

# SABIC® PP PHC31-81

# PP IMPACT COPOLYMER

# **DESCRIPTION**

SABIC<sup>®</sup> PP PHC31-81 is a grade which combines high stiffness with good impact strength. Its excellent flow properties and narrow molecular weight distribution permits fast cycle-times and injection moulding of articles demanding low warpage and high dimensional stability. This grade is formulated with a combined processing and UV-stabilisation package. Typical applications are automotive components. It is also available in a general purpose additive package.

 $\mathsf{SABIC}^{\$}$  PP PHC31-81 is a designated automotive grade.

IMDS ID: 80775790

# **TYPICAL PROPERTY VALUES**

Revision 20181012

Met Record 2.1 fe No State           de 200 °C and 2.1 fe Nog Actor         15         olymnom         50 133           De noity         90         kg/m³         15 133           Mount after injection moulding <sup>(1)</sup> 16         x 19         x 19           Volusia finicipation moulding <sup>(1)</sup> 16         x 20         x 20         x 20           Volusia finicipation moulding <sup>(1)</sup> 16         x 20         <	PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
at 230°C and 2.16 kg         150         450 mile         150 mile	POLYMER PROPERTIES			
Denity         Josephane	Melt Flow Rate			
Modid shrinkage         Selection modeling (1)         6.6         \$ 6.0	at 230 °C and 2.16 kg	15	dg/min	ISO 1133
FORMULATION         UV stabilized         General Composition         Composition<	Density	905	kg/m³	ISO 1183
FORMULATION         Second or sec	Mould shrinkage			
Us stabilized         □         -	24 hours after injection moulding <sup>(1)</sup>	1.6	%	SABIC method
Antistatic agent         □         1.00         2.00	FORMULATION			
Nucleating agent         □         2         -	UV stabilized	$\checkmark$	-	-
MECHANICAL PROPERTIES           Tensile tens           stess at yield         25         MPa         150 527-2 1A           stess at yield (²)         5         %         150 527-2 1A           tensile modulus (³)         1300         MPa         150 180/1A           tensile modulus (³)         13         14         MPa         150 180/1A           tensile modulus (³)         14         150 180/1A         150 180/1A         150 180/1A           tensile modulus (³)         15         150 180/1A         150 180/1A <td>Anti static agent</td> <td></td> <td>-</td> <td>-</td>	Anti static agent		-	-
Tensile test           stress at yield         56         MPa         ISO 527-2 IA           strain at yield (2)         50         \$CD 527-2 IA           tensile modulus (3)         100         MPa         ISO 527-2 IA           tensile modulus (3)         MPa         ISO 180/1A           tensile modulus (3)         MIPa         ISO 180/1A           tensile modulus (3)         MIPa         ISO 180/1A           tensile modulus (3)         MIPa         ISO 180/1A           tensile modulus (4)         MIPa         ISO 180/1A           tensile mod	Nucleating agent		-	-
stess at yield         25         MPa         150 527-2 1A           strain at yield (2)         5         6         150 527-2 1A           tessile modulus (3)         1300         MPa         150 527-2 1A           tessile modulus (3)         MPa         150 527-2 1A           tessile modulus (3)         1300         MPa         150 527-2 1A           testile modulus (3)         150 527-2 1A         150 527-2 1A           testile modulus (3)         150 527-2 1A         150 527-2 1A           testile modulus (3)         150 527-2 1A         150 527-2 1A           testile modulus (3)         150 527-2 1A         150 527-2 1A           testile modulus (3)         150 527-2 1A         150 527-2 1A           testile modulus (3)         150 527-2 1A         150 527-2 1A <td>MECHANICAL PROPERTIES</td> <td></td> <td></td> <td></td>	MECHANICAL PROPERTIES			
strain at yield <sup>2</sup> 5         8         ISO 527-2 1A           tensile modulus <sup>3</sup> MPa         ISO 189/1A           at 23 °C         MJ m²         ISO 189/1A           at 23 °C         MJ m²         ISO 189/1A           at 23 °C         MJ m²         ISO 179/1eA           at 23 °C         MJ m²         ISO 179/1eA           at 29 °C         MJ m²         ISO 179/1eA           tensile modulus <sup>4</sup> <	Tensile test			
tensile modulus (3)         MPa         SO5 27-2 1A           tzod impact notched         I <th< td=""><td>stress at yield</td><td>25</td><td>MPa</td><td>ISO 527-2 1A</td></th<>	stress at yield	25	MPa	ISO 527-2 1A
Ize definition to the definitio		5	%	ISO 527-2 1A
at 23 °C       kl/m²       ISO 180/1A         at 0 °C       7       kl/m²       ISO 180/1A         at -20 °C       5       kl/m²       ISO 180/1A         Charpy Impact Strength Notched         at 23 °C       12.5       kl/m²       ISO 179/1eA         at -20 °C       8       kl/m²       ISO 179/1eA         at -20 °C       kl/m²       ISO 179/1eA         therMal PROPERTIES         theat deflection temperature <sup>(4)</sup> at 1.80 MPa (HDT/A)       55       °C       ISO 75         at 0.45 MPa (HDT/B)       80       °C       ISO 75         total Softening Temperature <sup>(5)</sup>	tensile modulus <sup>(3)</sup>	1300	MPa	ISO 527-2 1A
1	Izod impact notched			
at -20 °C         kl/m²         ISO 180/1A           Charpy Impact Strength Notched         L         L           at 23 °C         12.5         kl/m²         ISO 179/1eA           at 0 °C         8         kl/m²         ISO 179/1eA           at -20 °C         5         kl/m²         ISO 179/1eA           Heardness Shore D         65         2         ISO 888           Heard effection temperature (4)           at 1.80 MPa (HDT/A)         55         °C         ISO 75           at 0.45 MPa (HDT/B)         80         °C         ISO 75           At 0.45 MPa (HDT/B)         80         °C         ISO 75	at 23 °C	11	kJ/m²	ISO 180/1A
Charpy Impact Strength Notched           at 23 °C         12.5         kJ/m²         ISO 179/1eA           at 0 °C         8         kJ/m²         ISO 179/1eA           at -20 °C         kJ/m²         ISO 179/1eA           Hardness Shore D         65         -         ISO 868           THERMAL PROPERTIES           Heat deflection temperature (4)         55         °C         ISO 75           at 0.45 MPa (HDT/B)         80         °C         ISO 75           vicat Softening Temperature (5)         **C         ISO 75	at 0 °C	7	kJ/m²	ISO 180/1A
at 23 °C       kJ/m²       ISO 179/1eA         at 0 °C       8       kJ/m²       ISO 179/1eA         at -20 °C       kJ/m²       ISO 179/1eA         Hardness Shore D       kJ/m²       ISO 179/1eA         THERMAL PROPERTIES         Heat deflection temperature <sup>(4)</sup> at 1.80 MPa (HDT/A)       55       °C       ISO 75         at 0.45 MPa (HDT/B)       80       °C       ISO 75         Victat Softening Temperature <sup>(5)</sup>	at -20 °C	5	kJ/m²	ISO 180/1A
at 0 °C       8       kJ/m²       ISO 179/1eA         at -20 °C       kJ/m²       ISO 179/1eA         Hardness Shore D       65       -2       ISO 868         HERMAL PROPERTIES         Heat deflection temperature <sup>(4)</sup> at 1.80 MPa (HDT/A)       55       °C       ISO 75         at 0.45 MPa (HDT/B)       80       °C       ISO 75         Viciat Softening Temperature <sup>(5)</sup>	Charpy Impact Strength Notched			
at -20 °C       kJ/m²       ISO 179/1eA         Hardness Shore D       65       -       ISO 868         HERMAL PROPERTIES         Heat deflection temperature <sup>(4)</sup> 55       °C       ISO 75         at 0.45 MPa (HDT/B)       80       °C       ISO 75         vicat Softening Temperature <sup>(5)</sup>	at 23 °C	12.5	kJ/m²	ISO 179/1eA
Hardness Shore D         65         -         ISO 868           THERMAL PROPERTIES           Heat deflection temperature <sup>(4)</sup> at 1.80 MPa (HDT/A)         55         °C         ISO 75           at 0.45 MPa (HDT/B)         80         °C         ISO 75           Vicat Softening Temperature <sup>(5)</sup> Vicat Softening Temperature <sup>(5)</sup> Vicat Softening Temperature <sup>(5)</sup>	at 0 °C	8	kJ/m²	ISO 179/1eA
THERMAL PROPERTIES           Heat deflection temperature <sup>(4)</sup> at 1.80 MPa (HDT/A)         55         °C         ISO 75           at 0.45 MPa (HDT/B)         80         °C         ISO 75           Vicat Softening Temperature <sup>(5)</sup>	at -20 °C	5	kJ/m²	ISO 179/1eA
Heat deflection temperature <sup>(4)</sup> at 1.80 MPa (HDT/A)       55       °C       ISO 75         at 0.45 MPa (HDT/B)       80       °C       ISO 75         Vicat Softening Temperature <sup>(5)</sup>	Hardness Shore D	65	-	ISO 868
at 1.80 MPa (HDT/A)       55       °C       ISO 75         at 0.45 MPa (HDT/B)       80       °C       ISO 75         Vicat Softening Temperature (5)				
at 0.45 MPa (HDT/B) 80 °C ISO 75  Vicat Softening Temperature (5)	Heat deflection temperature <sup>(4)</sup>			
Vicat Softening Temperature (5)	at 1.80 MPa (HDT/A)	55	°C	ISO 75
		80	°C	ISO 75
440	Vicat Softening Temperature <sup>(5)</sup>			
at 10 N (VS1/A)	at 10 N (VST/A)	149	°C	ISO 306



PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
at 50 N (VST/B)	74	°C	ISO 306

- (1) All measurements on injection molded samples.
- (2) Speed of testing: 50 mm/min
- (3) Speed of testing: 1 mm/min
- (4) Flat wise (testbar 80\*10\*4mm)
- (5) Temperature rate: 120°C/h

#### **QUALITY**

SABIC Europe is fully certified in accordance with the internationally accepted quality standard ISO9001.

#### STORAGE AND HANDLING

Avoid prolonged storage in open sunlight, high temperatures (<50 °C) and/or high humidity as this could well speed up alteration and consequently loss of quality of the material and/or its packaging. Keep material completely dry for good processing.

#### **DISCLAIMER**

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