

Technical Data

Product Description

	General Purpose
Keyflex® BT 1035D	Application Automotive Parts, Electrical & Electronic Parts
	Material Type TPC-ET
Generic TPC-ET	This data represents typical values that have been calculated from all products classified as: Generic TPC-ET
	This information is provided for comparative purposes only.

General	Keyflex® BT 1035D	Generic TPC-ET
Manufacturer / Supplier	<ul style="list-style-type: none"> LG Chem Ltd. 	<ul style="list-style-type: none"> Generic
Generic Symbol	<ul style="list-style-type: none"> TPC-ET 	<ul style="list-style-type: none"> TPC-ET
Material Status	<ul style="list-style-type: none"> Commercial: Active 	<ul style="list-style-type: none"> Commercial: Active
Search for UL Yellow Card	<ul style="list-style-type: none"> LG Chem Ltd. Keyflex® BT 	--
Availability	<ul style="list-style-type: none"> Asia Pacific Europe Latin America North America 	<ul style="list-style-type: none"> Africa & Middle East Asia Pacific Europe Latin America North America
Uses	<ul style="list-style-type: none"> Automotive Applications Electrical/Electronic Applications General Purpose 	--

Physical	Keyflex® BT 1035D	Generic TPC-ET	Unit	Test Method
Density / Specific Gravity				
-- ²	1.12	--	g/cm ³	ASTM D792
--	--	1.12 to 1.27	g/cm ³	ASTM D792
--	--	1.08 to 1.29	g/cm ³	ISO 1183
23°C	1.12	--	g/cm ³	ISO 1183
--	--	1.12 to 1.25	g/cm ³	ASTM D1505
Apparent (Bulk) Density	--	0.65 to 0.83	g/cm ³	ISO 60
Melt Mass-Flow Rate (MFR)				
230°C/2.16 kg	25	14 to 34	g/10 min	ASTM D1238
230°C/2.16 kg	25	4.9 to 34	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (230°C/2.16 kg)	--	2.7 to 49	cm ³ /10min	ISO 1133
Molding Shrinkage				
Flow	--	0.36 to 1.7	%	ASTM D955
Flow : 3.00 mm	0.80 to 1.0	--	%	ASTM D955 ISO 294-4
Across Flow	--	0.39 to 1.5	%	ASTM D955
Across Flow : 3.00 mm	0.80 to 1.0	--	%	ASTM D955 ISO 294-4
--	--	0.97 to 2.0	%	ISO 294-4



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Water Absorption				
24 hr	--	0.30 to 0.80	%	ASTM D570
24 hr, 23°C, immersion	0.61	--	%	ASTM D570
24 hr, 23°C ³	0.61	--	%	ISO 62
24 hr, 23°C	--	0.10 to 0.95	%	ISO 62
Saturation, 23°C	--	0.10 to 3.3	%	ISO 62
Equilibrium	--	0.30 to 0.50	%	ASTM D570
Equilibrium, 23°C, 50% RH	--	0.18 to 0.33	%	ISO 62
Mechanical				
Mechanical	Keyflex® BT 1035D	Generic TPC-ET	Unit	Test Method
Tensile Modulus				
--	--	10.0 to 413	MPa	ASTM D638
3.00 mm ⁴	5.59	--	MPa	ASTM D638
--	--	14.0 to 281	MPa	ISO 527-1
2.00 mm	42.0	--	MPa	ISO 527-1/1
Tensile Strength				
Yield	--	13.2 to 35.0	MPa	ASTM D638
Yield	--	6.00 to 27.0	MPa	ISO 527-2
Break	--	0.300 to 55.1	MPa	ASTM D638
Break, 3.00 mm ⁴	21.6	--	MPa	ASTM D638
Break	--	14.7 to 55.5	MPa	ISO 527-2
Break, 2.00 mm	18.0	--	MPa	ISO 527-2/250
--	--	5.00 to 37.6	MPa	ASTM D638
--	--	0.800 to 24.0	MPa	ISO 527-2
Tensile Strain				
Yield	--	17 to 51	%	ISO 527-2
Break	--	4.0 to 1000	%	ASTM D638
Break, 3.00 mm ⁴	1000	--	%	ASTM D638
Break	--	290 to 820	%	ISO 527-2
Break, 2.00 mm	930	--	%	ISO 527-2/250
Nominal Tensile Strain at Break				
	--	35 to 910	%	ISO 527-2
Tensile Creep Modulus				
				ISO 899-1
1 hr	--	206	MPa	
1000 hr	--	173	MPa	
Flexural Modulus				
--	--	10.0 to 303	MPa	ASTM D790
6.40 mm ⁵	50.6	--	MPa	ASTM D790
--	--	8.00 to 326	MPa	ISO 178
4.00 mm ⁶	44.0	--	MPa	ISO 178
Flexural Strength				
4.00 mm ⁶	4.00	--	MPa	ASTM D790 ISO 178
--	--	1.00 to 20.6	MPa	ISO 178
Poisson's Ratio				
	--	0.47 to 0.50		ASTM E132



Elastomers	Keyflex® BT 1035D	Generic TPC-ET	Unit	Test Method
Tensile Stress (Break)	--	18.0 to 33.2	MPa	ISO 37
Tensile Elongation (Break)	--	300 to 500	%	ISO 37
Tear Strength				
--	--	29.4 to 249	kN/m	ASTM D624
--	--	51.0 to 233	kN/m	ISO 34-1
Compression Set	--	34 to 51	%	ISO 815
Bayshore Resilience	--	40 to 65	%	ASTM D2632
Impact	Keyflex® BT 1035D	Generic TPC-ET	Unit	Test Method
Charpy Notched Impact Strength				ISO 179
--	--	3.5 to 120	kJ/m ²	
-40°C	No Break	--		
23°C	No Break	--		
Notched Izod Impact				
--	--	29 to 310	J/m	ASTM D256
-40°C, 6.40 mm	No Break	--		ASTM D256
23°C, 6.40 mm	No Break	--		ASTM D256
--	--	3.0 to 83	kJ/m ²	ISO 180
-40°C	No Break	--		ISO 180
23°C	No Break	--		ISO 180
Tensile Impact Strength	--	140 to 310	kJ/m ²	ISO 8256
Hardness	Keyflex® BT 1035D	Generic TPC-ET	Unit	Test Method
Durometer Hardness				
--	--	27 to 72		ASTM D2240
Shore A	88	--		ASTM D2240
Shore D	35	--		ASTM D2240
--	--	18 to 98		ISO 868
Shore Hardness				ISO 48-4
--	--	24 to 71		
15 sec	35	--		
Thermal	Keyflex® BT 1035D	Generic TPC-ET	Unit	Test Method
Deflection Temperature Under Load				
0.45 MPa, Unannealed	--	59.9 to 111	°C	ASTM D648
0.45 MPa, Unannealed	--	45.2 to 116	°C	ISO 75-2/B
0.45 MPa, Unannealed, 4.00 mm	51.0	--	°C	ISO 75-2/Bf
1.8 MPa, Unannealed	--	39.9 to 52.9	°C	ISO 75-2/A
Brittleness Temperature	--	-100 to -64.9	°C	ISO 974
Glass Transition Temperature				
--	--	-80.0 to 29.3	°C	ISO 11357-2
--	--	2.00 to 65.3	°C	DSC
Vicat Softening Temperature				
--	--	70.4 to 211	°C	ASTM D1525
--	--	44.0 to 213	°C	ISO 306



Thermal	Keyflex® BT 1035D	Generic TPC-ET	Unit	Test Method
Melting Temperature				
-- ⁷	166	--	°C	ISO 11357-3
--	--	165 to 221	°C	ISO 11357-3
--	166	164 to 220	°C	ASTM D3418
--	--	150 to 219	°C	ISO 3146
CLTE				
Flow	--	1.4E-4 to 2.0E-4	cm/cm/°C	ASTM D696
Flow : -30 to 80°C	2.1E-4	--	cm/cm/°C	ASTM D696 ISO 11359-2
Flow	--	1.5E-4 to 2.2E-4	cm/cm/°C	ISO 11359-2
Transverse : -30 to 80°C	2.0E-4	--	cm/cm/°C	ASTM D696 ISO 11359-2
Transverse	--	1.5E-4 to 2.3E-4	cm/cm/°C	ISO 11359-2
Electrical	Keyflex® BT 1035D	Generic TPC-ET	Unit	Test Method
Surface Resistivity				
--	2.0E+14	--	ohms	ASTM D257
--	--	2.0E+13 to 5.0E+15	ohms	IEC 62631-3-2
Volume Resistivity				
--	3.0E+13	1.0E+13 to 1.8E+16	ohms·cm	ASTM D257
--	--	1.0E+14 to 1.0E+17	ohms·cm	IEC 60093
--	--	4.0E+9 to 1.0E+13	ohms·m	IEC 62631-3-1
Dielectric Strength				
--	--	26	kV/mm	ASTM D149
23°C, 1.00 mm	17	--	kV/mm	ASTM D149
--	--	14 to 26	kV/mm	IEC 60243-1
Dielectric Constant				
--	--	3.98 to 6.00		IEC 60250
--	--	4.13		IEC 62631-2-1
Dissipation Factor				
--	--	9.0E-3 to 0.065		IEC 60250
--	--	1.0E-3 to 0.081		IEC 62631-2-1
Comparative Tracking Index				
--	--	593 to 600	V	IEC 60112
Solution A	600	--	V	
Flammability	Keyflex® BT 1035D	Generic TPC-ET	Unit	Test Method
Burning Rate	--	78 to 80	mm/min	ISO 3795
Flame Rating (1.5 mm)	HB	--		UL 94
Oxygen Index	--	20 to 21	%	ISO 4589-2
Fill Analysis	Keyflex® BT 1035D	Generic TPC-ET	Unit	Test Method
Melt Density	--	0.896 to 1.07	g/cm ³	
Melt Viscosity	--	0.500 to 403	Pa·s	ASTM D3835
Melt Specific Heat	--	1800	J/kg/°C	ASTM C351
Melt Thermal Conductivity	--	0.10	W/m/K	ASTM C177



Injection	Keyflex® BT 1035D	Generic TPC-ET	Unit
Drying Temperature	80 to 90	84 to 110	°C
Drying Time	3.0 to 4.0	2.5 to 4.1	hr
Suggested Max Moisture	0.080	0.010 to 0.082	%
Rear Temperature	170 to 190	173 to 231	°C
Middle Temperature	180 to 200	175 to 241	°C
Front Temperature	190 to 210	175 to 246	°C
Nozzle Temperature	190 to 210	180 to 246	°C
Processing (Melt) Temp	165 to 205	180 to 251	°C
Mold Temperature	10 to 35	23 to 51	°C

Injection Notes

Generic TPC-ET

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Extrusion	Keyflex® BT 1035D	Generic TPC-ET	Unit
Drying Temperature	80 to 90	80 to 110	°C
Drying Time	3.0 to 4.0	2.5 to 3.5	hr
Suggested Max Moisture	0.080	0.010 to 0.060	%
Cylinder Zone 1 Temp.	170 to 190	190 to 230	°C
Cylinder Zone 2 Temp.	180 to 200	200 to 240	°C
Cylinder Zone 3 Temp.	180 to 200	190 to 240	°C
Cylinder Zone 4 Temp.	180 to 200	190 to 240	°C
Adapter Temperature	180 to 200	190 to 240	°C
Melt Temperature	165 to 205	192 to 236	°C
Die Temperature	180 to 200	189 to 231	°C

Extrusion Notes

Generic TPC-ET

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Notes

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

² 23°C

³ immersion

⁴ 50 mm/min

⁵ 15 mm/min

⁶ 2.0 mm/min

⁷ Peak

