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उत्पाद मैनुअल
प्लास्टिक — एथिलीन-थिनाइल एसीटेट (ईवीए) मोस्टडिंग और एक्सट्रूज़न सामग्री भाग 1 पदनाम प्रणाली और थिथिथि
IS 17927 (Part 1): 2022 के अनुसार

PRODUCT MANUAL FOR
PLASTICS- ETHYLENE-VINYL ACETATE (Eva) MOULDING AND EXTRUSION MATERIALS PART 1 DESIGNATION SYSTEM AND SPECIFICATION
as per IS 17927 (Part 1): 2022

भारतीय मानक ब्यूरो (अनुरूपता मूल्यांकन) विनियम 2018 की स्कीम-I के तहत यह उत्पाद मैनुअल प्रमाणीकरण की संचालन रीति में सुसंगता और पारदर्शिता सुनिश्चित करने के लिए सभी क्षेत्रीय/शाखा कार्यालयों एवं लाइसेन्स धारियों द्वारा संदर्भ सामग्री के रूप मे उपयोग किया जाएगा। बीआईएस लाइसेन्स/प्रमाण पत्र प्राप्त करने के इच्छुक भावी आवेदकों द्वारा भी इस दस्तावेज़ का उपयोग किया जा सकता है।

This Product Manual shall be used as reference material by all Regional/Branch Offices &licensees to ensure coherence of practice and transparency incorporation 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 licence/certificate.

1.	**उत्पाद** **Product**	:	IS 17927 (Part 1) : 2022
	शीर्षक **Title**	:	PLASTICS- ETHYLENE-VINYL ACETATE (Eva) MOULDING AND EXTRUSION MATERIALS PART 1 DESIGNATION SYSTEM AND SPECIFICATION
	संशोधन संख्या **No. of amendments**	:	0
2.	**नमुनाकरण दिशानिर्देश** **Sampling Guidelines**		
a)	**कच्चामाल** **Raw material**	:	No specific requirements
b)	**समूहिकरण दिशानिर्देश** **Grouping Guidelines**		Please refer ANNEX–A
c)	**नमूने का आकार** **Sample Size**		5 kg

d)	**निगरानी के दौरान सैंपलिंग के लिए दिशा-निर्देश** **Guidelines for sampling during Surveillance**		Out of the Market and Factory samples tested in an year, One MS will be tested for all requirements of IS 17927 (Part 1): 2022 and remaining samples will be tested for all requirements excluding Pigments & Colourants (Cl. 6.3.2.1), Overall migration (Cl. 6.3.2.2).
3.	**परीक्षण उपकरणो की सूची** **List of Test Equipment**		Please refer ANNEX–B
4.	**निरीक्षण व परीक्षण स्कीम** **Scheme of Inspection and Testing**		Please refer ANNEX–C
5.	**एक दिन में संभावित परीक्षण** **Possible tests in a day**		6.1 Vinyl Acetate Content 6.2 Melt Mass Flow Rate(if product has already completed 16 hours at 23 °C ± 2 °C conditioning period)
6.	**लाइसेन्स का कार्यक्षेत्र/** Scope of the Licence:		
	"Licence is granted to use Standard Mark as per IS 17927 (Part 1) : 2022 **with the following scope:**		
	Name of the product		PLASTICS-ETHYLENE-VINYL ACETATE (Eva) MOULDING AND EXTRUSION MATERIALS
	Varieties		Designation codes of material (e.g. IS 17927 (Part 1)-EVA18-GF30-M-D200-,,)
	Additional Requirements/Properties		Suitable for Molding or Extrusion Articles in Contact with Food Stuffs, Pharmaceutical and Drinking Water (Cl.6.3)

ANNEX A

GROUPING GUIDELINES

1) As per Cl.4 of IS 17927 (Part 1): 2022, Designation code for EVA material shall be done based on six data blocks.

2) 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.

3) For considering grant of licence and/or change in scope of licence, the following grouping shall be considered:

Data Block1	For Indian Standard	
Data Block 2	For identification of the material And composition of the vinyl acetate monomer	Code used for the identification of ethylene-vinyl acetate is EVA. In this data block, vinyl acetate content (percentage by mass) is also indicated. One sample each of the **highest, lowest and intermediate** VA content as designated in Table 1 intended to be covered in the scope of license shall be tested
Data Block 3	For fillers or reinforcing materials and their nominal content	Manufacturer shall declare the type of filler or reinforcing material and their physical forms as per table 2 and their mass content being used for manufacturing and intended to be covered in the license. Samples of material with each type of filler or reinforcing material in any one physical form of the highest and lowest mass content range intended to be covered in the scope of licence shall be tested.
Data Block 4	For intended application or method of processing, important properties, additives and supplementary information	Manufacturer shall declare Information about intended application and/or method of processing and information about important properties, Additives and colour intended to be covered in the license as per 4.2.4.1. (This is only to be provided only as information to BIS and has no bearing on the testing) however Polymer Used for Molding or Extrusion Articles in Contact with Food Stuffs, Pharmaceutical and Drinking Water shall be tested for additional requirements given in 6.3.
Data Block 5	For designatory properties	Manufacturer shall declare the MFR Ranges as per table 5 (and relevant test conditions as per table 4) being

		manufactured and intended to be covered in the licence. One sample each of the highest, lowest and intermediate MFI range, may be tested (under any of the test conditions) to cover the ranges
Data Block 6	For additional information	-The indication of additional requirements in this optional data block, in a way transforms a designation into a material's specification for a specific application. This can be accomplished by referring to a relevant Indian Standard. (This is only to be provided only as information to BIS and has no bearing on the testing)

a) Polymer Used for Molding or Extrusion Articles in Contact with Food Stuffs, Pharmaceutical and Drinking Water shall be tested for additional requirements given in Cl. 6.3

b) However, for the purpose of addition of new grades in the scope of licence, Licensees who already have Special Requirements of Polymer Used for Molding or Extrusion Articles in Contact with Food Stuffs, Pharmaceutical and Drinking Water covered in the scope of their licence need not submit evidence of conformity to these requirements again subject to confirmation that there is no change in the chemical composition and manufacturing process.

c) Scope of the licence shall be restricted based on the manufacturing and testing facilities available.

d) During the operation of licence, samples of each variety covered in the scope shall be drawn in rotation.

ANNEX B

List of Test Equipment

Major test equipment required to test as per the Indian Standard:

Sr. No	Test Clause	Test Equipment
1	**Melt Mass Flow Rate, Cl. 6.2**	Extrusion plastometer equipped with Cylinder , Heating and thermostatic devices, Weight Support, Load, Die Plug, Vaccum Pump, Cutting tool, Timer, Weight support, (as per Fig. 1)Packing rod, Go/no-go gauge, Temperature-calibration device, Die Plug, Piston/weight support, Preforming device, Air conditioner or conditioning chamber capable of marinating 23 °C ± 2 °C A) Equipment for procedure A Cutting tool, Timer, Balance, with a maximum permissible error of ±1 mg or better B) Equipment for procedure B (see Clause 9 ISO 1131-1): Piston displacement transducer/timer
2	**Vinyl Acetate Content, Cl. 6.1**	**A) Method using infrared spectrometer** Fourier infrared spectrometer, wave number range 4 000 cm−1 to 400 cm−1, capable of resolution to 1 cm−1,Specimen holder, Hot-pressing machine, supplying at least 10 MPa pressure, with hotplates which can achieve a temperature of 150 °C,EVAC reference specimens, **B) Acidimetric method** Potassium hydroxide, solution, c(KOH) = 0,1 mol/l, Hydrchloric acid, standard solution, c(HCl) = 0,1 mol/l, Phenolphthalein, indicator solution, made by dissolving 0,1 g of phenolphthalein in 100 ml of ethanol, Nitrogen, Pyrolysis oven, adjustable to 350 °C, Combustion boat, made of vitrified porcelain, 110 mm long, 12 mm wide and 8 mm high, Drechsel wash bottle, 250 ml capacity, with a sintered-glass plate, Schellbach automatic-zero burette, 50 ml capacity, Conical flask, 250 ml capacity, Analytical balance, with an accuracy of 0.1 mg C) **Annex-B of IS 13601** Combustion furnaces capable of being maintained at a temperature of 400 degree Celsius, Combustion tube, Prefabricated ground glass joint to fit the pyrolysis tube (gas disperser), Quartz boat, Tall form bubbler, 500 ml capacity, Pipette, 25-ml, Burette, 50-ml, with stand and holder, Regulated nitrogen supply, 1 Standard hydrochloric acid (HCL) solution, 0.1 N, Sodium hydroxide (NaOH) solution, 0.1 N (approx), Phenolphthalein indicator, Distilled water.
3	**Overall migration, Cl. 6.3.2.2**	Simulating solvents as per Cl. 4 of IS 9845:1998 Electric oven/water bath/, pressure cooker electric hot plate with temperature control regulator, analytical balance sensitive upto 0.1

		mg, heat resistant glass beakers of 1000 ml capacity, stainless steel evaporating dish of 100 ml capacity, stainless steel tongs, glass rod, plate glass, cylindrical glass jar, glass/stainless steel pins as per IS 9845:1998

Note-1:The above list is indicative only and may not be treated as exhaustive.

ANNEX C

Scheme of Inspection and Testing

1. LABORATORY-A laboratory shall be maintained which shall be suitably equipped(as per the requirement given in column 2 of Table 1) and staffed, where different tests given in the specification shall be carried out in accordance with the methods given in the specification.

1.1 The manufacturer shall prepare and implement a calibration plan for the test equipment's.

2. TEST RECORDS–The manufacturer shall maintain test records for the tests carried out to establish conformity.

3. PACKING, LABELLING AND MARKING–The Standard Mark as given in Schedule of the license and Licence Number (i.e. CM/L) shall be incorporated, and the marking and packing shall be done as per the provisions of the Indian Standard, provided always that theproduct thus marked and packed conforms to all the requirement of the specification. In addition, details of BIS website shall be marked as follows: ―For details of BIS certification please visit www.bis.gov.in

4. CONTROL UNIT – For the purpose of this scheme, the total quantity of product of the same designation code (and the same additional properties) produced from the same type of raw materials in a day shall constitute one control unit.

5. TEST CERTIFICATE - For each consignment of BIS Certified material conforming to IS 17927(Part1): 2022 there shall be a test certificate which shall contain the Lot/Batch/Control Unit number and the corresponding test results (as given in Annexure-I enclosed)

6. LEVELS OF CONTROL - The tests as indicated in column 1 of Table 1 and the levels of control in column 3 of Table 1, shall be carried out on the whole production of the factory which is covered by this plan and appropriate records maintained in accordance with paragraph 2 above. 5.1 All the production which conforms to the Indian Standards and covered by the licence should be marked with Standard Mark.

7. REJECTIONS–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- LEVELS OF CONTROL

(Para 6 of Scheme of Inspection and Testing)

(1)				(2)	(3)		
Test Details				**Test equipment requirement R: Required (or) S: Subcontracting permitted**	**Levels of Control**		
Cl.	**Requirement**	**TestMethod**			**No. of Sample**	**Frequency**	**Remarks**
		Clause	**Reference**				
6.1	Vinyl Acetate Content	6.1	Annex B of IS 13601 or ISO 8985	**R**	One	Each Control Unit	
6.2	Melt Mass Flow Rate	6.2	IS 17927 (Part 2)	**R**	One	Each Control Unit	
6.3.2.1	Pigments and Colourants	6.3.2.1	IS 9833	**S***	One	Whenever there is any change in manufacturing process or chemical composition or change in supplier	For coloured material used for food-packaging application
6.3.2.2	Overall Migration	6.3.2.2	6.3.2.2 of IS 17927 (Part1) and IS 9845	**S***	One	-do-	

Note-1: Whether test equipment is required or sub-contracting is permitted in column 2 shall be decided by the Bureau and shall be mandatory. Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empanelled by the Bureau.

Note–2: Levels of control given in column 3 are only recommendatory in nature. The manufacturer may define the control unit/batch/lot and submit his own levels of control in column3 with proper justification for approval by BO Head.

*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.

ANNEXURE-I
TEST CERTIFICATE
(PARA 5 OF SCHEME OF INSPECTION AND TESTING)
ABC LIMITED
(REGISTERED OFFICE ADDRESS AND WORKS ADDRESS)
CM/L-_____

TEST CERTIFICATE FOR PLASTICS ETHYLENE-VINYL ACETATE (Eva) MOULDING AND EXTRUSION MATERIALS

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 17927(Part1): 2022.

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 17927(Part1): 2022 FOR DETAILS OF SPECIFICATION REQUIREMENTS

TEST RESULTS

Name and Type of Material	Designation Code	Net Mass	Batch No./Lot no. and Month/Year of Manufacture	VA Content	MFR	Additional requirement for Coloured/Compounded material (if applicable)	Requirements for Polymer used for Molding or Extrusion Articles in contact with food stuffs, Pharmaceutical and Drinking Water (if applicable)

REMARKS

WAGON NO./ TRUCK NO.

For ABC Company

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