

### Annexure

**Name of Institute:** Gujarat Industrial Research and Development Agency-Vadodara

#### Testing Facility available - Polymers & Plastic

Sr.No.	Type of Testing	Laboratory	Instrument Detail	Standard (If any)	Applicable Testing Charges (per sample) + GST Extra
1	Dimension	Polymers and Plastic	Measuring Tape/Pi-Tape/Digital Vernier Caliper/Micro meter Gauge	IS 4984: 95, IS 12235 (Part 1 to 4), IS 14735: 99, IS 14885: 2001, IS 2508: 84, IS 7834 (Part 1, 3,6,8): 87, IS 12701: 96, IS 12786: 89, IS 13488: 2008, IS 13592: 2013, IS 14151 (Part 1): 1999, IS 14333: 1996, IS 15801: 2008, IS 15351: 2015, IS 15410: 2003, IS 15328: 2003, IS 15609: 2005, IS 15907: 2010, IS 16028: 2015, IS 9755: 2013, IS 7903: 2000, IS 11652: 2000, IS 15778: 2007, IS 4985: 2000, IS 16098 (Part 1 & 2): 2013	350
2	Visual Appearance /Workmanship/Finish/ Shape/Colour	Polymers and Plastic	NA	IS 4985: 2000, IS 4984: 1995, IS 14885: 2001, IS 2508: 1984, IS 7834 (Part 1,3,6,8): 1987, IS 12701: 1996, IS 12786: 1989, IS 12818: 2010, IS 13487: 1992, IS 13488: 2008, IS 13592: 1992, IS 14151 (Part 1): 1999, IS 14333: 1996, IS 15801: 2008, IS 15328: 2003, IS 15778: 2007, IS 16098 (Part 1 & 2): 2013	650
3	Specific Gravity /Density	Polymers and Plastic	Specific Gravity Tester (Analytical Weight Balance)	IS 13360 (Part 3/Sec I): 1996 & ASTM D 792: 2008, IS 7328: 1992, IS 16098 (Part 1 & 2): 2013	1050
4	Melt Flow Rate	Polymers and Plastic	Melt Flow Index Tester	BIS 2530: 1963 & IS 13360 (Part 4/Sec I): 2000, IS 16098 (Part 2): 2013, ASTM D1238: 2013, ISO 1133: 2011, IS 13360 (Part-4/S1): 2000 (RA 2008)	1250
5	Heat Deflection Temperature	Polymers and Plastic	Heat Deflection Temperature Tester	ASTM D 648: 07, IS 13360 (Part 6/Sec III): 13	1700
6	Vicat Softing point	Polymers and Plastic	Vicat Softing point Tester	IS 12235 (Part 2): 2004 & ASTM D 1525: 2009 IS 13360 (Part 6/Sec I): 1999, IS 6307: 1985, IS 15328: 2003	1700
7	Moisture Content (by Karl Fischer method)	Polymers and Plastic	Karl Fischer Apparatus	ISO 15512, ASTM D 570	850
8	Moisture Content (by Moisture Analyzer)	Polymers and Plastic	Moisture Analyser	ASTM D 6304, ISO: 15512; ASTM D 95; ASTM D 6980	850
9	Shore D Hardness	Polymers and Plastic	Hardness tester	ASTM D2240: 2015, IS 13360 (Part-5/S11): 2013, ISO 868:2003	850
10	Oxidative Induction Time	Polymers and Plastic	Differential Scanning Calometry (DSC)	IS 14885: 2001 & ASTM D 3895: 2007, ISO 11357	3500
11	Water absorption, 24hrs	Polymers and Plastic	Hot Air circulating oven	ASTM D 570:95, IS 13360 (Part 8, Sec 119): 97	950

12	Melting point, 0C (By DSC Analysis Instrument)	Polymers and Plastic	Differential Scanning Calometry (DSC)	ASTM D 6341	3500
13	Volume Resistivity @ + 23°C	Polymers and Plastic	Surface and Volume resistivity tester	ASTM D 257	1050
14	Dielectric withstand, 1000 Volt/sec @ + 23 °C	Polymers and Plastic	Di-electric withstand tester	ASTM D 149	1250
15	Tensile Strength (at 23±2°C)	Polymers and Plastic	Tensile Testing Machine-10Ton/250kg	ASTM D638: 2014, ASTM D882: 2012, ASTM D3916: 2008, ISO 527: 2012 ,IS 13360 (Part-5/S2): 1996 (RA 2008),IS 13360 (Part-5/S3): 1996 (RA 2010),IS 13360 (Part-5/S1): 1996, ISO 527:2012, IS 13360 (Part-5/S25&S26):2004 (RA 2010)	950
16	Elongation at Break (at 23±2°C)	Polymers and Plastic	Tensile Testing Machine-10Ton/250kg	ASTM D638: 2014, ASTM D882: 2012, ASTM D3916: 2008, ISO 527: 2012 ,IS 13360 (Part-5/S2): 1996 (RA 2008),IS 13360 (Part-5/S3): 1996 (RA 2010),IS 13360 (Part-5/S1): 1996, ISO 527:2012, IS 13360 (Part-5/S25&S26):2004 (RA 2010)	950
17	Flexural Modulus	Polymers and Plastic	Tensile Testing Machine-10Ton/250kg	IS 12701, ASTM D790, ISO 178	950
18	Carbon Black level	Polymers and Plastic	Carbon black content tester	ASTM D 1603: 2006, IS 2530:1963 (RA 2008)	1200
19	Environmental Stress Crack Resistance (ESCR) (for F50) High Density [Condition "B" or "C"]	Polymers and Plastic	Environmental Stress Crack Resistance Tester	ASTM D 1693: 2008,IS 12786: 1989 IS 13488: 2008	4500
20	Charpy impact strength	Polymers and Plastic	Impact tester	ISO 179,IS 13360 (Part 5/Sec V): 1996	1250
21	Izod Impact strength	Polymers and Plastic	Impact tester	ASTM D256, ISO 180,IS 13360 (Part 5/Sec IV): 1996	1250
22	Tear Strength	Polymers and Plastic	Tear Tester	ISO 6383-2, ISO 1974,ISO 5636,ASTM D1424,ASTM D689	1250
23	Falling Weight Impact Test	Polymers and Plastic	Impact Tester	ASTM D1709, ISO 7765-1	1250
24	Resistance To External Blow at 0 °C	Polymers and Plastic	Impact Tester	IS 4985: 2000	1250

25	Hydrostatic pressure test (up to 350 mm)	Polymers and Plastic	Hydrostatic pressure tester	IS 12235 (Part 8): 2004 , IS 14885: 2001,IS 4984: 1995, IS 7834 (Part 1,3,6,8): 1987, IS 12786: 1989, IS 13488: 2008, IS 14151 (Part 1): 1999, IS 14333: 1996	950
26	Sulphated Ash content	Polymers and Plastic	Muffle Furnance	IS 14887: 2014, IS 14968: 2015, IS 15351: 2015, IS 16208: 2015	1250
27	Filler content (up to 1000 oC)	Polymers and Plastic	Muffle Furnance	NA	1050
28	FT-IR Spectroscopy	Polymers and Plastic	FT-IT Instruments	NA	3500
29	Differntail Scanning Calometry (including Melting Point, softning Point, Glass Transition Temprature)	Polymers and Plastic	Differntail Scanning Calometry instrument	NA	3500
30	Thermogravimetry Analysis (Thermal behaviour, Thermal degration temp., Oxygen Induction Time (Up to 1000 oC)	Polymers and Plastic	Thermogravimetry Instrument	NA	3500
31	Emission rate test	Polymers and Plastic	Emission rate tester	BIS 13487, BIS 13488	1100
32	Pull out test	Polymers and Plastic	Pull out tester	BIS 13487, BIS 13488	750
33	UV stabilizer	Polymers and Plastic	UV Spectroscopy	BIS 12786	2500
34	Uniformity of emission Rate	Polymers and Plastic	Emission rate tester	BIS 13487, BIS 13488	1450
35	Emission rate as a function of inlet pressure	Polymers and Plastic	Emission rate tester	BIS 13487, BIS 13488	850
36	Resistance to Hydrostatic pressure at ambient temperature	Polymers and Plastic	Emission rate tester	BIS 13487, BIS 13488	950
37	Resistance to Hydrostatic pressure at Elevated temperature	Polymers and Plastic	Emission rate tester	BIS 13487, BIS 13488	1450
38	Resistance to Tension at Elevated temperature	Polymers and Plastic	Emission rate tester	BIS 13487, BIS 13488	950
39	Determination of emitting unit exponent (this test applies to both regulated and unregulated emitting units)	Polymers and Plastic	Emission rate tester	BIS 13487, BIS 13488	950

40	Ends per dm	Polymers and Plastic	NA	IS : 9755 : 2003	350
41	Picks per dm	Polymers and Plastic	NA	IS : 9755 : 2003	350
42	Mass of fabric, g/m <sup>2</sup>	Polymers and Plastic	Analytical Weight Balance	IS : 9755 : 2003	350
43	Average breaking strength of fabric, [ Ravened strip method), kgf a) Length-wise b) Width-wise	Polymers and Plastic	Tensile Testing Machine- 10Ton/250kg	IS : 9755 : 2003	1250
44	Thermal ageing resistance (100 °C for 100 days )	Polymers and Plastic	Hot Air circulating oven	ISO 21809-1, DIN 30670, ISO 10289, ISO 10290	31,250
45	Thermal ageing resistance (100 °C for 200 days)	Polymers and Plastic	Hot Air circulating oven	ISO 21809-1, DIN 30670, ISO 10289, ISO 10290	58,600
46	Indentation at 23 OC	Polymers and Plastic	Indetation tester	ISO 21809-1, DIN 30670, ISO 10289, ISO 10290	950
47	Indentation at 80 OC	Polymers and Plastic	Indetation tester	ISO 21809-1, DIN 30670, ISO 10289, ISO 10290	1250
48	Opacity	Polymers and Plastic	Opacity tester	IS 1225 (Part 3): 2004 IS 7834 (Part 1,3,8): 1987	650
49	Reversion test	Polymers and Plastic	Reversion oil bath	IS 12235 (Part 5): 2004	950
50	Carbon black dispersion	Polymers and Plastic	Miscroscope	IS 2530: 1963	450