resistance even at low temperature.

### TYPICAL APPLICATIONS

SABIC® PP 513MN40 can be used for general purpose thin-walled injection molding applications.

### TYPICAL PROPERTY VALUES

Revision 20170706

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
<b>POLYMER PROPERTIES</b>			
<b>Melt Flow Rate</b>			
at 230°C and 2.16kg	70	g/10 min	ASTM D1238
<b>Density</b>			
at 23°C	905	kg/m <sup>3</sup>	ASTM D792
<b>MECHANICAL PROPERTIES</b>			
<b>Flexural Modulus (1% Secant) <sup>(1)</sup></b>			
	1200	MPa	ASTM D790 A
<b>Izod Impact Strength</b>			
notched, at 23°C	65	J/m	ASTM D256
notched, at -20°C	30	J/m	ASTM D256
<b>Rockwell Hardness, R-Scale</b>			
	94	-	ASTM D785
<b>FILM PROPERTIES</b>			
<b>Tensile Properties</b>			
stress at yield	24	MPa	ASTM D638
strain at yield	6	%	ASTM D638
<b>THERMAL PROPERTIES</b>			
<b>Vicat Softening Temperature</b>			
	150	°C	ASTM D1525
<b>Heat deflection temperature</b>			
at 455kPa	92	°C	ASTM D648

(1) Based on injection molded specimens

### PROCESSING CONDITIONS

Typical processing conditions for 513MN40 are:





# B650MN

## IMPACT COPOLYMER FOR INJECTION MOULDED PRODUCTS

Repol B650MN is recommended for use in **Injection Moulding** processes where high flow and medium impact strength are required. It is an ideal material to use in appliance parts, automotive compounds, grilles and large size products. Repol B650MN contains nucleating agent.

Typical Characteristics			
Property	Test Method	Unit	Typical Value*
Melt Flow Rate (230°C/2.16 kg)	ASTM D1238	g/10 min	70
Tensile Strength at Yield (50 mm/min)	ASTM D638	MPa	24
Elongation at Yield (50 mm/min)	ASTM D638	%	4
Flexural Modulus (1% secant)	ASTM D790A	MPa	1300
Notched Izod Impact Strength (23°C)	ASTM D256	J/m	70
Heat Deflection Temperature (455 kPa)	ASTM D648	°C	110

\* Typical values, not to be taken as specification. All the mechanical properties as per ASTM D638 Type I specimen injection moulded in accordance with ASTM D4101

### Applications

Appliances, automotive and compounding

### Regulatory Information

- Meets the requirements stipulated in IS 10910 on 'Specification for Polypropylene and its Copolymers for safe use in contact with foodstuff, pharmaceuticals, and drinking water'. Additives incorporated in this grade conform to the positive list of constituents as prescribed in IS 10909. The grade and the additives incorporated in it also comply with the FDA:CFR Title 21,177.1520, Olefin polymers

### Storage Recommendations

- Bags should be stored in dry / closed conditions at temperatures below 50°C and protected from UV / direct sunlight

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# SABIC® PP 413MNK45

POLYPROPYLENE IMPACT COPOLYMER FOR INJECTION MOLDING

## DESCRIPTION

SABIC® PP 413MNK45 is a controlled rheology PP grade with a very high fluidity. It is provided with an antistatic and nucleating agent package. This grade has a good impact – stiffness balance.

## TYPICAL APPLICATIONS

SABIC® PP 413MNK45 can be used for housewares and thin-walled packaging containers (e.g. margarine tubs, yoghurt pots, ice cream containers, etc.).

## TYPICAL PROPERTY VALUES

Revision 20191120

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
<b>POLYMER PROPERTIES <sup>(1)</sup></b>			
<b>Melt Flow Rate</b>			
at 230°C and 2.16kg	70	g/10 min	ASTM D1238
<b>Density</b>			
at 23°C	905	kg/m <sup>3</sup>	ASTM D638
<b>MECHANICAL PROPERTIES <sup>(2)</sup></b>			
<b>Tensile Properties</b>			
Strength @ Yield	28	MPa	ASTM D 638
Elongation @ Yield	5	%	ASTM D 638
<b>Flexural Modulus (1% Secant)</b>	1550	MPa	ASTM D790 A
<b>Izod Impact Strength</b>			
notched, at 23°C	65	J/m	ASTM D256
notched, at -20°C	35	J/m	ASTM D256
<b>Rockwell Hardness, R-Scale</b>	94	-	ASTM D785
<b>THERMAL PROPERTIES</b>			
<b>Vicat Softening Temperature</b>	150	°C	ASTM D1525
<b>Heat deflection temperature</b>			
455kPa	95	°C	ASTM D648

(1) Typical values, not to be construed as specific limits

(2) Based on injection molded specimens

## PROCESSING CONDITIONS

Typical processing conditions for 413MNK45 are:

Barrel temperature range: 200 - 245°C.

Mold shrinkage: 1.2 - 2.0% depending on wall thickness and processing conditions.

Mold temperature: normally 15 - 40°C, up to 65°C for thick parts.