

Product Comparison

Technical Data

Product Description				
Generic LLDPE	This data represents typical values that have been calculated from all products classified as: Generic LLDPE			
This information is provided for comparative purposes only.				
General	QAMAR FC21HN	Generic LLDPE		
Manufacturer / Supplier	<ul style="list-style-type: none"> SPDC Ltd. 	<ul style="list-style-type: none"> Generic 		
Generic Symbol	<ul style="list-style-type: none"> LLDPE 	<ul style="list-style-type: none"> LLDPE 		
Material Status	<ul style="list-style-type: none"> Commercial: Active 	<ul style="list-style-type: none"> Commercial: Active 		
Availability	<ul style="list-style-type: none"> Africa & Middle East Asia Pacific Europe North America 	<ul style="list-style-type: none"> Africa & Middle East Asia Pacific Europe Latin America North America 		
Additive	<ul style="list-style-type: none"> Antiblock Slip 	--		
Features	<ul style="list-style-type: none"> Antiblocking General Purpose Medium Clarity Slip 	--		
Uses	<ul style="list-style-type: none"> Film General Purpose 	--		
Processing Method	<ul style="list-style-type: none"> Blown Film 	--		
Physical	QAMAR FC21HN	Generic LLDPE	Unit	Test Method
Density / Specific Gravity				
--	--	0.870 to 1.08	g/cm ³	ASTM D792
--	--	0.905 to 0.943	g/cm ³	ISO 1183
--	0.918	--	g/cm ³	ASTM D4883
--	--	0.917 to 0.937	g/cm ³	ASTM D1505
--	--	0.917 to 0.926	g/cm ³	ASTM D4883
Apparent (Bulk) Density				
--	--	0.55 to 0.56	g/cm ³	ASTM D1895
--	--	0.34 to 0.39	g/cm ³	ISO 60
Melt Mass-Flow Rate (MFR)				
190°C/2.16 kg	--	0.14 to 4.6	g/10 min	ASTM D1238
190°C/2.16 kg	1.0	--	g/10 min	ISO 1872-2
190°C/2.16 kg	--	0.20 to 5.2	g/10 min	ISO 1133
Spiral Flow	--	32.0 to 47.3	cm	
Environmental Stress-Cracking Resistance (ESCR)	--	0.300 to 1780	hr	ASTM D1693
Carbon Black Content	--	2.1 to 50	%	ASTM D1603
Mechanical	QAMAR FC21HN	Generic LLDPE	Unit	Test Method
Tensile Modulus	--	181 to 556	MPa	ASTM D638
Tensile Strength				
Yield	--	7.52 to 22.4	MPa	ASTM D638
Yield	9.00	--	MPa	ISO 1872-2
Yield	--	8.45 to 20.5	MPa	ISO 527-2
Break	--	7.26 to 30.0	MPa	ASTM D638
Break	--	7.00 to 28.4	MPa	ISO 527-2
--	--	8.27 to 17.8	MPa	ASTM D638

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Mechanical	QAMAR FC21HN	Generic LLDPE	Unit	Test Method
Tensile Elongation				
Yield	--	2.0 to 23	%	ASTM D638
Yield	--	3.0 to 1000	%	ISO 527-2
Break	--	8.0 to 1000	%	ASTM D638
Break	> 430	--	%	ISO 1872-2
Break	--	60 to 840	%	ISO 527-2
Nominal Tensile Strain at Break	--	350 to 500	%	ISO 527-2
Apparent Bending Modulus	--	5.00 to 420	MPa	ASTM D747
Flexural Modulus				
--	--	245 to 781	MPa	ASTM D790
--	200	--	MPa	ISO 1872-2
--	--	110 to 750	MPa	ISO 178
Flexural Strength	--	7.82 to 13.2	MPa	ASTM D790
Coefficient of Friction	--	0.079 to 1.0		ASTM D1894
Films	QAMAR FC21HN	Generic LLDPE	Unit	Test Method
Film Thickness - Tested	30	15 to 65	µm	
Film Puncture Energy	--	4.45	J	
Film Puncture Force	--	4.31 to 76.5	N	
Film Puncture Resistance	--	13.7	J/cm ³	
Film Toughness				ASTM D882
MD	--	208	J/cm ³	
TD	--	215	J/cm ³	
Secant Modulus				
MD	--	143 to 224	MPa	ASTM D882
TD	--	127 to 265	MPa	ASTM D882
--	--	138 to 451	MPa	ISO 527-3
MD : 30 µm	190	--	MPa	ISO 527-3
TD : 30 µm	220	--	MPa	ISO 527-3
Tensile Strength				
MD : Yield	--	7.03 to 13.5	MPa	ASTM D882
TD : Yield	--	8.06 to 12.7	MPa	ASTM D882
Yield	--	9.73 to 12.4	MPa	ISO 527-3
MD : Break	--	23.7 to 60.6	MPa	ASTM D882
TD : Break	--	16.9 to 46.5	MPa	ASTM D882
Break	--	24.3 to 45.3	MPa	ISO 527-3
MD : Break, 30 µm	55.0	--	MPa	ISO 527-3
TD : Break, 30 µm	40.0	--	MPa	ISO 527-3
--	--	24.5 to 50.5	MPa	ISO 527-3
Tensile Elongation				
MD : Yield	--	8.0 to 1100	%	ASTM D882
TD : Yield	--	4.0 to 38	%	ASTM D882
MD : Break	--	440 to 870	%	ASTM D882
TD : Break	--	670 to 940	%	ASTM D882
Break	--	550 to 1000	%	ISO 527-3
MD : Break, 30 µm	550	--	%	ISO 527-3
TD : Break, 30 µm	850	--	%	ISO 527-3
Flexural Modulus				ASTM D790
MD	--	192	MPa	
TD	--	221	MPa	

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Films	QAMAR FC21HN	Generic LLDPE	Unit	Test Method
Dart Drop Impact				
--	--	39 to 230	g	ASTM D1709
--	--	57 to 170	g	ISO 7765-1
30 µm	120	--	g	ISO 7765-1
Elmendorf Tear Strength				
MD	--	0.0 to 490	g	ASTM D1922
TD	--	210 to 810	g	ASTM D1922
--	--	0.50 to 6.2	N	ISO 6383-2
MD : 30 µm	30	--	N	ISO 6383-2
TD : 30 µm	160	--	N	ISO 6383-2
Seal Initiation Temperature	--	102 to 130	°C	
Impact	QAMAR FC21HN	Generic LLDPE	Unit	Test Method
Charpy Unnotched Impact Strength	--	4.6 to 87	kJ/m ²	ISO 179
Notched Izod Impact	--	15 to 600	J/m	ASTM D256
Unnotched Izod Impact	--	500 to 700	J/m	ASTM D4812
Multi-Axial Instrumented Impact Energy	--	15.0 to 80.5	J	ISO 6603-2
Tensile Impact Strength	--	52.5 to 259	kJ/m ²	ASTM D1822
Drop Impact Resistance	--	158 to 200	J/cm	ASTM D4226
Impact Strength	--	40 to 259	J	ARM
Hardness	QAMAR FC21HN	Generic LLDPE	Unit	Test Method
Durometer Hardness				
--	--	20 to 94		ASTM D2240
--	--	47 to 68		ISO 868
Shore D	55	--		ISO 868
Thermal	QAMAR FC21HN	Generic LLDPE	Unit	Test Method
Deflection Temperature Under Load				
0.45 MPa, Unannealed	--	42.0 to 65.4	°C	ASTM D648
0.45 MPa, Unannealed	--	53.8 to 72.0	°C	ISO 75-2/B
1.8 MPa, Unannealed	--	35.8 to 43.0	°C	ASTM D648
Brittleness Temperature				
--	--	-76.5 to -59.8	°C	ASTM D746
--	< -70.0	-71.0 to -39.5	°C	ISO 974
Vicat Softening Temperature				
--	--	84.9 to 120	°C	ASTM D1525
--	102	89.5 to 122	°C	ISO 306
Melting Temperature				
--	--	120 to 129	°C	
--	--	120 to 126	°C	DSC
--	122	115 to 127	°C	ISO 11357-3
--	--	119 to 128	°C	ASTM D3418
--	--	116 to 126	°C	ISO 3146
Peak Crystallization Temperature (DSC)				
--	--	107 to 127	°C	ASTM D3418
--	--	106 to 127	°C	ISO 3146

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Electrical	QAMAR FC21HN	Generic LLDPE	Unit	Test Method
Surface Resistivity	--	1.0E+11 to 1.0E+17	ohms	IEC 60093
Volume Resistivity	--	1.1 to 1.0E+17	ohms·cm	ASTM D257
Dielectric Strength	--	20 to 56	kV/mm	ASTM D149
Dielectric Constant	--	2.17 to 2.54		ASTM D150
Dissipation Factor	--	6.0E-5 to 25		ASTM D150

Optical	QAMAR FC21HN	Generic LLDPE	Unit	Test Method
Gloss	--	35 to 81		ASTM D523
Gloss	--	22 to 100		ASTM D2457
Clarity	--	48.8 to 75.0		ASTM D1746
Haze				
--	--	0.400 to 22.3	%	ASTM D1003
30.0 µm	11.0	--	%	ISO 14782

Injection	QAMAR FC21HN	Generic LLDPE	Unit
Rear Temperature	--	173 to 186	°C
Middle Temperature	--	185 to 201	°C
Front Temperature	--	184 to 235	°C
Nozzle Temperature	--	204 to 220	°C
Processing (Melt) Temp	--	170 to 221	°C
Mold Temperature	--	18 to 30	°C

Injection Notes

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Extrusion	QAMAR FC21HN	Generic LLDPE	Unit
Cylinder Zone 1 Temp.	--	168 to 203	°C
Cylinder Zone 2 Temp.	--	178 to 213	°C
Cylinder Zone 3 Temp.	--	180 to 232	°C
Cylinder Zone 4 Temp.	--	180 to 220	°C
Cylinder Zone 5 Temp.	--	189 to 231	°C
Adapter Temperature	--	210 to 228	°C
Melt Temperature	--	68 to 59809	°C
Die Temperature	--	170 to 271	°C
Screw L/D Ratio	24.0:1.0	--	

Extrusion Notes

QAMAR FC21HN Resin Temperature: 200°C
Blow up ratio: 2.0
Extruder: 40 mm, L/D=24
Die Diameter: 75mm

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Notes

¹ Typical properties: these are not to be construed as specifications.