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उत्पाद मैनुअल

संकचन और बहिर्वेधन के लिए पोलीप्रोपयलीन सामग्री की विशिष्टि

IS 10951:2020 के अनुसार

**PRODUCT MANUAL FOR
SPECIFICATION FOR POLYPROPYLENE (PP) MATERIALS
FOR MOULDING AND EXTRUSION
ACCORDING TO IS 10951:2020**

विभिन्न उत्पादों के लिए भारतीय मानक ब्यूरो (अनुरूपता मूल्यांकन) विनियम, 2018 की योजना -I के तहत प्रमाणन के संचालन में एकरूपता और पारदर्शिता के लिए इस उत्पाद मैनुअल का उपयोग सभी क्षेत्रीय / शाखा कार्यालयों और लाइसेंसधारियों द्वारा संदर्भ सामग्री के रूप में किया जाएगा। दस्तावेज़ का उपयोग बीआईएस प्रमाणन प्राप्त करने के इच्छुक संभावित आवेदकों द्वारा भी किया जा सकता है।

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure uniformity of practice and transparency in operation of certification under Scheme-I of Bureau of Indian Standards (Conformity Assessment) Regulations, 2018 for various products. The document may also be used by prospective applicants desirous of obtaining BIS certification.

1	मानक संख्या IS No.	:	IS 10951 : 2020
	शीर्षक Title	:	Specification For Polypropylene (PP) Materials For Moulding And Extrusion
	संशोधनों की संख्या No. of amendments	:	03
2	नमूना दिशानिर्देश Sampling Guidelines		
a)	कच्चा माल Raw material	:	No specific requirement
b)	समूहीकरण दिशानिर्देश Grouping Guidelines	:	कृपया Annex-A देखें Please refer ANNEX-A
c)	नमूने का परिमाण Sample Quantity	:	For factory sample: Sample shall be drawn from three or more sealed bags/package in a manner to have composite sample of 3 kg, approximately (Cl 9.2.1 of IS 10951:2020) For market sample: Minimum 3 kg

d)	परीक्षण अनुरोध में घोषित किए जाने वाले पैरामीटर Parameters to be Declared in Test Request	:	i) Complete Designation of the material as per Clause 3 of IS 10951:2020 ii) With/Without Additional requirement for product used in contact with Food stuff, Pharmaceuticals and drinking water iii) MFI/MFR (Melt Mass-Flow Rate) Note: Apart from the above, any other requirements/parameters may also be declared as per the standard, as applicable.
3	परीक्षण उपकरणों की सूची List of Test Equipment	:	कृपया Annex-B देखें Please refer ANNEX–B
4	निरीक्षण और परीक्षण की स्कीम Scheme of Inspection and Testing	:	कृपया Annex- C देखें Please refer ANNEX–C
5	एक दिन में संभावित परीक्षण Possible tests in a day	:	i) MFI (Melt Mass-Flow Rate) ii) Flexural Modulus iii) Izod impact strength
6	लाइसेंस का दायरा /Scope of the Licence:		
	Licence is granted to use standard Mark as per IS 10951:2020 with the following scope:		
	Name of the product	Polypropylene (PP)Materials for Moulding and Extrusion	
	Designation(s)	Designation of Polypropylene (PP)Materials as per Clause 3 of IS 10951:2020 For eg. – IS 10951- 4-MLS-ACE-TD15	
	Additional Requirements/ Properties	With/Without Additional requirement for product used in contact with Food stuff, Pharmaceuticals and drinking water <i>(as per Clause 6.4.2 of IS 10951:2020)</i>	

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New Delhi – 110002

ANNEX-A
GROUPING GUIDELINES

1. The manufacturer shall declare, in their application for considering grant of licence and/or change in scope of licence, each designation code which they intend to cover in the scope of the licence. The Scope of Licence may be restricted based on the Manufacturing and testing capabilities of the Manufacturer.
- 2) For considering grant of licence and/or change in scope of licence, the following grouping shall be considered:

Designation Code for Polypropylene Material

Data Block	Details of Data Block	Sample to be drawn/tested pertaining to each data block
Data Block 1	For Indian Standard	For information purpose only and has no bearing on the testing
Data Block 2	Type of material represented by one numeric code as given in Table 1. (Maximum one character)	a) Manufacturer shall declare each type of material (homopolymer, random copolymer or terpolymer, impact co-polymer or compounds) intended to be covered in the scope of licence as per Cl. 3.3. b) Samples of each type of material intended to be covered in the scope of licence shall be tested.
Data Block 3	Position 1: Intended application and/or method of processing. Positions 2 to 3: Important characteristics, additives and supplementary information. (Maximum three characters)	Manufacturer shall declare the intended application and/or method of processing represented by a code letter as per Table 2, followed by code-letters as per Table 2A describing characteristics, additives and supplementary information to be covered in the scope of licence as per Cl. 3.4 for each combination. (This is only to be provided as information to BIS and has no bearing on the testing)
Data Block 4	Designator properties (Maximum one character) Melt Flow Rate (MFR)/ Melt Flow Index (MFI)	a) Manufacturer shall declare the MFI/MFR Ranges as per Table 3 being manufactured and intended to be covered under the scope of licence. b) One sample each of the highest, lowest and intermediate MFI/MFR range, may be tested to cover the ranges. Eg. to cover designation codes for A, B, C, D and E of MFI/MFR Range, only three samples i.e. one each of codes A, code E and any one of the codes among B, C or D shall be tested.

Designation Code for Polypropylene Compounds

Data Block	Details of Data Block	Sample to be drawn/tested pertaining to each data block
Data Block 1	For Indian Standard	For information purpose only and has no bearing on the testing
Data Block 2	Type of material represented by one numeric code as given in Table 1. (Maximum one character)	a) Manufacturer shall declare each type of material (homopolymer, random copolymer or terpolymer, impact co-polymer or compounds) intended to be covered in the scope of licence as per Cl. 3.3. b) Samples of each type of material intended to be covered in the scope of licence shall be tested.
Data Block 3	Position 1: Intended application or method of processing. Positions 2 to 3: Important characteristics, additives and supplementary information. (Maximum three characters)	Manufacturer shall declare the intended application and/or method of processing represented by a code letter as per Table 2, followed by code-letters as per Table 2A describing characteristics, additives and supplementary information to be covered in the scope of licence as per Cl. 3.4 for each combination. (This is only to be provided as information to BIS and has no bearing on the testing)
Data Block 4	Designator properties (Maximum three characters)	
-do-	Position 1: MFI/MFR	a) Manufacturer shall declare the MFI/MFR Ranges represented by a code as per Table 3 being manufactured and intended to be covered under the scope of licence. b) One sample each of the highest, lowest and intermediate MFI/MFR range, may be tested to cover the ranges. Eg. to cover designation codes for A, B, C, D and E for MFI/MFR Range, only three samples i.e. one each of codes A, code E and any one of the codes among B, C or D shall be tested.
-do-	Position 2: Flexural modulus	a) Manufacturer shall declare the flexural modulus ranges represented by a code as per Table 4, intended to be covered in the scope of licence. b) One sample each of the highest, lowest and intermediate flexural modulus ranges shall be tested to cover the ranges.

		Eg. to cover designation codes for A, B, C, D and E for flexural modulus Range, only three samples i.e. one each of codes A, code E and any one of the codes among B, C or D shall be tested.
-do-	Position 3: Izod Impact Strength	a) Manufacturer shall declare the Izod Impact Strength ranges represented by a code as per Table 5, intended to be covered in the scope of licence. b) One sample each of the highest, lowest and intermediate Izod Impact Strength ranges shall be tested to cover the ranges. Eg. to cover designation codes for A, B, C, D and E for Izod Impact Strength Range, only three samples i.e. one each of codes A, code E and any one of the codes among B, C or D shall be tested.
Data Block 5	Position 1: Fillers or reinforcing materials Position 2: Physical form Position 3: Mass content (Maximum four character)	a) Manufacturer shall declare type of filler and/or reinforcing material and their physical forms intended to be covered in the scope of licence. b) Without a space, the mass content shall also be mentioned. (This is only to be provided as information to BIS and has no bearing on the testing)
Data Block 6 (optional)	Additional requirements (Maximum eleven characters)	Manufacturer may declare additional requirements intended to be covered in the scope of licence as per clause 3.7 for each combination. (This is only to be provided as information to BIS and has no bearing on the testing)

3. If product used for moulding or extrusion articles in contact with foodstuffs, pharmaceuticals and drinking water is intended to be covered in the scope of licence, samples (s) selected for testing shall also be tested for Special Requirements of Polymer Used for Molding or Extrusion Articles in Contact with Food Stuffs, Pharmaceutical and Drinking Water as per Cl 6.4.
4. Scope of licence shall be restricted based on the manufacturing and testing facilities available.
5. During the operation of the Licence, BO shall ensure that all the varieties covered in the Licence are tested in rotation, to the extent possible.

ANNEX – B

List of Test Equipment
(INDICATIVE LIST, FOR GUIDANCE ONLY)

Sl. No	Tests used in with Clause Reference	Test Equipment/Reagents
1	For sample preparation	Injection Molding Machine with moulds with suitable arrangement for heating
2	For monitoring of temperature and humidity	Thermometer and Hygrometer Or Dry and wet bulb thermometer
3	For maintaining laboratory temperature	Air conditioner
4	Melt Mass-Flow Rate, Cl. 6.2.1.1	Extrusion plastometer operating at a fixed temperature as per Fig. 1 of IS 13360(Part4/Sec1), Cylinder, Steel piston, Temperature-control system, Dies, made of tungsten carbide or hardened steel, Removable load, packing rod made of non-abrasive material, Cleaning equipment., Mercury-in-glass thermometer <u>For procedure A:</u> Cutting tool, Timer, <u>Balance For procedure B:</u> Measurement equipment
5	Flexural modulus, Cl. 6.2.1.2	Flexural modulus Test equipment
6	Izod Impact Strength, Cl. 6.2.1.3	Izod Impact Strength Test machine, Micrometers and gauges
7	Limits of pigments and colourants, Cl. 4.3	<u>For determination of Lead, Arsenic, Mercury, Cadmium, Zinc, Barium, Chromium, Antimony as per Cl. 15 of IS 1699</u> Kjeldahl Flasks, Atomic Absorption Spectrophotometer, hydride generation vessel accessory, Standard solutions of copper, zinc, chromium, antimony, lead, barium, arsenic, cadmium. Nitric acid - sp gr 1.42, Perchloric acid, Sulphuric acid-98%, Hydrochloric acid - sp gr 1.16 to 1.18, Hydrochloric acid - 5 N solution prepared by dilution with metal-free distilled water, Sodium sulphate, Sodium borohydride pellets, Potassium Chloride, Water – metal free. <u>For determination of Selenium as per IS 3025 (Part 56)</u> Spectrophotometric Method (Diamino naphthalene Method) - Spectrophotometer (480nm, light path of 1 cm), Volumetric Glasswares, Separating Funnel, Fluorocarbon Stopcock, Water Bath – Thermostatically Controlled, pH Meter, Centrifuge, Centrifuge Bottles with Fluorocarbon Screw Cap Stock Selenium Solution, Hydrochloric Acid, Ammonium Hydroxide, 2,3 – Diaminonaphthalene (DAN), Hydroxylamine Hydrochloride, Sodium Salt of EDTA, Amberlite XAD -8 or Equivalent Resin, Conc Hydrochloric Acid, Potassium Hydroxide

		Atomic Absorption Spectrometric Method (Hydride Technique)– Atomic Absorption Spectrometer (196.0 nm) Fitted with Hydride System and Hollow Cathode Lamp/Electrodeless Discharge Lamp, Gas (Argon or Nitrogen), Glasswares Decomposition Apparatus (Round Bottom Flask, Reflux Condenser, Condensate Reservoir) Nitric Acid, Sulphuric Acid, Hydrochloric Acid, Hydrogen Peroxide, Sodium Hydroxide, Sodium Tetrahydro borate, Selenium Stock Solution (1mg/ml). <u>For determination of primary aromatic amines and sulphonated aromatic amine (as per Annex B of IS 9833)</u> Weighing balance nearest to 0.0001 g, Ultrasonic bath, Centrifuge capable of 3000 rpm, HPLC system (equipped with gradient elution, DAD detector and pump), Column: (Nucleodur 100-5 C18 ec (Machery Nagel); 250 mm × 4 mm, 5 µm or Equivalent). pH strips, Hydrochloric Acid, Sodium Hydroxide, Methanol HPLC grade, Analytical Reference Standards, Phosphoric acid, Diammonium Hydrogen Phosphate, Distilled water <u>For determination of Polychlorinated biphenyl as per Annex C of IS 9833</u> LRGC HRMS with EI Mode, Rotary Evaporator, Weighing Balance nearest to 0.0001 g, Micropipette with Disposable Pipette Tips, Surgical Hand Gloves, Glass Column, Magnetic Stirrer and Magnetic Bar, Ground Joint Conical Flask— 500 ml, Conditioning/Test chamber for maintaining temperature condition $22 \pm 2^{\circ}\text{C}$. Dust free environment with positive pressure inside the laboratory by air handling unit. Concentrated Sulphuric Acid (Analytical Reagent Grade), n-Hexane (Analytical Reagent Grade), Dichloro Methane (Analytical Reagent Grade), Silica Gel - Equivalent to ICN/MP - Silica 63-200-60A or Other Suitable, PCB Standard Solution (EC 4058 - Cambridge) or Equivalent, n-Nonane, Celite-545, Cesium Hydroxide, Silver Nitrate, Alumina (MP - Alumina B Super -1) or Alternate, Sodium Sulphate Anhydrous, Toluene- Analytical Reagent Grade, Ethanol - Analytical Reagent Grade <u>For determination of Carcinogenic amine as per IS 14816</u> Suitable Reaction Vessel, Hot Cabinet with Sand Bath or water bath with thermostat, Thermometer — 0.1°C accuracy at 70°C, Volumetric Flasks, Polypropylene or Glass Column, Polypropylene or Polyethylene Syringe — 2 ml, Vacuum Rotary Evaporator, Pipettes— 10ml, 5ml, 2ml, 1 ml, Ultrasonic Bath with Thermostat, Round-bottom Flask with Standard-Ground Joint -100 ml, Analytical Instruments - Automatic applicator for HPLC or DC, Densitometer, Capillary electrophoresis with DAD, Capillary GC, split/splitless injector, preferably with MS/MSD, HPLC with gradient Controller preferably with DAD or HPLC-MS. Methanol, t-Butyl Methyl Ether, Sodium Dithionite — minimum 87 percent purity, Aqueous Sodium Dithionite Solution, n-Hexane, Amines (highest available purity standard), Stock-Solution of the Amines, Citrate Buffer Solution, 20 percent Methanolic Sodium Hydroxide. <u>For Carbon Black:</u> Determination of Benzene/Toluene Extract
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		Spectrophotometer, Absorption Cells, Analytical Balance (Sensitivity 0.01 mg), Oven, Filter Paper — Whatman No. 41 or equivalent, Mechanical Shaker, Mortar and Pestle, Glass Filtering Funnel, Beaker, Erlenmeyer Flask, Toluene-Analytical grade. DETERMINATION OF 3-4 BENZOPYRENE BY GC/MS GC/MS Equipped with CTC A200S auto sampler and a 30 m, 0.25 ID DB-5 MS fused silica capillary column, Rotary Evaporator, Helium Gas, Dichloromethane, PAH Standard, Internal Standard
8	Overall Migration, Cl. 6.4.2	Hot Air oven with digital temperature controller, Hot plate with temperature control regulators, Analytical balance or equivalent, capable of weighing to the nearest 0.1 mg, Platinum crucible or silica dish, Desiccator, Glassware & distilled water.

List of additional test equipment for typical additional properties to be measured along with recommended test methods as per Cl 6.3.2 /Table 8 (this is only for guidance and availability of following test equipment is not mandatory)

Sl. No	Test Clause	Test Equipment
1	Mechanical Properties: Tensile yield Strength, Elongation at yield, Tensile Strength at break, Elongation at break, As per 6.3.2 of IS 10951:2020	Tensile Testing Machine, Grips, Humidity Chamber, Extensometer, Strain Gauges, Force indicator, Equipment for measuring the width and thickness of the test specimens
2	Charpy Impact Strength As per 6.3.2 of IS 10951:2020	Testing Machine, Micrometre
3	Shore D hardness As per 6.3.2 of IS 10951:2020	Type D Shore Durometer
4	Thermal Properties: Melting Temperature, Temperature of Deflection As per 6.3.2 of IS 10951:2020	Apparatus for temperature deflection under with heating equipment, Weights, Temperature- measuring instrument, Deflection-measuring instrument, Micrometres
5	Thermal Properties: Vicat Softening Temperature As per 6.3.2 of IS 10951:2020	Oil heating Bath equipped with means to raise the temperature at uniform rate of $50 \pm 5^\circ$, C/hr. with suitable stirrer. - Rod with loading plate, load and indenting tips - Micrometre dial gauge - Thermometer or temperature measuring equipment
6	Thermal Properties: Flammability As per 6.3.2 of IS 10951:2020	Laboratory fume hood/chamber, Laboratory burner, Support stand, Timing device, Measuring scale, Wire gauze, Conditioning chamber, Micrometer, HB support fixture, Desiccator, Air-circulating oven, Cotton pads
7	Thermal Properties: Ignitability As per 6.3.2 of IS 10951:2020	Test chimney, Test specimen holder, Gas supplies (oxygen and/or nitrogen), Gas control devise, Oxygen analyser, Flame igniter, Timing device,
8	Electrical Properties: Dissipation Factor and Relative Permittivity As per 6.3.2 of IS 10951:2020	Voltage Source, Detector, Schering Bridge or Transformer Bridge or Parallel T Networks or Q Meter or Micrometre Electrode System
9	Electrical Properties: Dielectric Strength As per 6.3.2 of IS 10951:2020	High Voltage Transformer, Voltage Control Gear, Protective Gear, Peak Voltmeter, Stopwatch
10	Other Properties: Water Absorption As per 6.3.2 of IS 10951:2020	Balance, Oven, Container, Desiccator, means for measuring dimensions
11	Other Properties: Density As per 6.3.2 of IS 10951:2020	<u>Immersion Method as per IS 13360(Part-3/sec 10)</u> Analytical balance, Immersion vessel, Stationary support, Thermometer, graduated at 0.1°C intervals, covering the range 0°C to 30°C , Wire (if required), Sinkers, Pycnometer,

		Liquid bath, immersion liquid OR <u>Liquid pycnometer Method as per IS 13360 (Part-3/sec 10)</u> Analytical balance, Stationary support, Pycnometer, Liquid bath, immersion liquid, Desiccator OR <u>Method as per IS 13360(Part-3/sec 11)</u> Density gradient column, Liquid bath, Calibrated glass floats, Balance, accurate to ± 0.1 mg, Siphon or pipette assembly, Immersion liquids
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ANNEX C

SCHEME OF INSPECTION AND TESTING

1. QUALITY ASSURANCE PLAN

1.1 It is expected that manufacturers (licensees/applicants) will implement a Quality Assurance Plan i.e. a plan of regular testing and in-process controls, designed to ensure that the product bearing the Standard Mark conforms to all requirements of the Indian Standard.

1.2 The manufacturers shall define a Quality Assurance Plan defining the control unit (i.e. lot/batch etc.) and the levels of control (i.e. the frequency and number of samples for conducting the different tests as per the Indian Standard) and submit the same to BIS Branch Office for information. The manufacturer shall comply with the same and maintain test records in accordance with para 2.4.

1.3 RECOMMENDED LEVELS OF CONTROL/CONTROL UNIT:

1.3.1 For the guidance of manufacturers, the recommended definition of control unit is : For the purpose of this scheme entire quantity of material of same designation extruded continuously in a line over a period of one day or part thereof shall constitute a control unit.

1.3.2 For the guidance of manufacturers in preparing the Quality Assurance Plan, recommended levels of control are given in **Table 1**.

1.3.3 The manufacturer shall ensure inspection and testing as per the Quality Assurance Plan submitted by them on the whole production of the factory which is covered by this plan. Alternatively, the manufacturer has the option of adherence to the quality plan as per levels of control recommended in column 3 of Table 1.

1.4 However, all manufacturers shall ensure compliance of their products to all the requirements of the Indian Standard.

2. ENSURING COMPLIANCE THROUGH TESTING- It is expected that manufacturers (licensees/applicants) will establish a suitably equipped and staffed in-house laboratory (In-house testing facility) for testing at least those parameters of the Indian Standard which require routine testing for ensuring quality of the product. This includes in-process controls as may be defined and put in place by the manufacturer and testing parameters/requirements which can only be performed in the factory.

2.1 For the guidance of manufacturers, Table 1 giving the recommended levels of control is given below. Column 2 of Table 1 indicates routine tests where test equipment is required in-house as "R" or other tests which can be subcontracted as "S". Subcontracting is permitted to BIS recognized/empanelled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025.

2.2 For MSME manufacturers, the requirement of maintaining a laboratory/in-house testing facility for routine tests (indicated as "R" in Column 2 of Table 1) is also optional.

2.2.1 MSME manufacturers may utilize common cluster based facilities as per guidelines for the utilization of cluster based test facilities by MSMEs or the provisions of Sharing of testing facilities or get testing done from BIS recognized/empaneled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025.

2.3 Large Scale manufacturers shall maintain an in-house laboratory equipped at least with test facilities for routine tests (indicated as “R” in Column 2 of Table 1), where different tests given in the specification shall be carried out in accordance with the method given in the specification. They shall also implement a calibration plan for the in-house test equipment.

2.3.1 Alternatively, in lieu of an in-house laboratory, large scale manufacturers can also utilize the provisions of Sharing of testing facilities as per the Guidelines for Grant of Licence available on BIS website www.bis.gov.in. (Under Conformity Assessment>Product Certification Process). Even for subcontracted tests, provisions for sharing of testing facilities can be utilized.

2.4 TEST RECORDS- The manufacturers maintaining an in-house laboratory or utilizing common cluster based facilities or shared test facilities shall maintain test records for the tests carried out to establish conformity. For the tests being subcontracted to BIS recognized/empanelled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025, test reports issued by the laboratories shall be available for inspection by BIS.

3. PACKING AND MARKING - The Standard Mark as given in the Schedule of the licence shall be incorporated legibly and indelibly on each bag and/or unit package of Polypropylene (PP) Materials provided always that the material so marked conforms to each requirement of the specification. Marking to be done on smallest bag and/or unit package that is being sent to customer.

3.1 Packing and Marking shall be done as per the Indian Standard.

3.2 Additional Marking requirements: The material shall also be marked with the following additional requirement on each packaging:

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Note: In case a manufacturer with same brand name is holding BIS licences at multiple premises (units) under same ownership and opts for marking multiple licence numbers on the unified label, the same may be considered, provided the identification and traceability of the product, is established as envisaged.

4. TEST CERTIFICATE - For each consignment of BIS Certified material conforming to IS 10951:2020 there shall be a test certificate which shall contain the Lot/Batch/Control Unit number and the corresponding test results (an indicative format is given in Annexure-I enclosed).

5. STORAGE, AND HYGIENIC CONDITIONS: Plastics materials intended for food contact use shall be stored separately from other materials in closed, properly identified containers. Adequate standards of hygiene shall be maintained at all times and plant operators and store men shall be trained in proper hygienic practices.

6. REJECTION - All the production which conforms to the Indian Standard and covered under the scope of this licence shall be marked with the Standard Mark. Disposal of non-conforming product shall be done in such a way so as to ensure that there is no violation of provisions of BIS Act, 2016.

TABLE 1
(ONLY FOR GUIDANCE PURPOSE)

SI No.	(1)				(2)	(3)		
	Test Details				Test equipment requirement R: required (or) S: Subcontracting permitted	Levels of Control		
	Cl.	Requirement	Test method			No. of Sample	Frequency	Remarks
			Clause	Reference				
i)	6.1	Description	6.1	IS 10951	R	One	Each Control unit	For polypropylene materials and polypropylene compounds
ii)	6.2.1.1	Melt Mass-Flow Rate	--	IS 13360(Part 4/Sec 1)/ ASTM D 1238	R	One	Each Control unit	For polypropylene materials and polypropylene compounds
iii)	6.2.1.2	Flexural modulus	--	IS 13360(Part 5/Sec 7)/ ASTM D 790	R	One	-do-	For polypropylene compounds
iv)	6.2.1.3	Izod Impact Strength	--	IS 13360(Part 5/Sec 4)/ ASTM D 256	R	One	-do-	For polypropylene compounds
	6.3.2	Additional requirement for Compounded Material						
		Mechanical Properties						

v)	6.3.2, Table 8, Sl. No. (i)(a)	Tensile yield strength		IS 13360 (Part 5/Sec 1) and IS 13360 (Part 5/Sec 2)	S*	One	Once in a month	
vi)	6.3.2, Table 8, Sl. No. (i)(b)	Elongation at yield		IS 13360 (Part 5/Sec 1) and IS 13360 (Part 5/Sec 2)	S*	One	Once in a month	
vii)	6.3.2, Table 8, Sl. No. (i)(c)	Tensile strength at break		IS 13360 (Part 5/Sec 1) and IS 13360 (Part 5/Sec 2)	S*	One	Once in a month	
viii)	6.3.2, Table 8, Sl. No. (i)(d)	Elongation at break		IS 13360 (Part 5/Sec 1) and IS 13360 (Part 5/Sec 2)	S*	One	Once in a month	
ix)	6.3.2, Table 8, Sl. No. (i)(e)	Charpy impact strength		IS 13360 (Part 5/Sec 5)	S*	One	Once in a month	
x)	6.3.2, Table 8, Sl. No. (i)(f)	Hardness – a) Rockwell, R b) Shore, D		a) IS 13360 (Part 5/Sec 13) b) IS 13360 (Part 5/Sec 11)	S*	One	Once in a month	

		Thermal Properties, °C						
xi)	6.3.2, Table 8, Sl. No. (ii)(a)	Melting temperature		IS 13360 (Part 6/Sec 10)	S*	One	Once in a month	
xii)	6.3.2, Table 8, Sl. No. (ii)(b)	Temperature of deflection under load, °C		IS 13360 (Part 6/Sec 3)	S*	One	Once in a month	
xiii)	6.3.2, Table 8, Sl. No. (ii)(c)	Vicat softening temperature, °C		IS 13360 (Part 6/Sec 1)	S*	One	Once in a month	
xiv)	6.3.2, Table 8, Sl. No. (ii)(d)	Flammability		IS/ IEC 60695-11-10	S*	One	Once in a month	
xv)	6.3.2, Table 8, Sl. No. (ii)(e)	Ignitability (Oxygen index)		IS 13360 (Part 6/Sec 19)	S*	One	Once in a month	
		Electrical Properties						
xvi)	6.3.2, Table 8, Sl.	Relative permittivity		IS 4486	S*	One	Once in a month	

	No. (iii)(a)							
xvii)	6.3.2, Table 8, Sl. No. (iii)(b)	Dissipation factor		IS 13360 (Part 7/Sec 1)	S*	One	Once in a month	
xviii)	6.3.2, Table 8, Sl. No. (iii)(c)	Volume resistivity		IS 2071 (Part 1)	S*	One	Once in a month	
xix)	6.3.2, Table 8, Sl. No. (iii)(d)	Surface resistivity		IS 2071 (Part 1)	S*	One	Once in a month	
xx)	6.3.2, Table 8, Sl. No. (iii)(e)	Dielectric strength		IS 2584	S*	One	Once in a month	
		Other properties						
xxi)	6.3.2, Table 8, Sl. No. (iv)(a)	Water absorption		IS 13360 (Part 8/Sec 1)	S*	One	Once in a month	
xxii)	6.3.2, Table	Density		IS 13360 (Part 3/Sec 10)/ IS 13360 (Part 3/Sec 11)	S*	One	Once in a month	

	8, Sl. No. (iv)(b)							
	6.4	Special Requirements for Food Stuffs, Pharmaceuticals and Drinking Water						
xxiii)	6.4.2, Annex- D, D-1	Pigments and Colourants		IS 9833 (IS 1699/ IS 3025 (Part 56)/ 15303/ IS 14816/ 13428)	S*	One	When there is any change in manufacturing process or chemical composition	For coloured material used for food packaging application
xxiv)	6.4.2, Annex- D, D-1	Overall Migration		IS 9845	S*	One	When there is any change in manufacturing process or chemical composition	For coloured material used for food packaging application

Note-3: In case of additional/special requirements, testing needs to be done only for those additional/special requirements which are to be covered in the scope of licence. Accordingly, where S is appearing in column (2), testing is to done (through subcontracting) only for those additional/special requirements which are to be covered in the scope of licence.

ANNEXURE-I
(Indicative format of TEST CERTIFICATE)
(PARA 6 OF SCHEME OF INSPECTION AND TESTING)
ABC LIMITED
(REGISTERED OFFICE ADDRESS AND WORKS ADDRESS)
CM/L-
TEST CERTIFICATE FOR SPECIFICATION FOR POLYPROPYLENE (PP) MATERIALS FOR MOULDING AND EXTRUSION

TEST CERTIFICATE NO. DATE:.....

TO M/s (NAME AND ADDRESS OF CONSIGNEE)

We certify that the material described below fully conforms to the requirement of IS 10951:2020
Properties of the product as tested in accordance with Scheme of Inspection and Testing contained in the BIS Certification Marks
Licence CM/L No are as indicated below against each order
(PLEASE REFER TO IS 10951:2020 FOR DETAILS OF SPECIFICATION REQUIREMENTS)

TEST RESULTS

Name of product		
Batch Number/ Lot No. and Month/ Year of Manufacture		
Properties	Unit	Values
Melt Mass-Flow Rate		
Flexural modulus		
Izod Impact Strength		
Additional requirements (<i>if applicable</i>)		
Pigments and colourants (<i>optional</i>)		
Overall Migration (<i>optional</i>)		

REMARKS

WAGON NO./TRUCK NO.

(for BIS certification details www.bis.gov.in)

for ABC Company