BUREAU OF INDIAN STANDARDS
DRAFT FOR COMMENTS ONLY

IS 17658 : 2021 पोलीविनाईल क्लोराइड (पीवीसी) होमोपॉलिमर — विशिष्टि
में
मसौदा **संशोधन संख्या. 1**

Draft **AMENDMENT NO. 1**
TO
IS 17658 : 2021 POLYVINYL CHLORIDE (PVC) HOMOPOLYMERS — SPECIFICATION

(*Page* 1, *Clause* 3.3) — Substitute the following for the existing:

3.3 PVC-SR and PVC-PR shall comply with the requirements as given in Table (1A & 1B) and Table (2 A & 2B), respectively. The alternate test methods are also given in Table 3. In case of dispute the corresponding Indian Standard as given in Table (1A & 1B) and Table (2A & 2B) shall be the referee test method.

NOTE — PVC-SR and PVC-PR manufactured in different commercial grades to meet the needs of diverse applications and come in combination of different parameters. Table (1A and 1B) (PVC-SR) and Table (2A and 2B) (PVC-PR) provides standard grades of PVC resin that encompass all commercial grades being supplied in terms of parameters and uses.

(*Page* 2, *Clause* 3.3, Table 1 and Table 2) — Substitute the following for the existing:

Table 1A Requirements of PVC Suspension Resin (PVC-SR)
(*Clause* 3.3)

Sl No.	**Characteristic**	**Grades of PVC Suspension Resin (PVC-SR)**							**Method of Test, Refer to**
		Grade 1	**Grade 2**	**Grade 3**	**Grade 4**	**Grade 5**	**Grade 6**	**Grade 7**	**IS/ ISO/ ASTM**
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
i)	K-value	<56	≥56 to ≤60	>60 to <64	≥64 to <68	≥68 to <72	≥72 to ≤77	>77	IS 4669/

									ISO 1628-2
ii)	Sieve Analysis, material retained on 250-micron sieve, percent by weight, *Max*	5	5	5	5	5	5	5	IS 4669/ ISO 4610
iii)	Apparent density, g/ml	0.48 to 0.63	0.48 to 0.62	0.48 to 0.61	0.49 to 0.60	0.47 to 0.56	0.44 to 0.55	0.35 to 0.52	IS 4669/ ISO 60
iv)	Plasticizer absorption, percent, *Min*	10	13	13	16	26	28	28	IS 4669/ Method A of ISO 4608
v)	Dry Flow of 140 g, sec, *Max*	25	25	25	25	25	25	25	Method A of ISO 6186
vi)	Conductivity- µS/ cm-g, *Max*	NA	NA	NA	NA	3	3	3	IS 4669
vii)	Volatile Matter, percent by weight, *Max*	0.3	0.3	0.3	0.3	0.3	0.3	0.3	IS 4669/ ISO 1269

Table 1B Requirements for Blending/Extender (PVC-SR) Resin

(*Clause* 3.3)

Sl No.	**Requirement**	**Grade 1**	**Grade 2**	**Grade 3**	**Test Methods**
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
i.	K- Value	< 64	≥ 64 to ≤ 70	> 70	IS 4669/ISO 1628-2
ii.	Sieve Analysis, material retained on 125-micron sieve, percent by weight, Max	1	1	1	IS 4669/ ISO 4610
iii.	Volatile Matter, percent by weight, *Max*	0.3	0.3	0.3	IS 4669/ISO 1269

Table 2A Requirements of PVC Paste Resin (PVC-PR)

(*Clause* 3.3)

Sl No.	Characteristic	Grades of PVC Paste Resin (PVC-PR)								
		Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Method of Test, Refer to IS/ISO/ASTM
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
i)	K-Value	<64	≥64 to <67	≥67 to ≤70	>70 to <75	≥75 to ≤78	>78 to <82	≥82 to ≤85	>85	IS 4669/ ISO 1628-2
ii)	Apparent Viscosity at low shear rates using rotational viscometer at 23°C with 60 phr plasticizer and 2 h ageing, Pa-s, *Max*	5	7.5	10.0	12.5	15.0	17.5	20.0	22.5	ISO 2555
iii)	Volatile Matter, percent by weight, *Max*	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	IS 4669/ ISO 1269

NOTE — For high viscosity grades that cannot form plastisol at 60 phr, the apparent viscosity may be measured at a plasticizer loading mutually agreed upon by the buyer and supplier. The values of apparent viscosity shall also be mutually agreed upon and declared by the manufacturer.

Table 2B Speciality Grades (PVC-PR) Resin

(*Clause* 3.3)

Sl No.	**Requirement**	**Grade 1**	**Grade 2**	**Grade 3**	**Grade 4**	**Grade 5**	**Grade 6**	**Grade 7**	**Grade 8**	**Test Methods**
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
i.	K- Value	< 64	≥ 64 to < 67	≥ 67 to ≤ 70	> 70 to < 75	≥ 75 to ≤ 78	> 78 to < 82	≥ 82 to ≤ 85	> 85	IS 4669/ISO 1628-2
ii.	Apparent Viscosity at low shear rates using rotational viscometer at 23 °C with 60 phr plasticizer and 2 h ageing, Pa-s, Max	Apparent viscosity shall be declared by the manufacturer and shall be mutually agreed upon by the buyer and supplier.								ISO 2555
iii.	Volatile Matter, percent by weight, *Max*	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	IS 4669/ISO 1269

(*Page* 3, *Clause* 3.3, Table 3) — Substitute the following for the existing:

Table 3 Alternate Test Methods
(*Clause* 3.3)

Sl No.	**Characteristic**	**Methods of Test**
(1)	(2)	(3)
i)	Residual Vinyl Chloride monomer (RVCM) content	ASTM D3749 / ISO 6401
ii)	K-value	ASTM D1243
iii)	Sieve analysis	ASTM D1921
iv)	Apparent density	Method A of ASTM D1895
v)	Plasticizer absorption	ASTM D3367
vi)	Dry flow	Method A of ASTM D1895
vii)	Conductivity	ASTM D1125
viii)	Volatile matter	ASTM D3030
ix)	Apparent viscosity	ASTM D1824 / ISO 3219-2*
* Testing and reporting to be done at 5 s^{-1} shear rate.		

(Page 1, Clause 4.2.2) — Substitute the following for the existing:

4.2.2 *Data Block 2* — Code used for type of material are as given below:

Code	*Type of Resin*
P	PVC-PR
S	PVC-SR
B	PVC-SR (mass/bulk)
SX	Blending / Extender (PVC-SR) Resin
PX	Speciality Grades (PVC-PR) Resin

(*Page* 6, *Annex* B) — Insert the following at relevant place:

ISO 6401 : 2022 Plastics — Poly(vinyl chloride) — Determination of residual vinyl chloride monomer using gas-chromatographic method

ISO 3219-2 : 2021 Rheology — Part 2: General principles of rotational and oscillatory rheometry