Product Manual for Bromine Technical According to IS 2142:1992

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

1.	**Product**	:	**IS 2142:1992**
	Title	:	**Bromine Technical**
	No. of Amendments	:	0
2.	**Sampling Guidelines:**		Sampling shall be done as per Clause 5 of IS 2142:1992
a)	**Raw material**	:	No Specific requirement
b)	**Grouping guidelines**	:	Not Applicable
c)	**Sample Size**	:	About 100 ml of the sample or 1 Pack size of 250ml.
3.	**List of Test Equipment**	:	Please refer ANNEX – A
4.	**Scheme of Inspection and Testing**	:	Please refer ANNEX – B
5.	**Possible tests in a day :**		
	I. Description II. Bromine content percent by mass III. Chlorine(as Cl) percent by mass IV. Non-Volatile matter percent by mass V. Iodine (as I) percent by mass		
6.	**Scope of the Licence :**		

"Licence is granted to use Standard Mark as per IS 2142:1992 with the following scope:

Name of the product	**"Bromine Technical"**

ANNEX A

List of Test Equipments

Major test equipment required to test as per the Indian Standard IS 2142:1992

S.No.	**Tests with Clause Reference**	
1	**Bromine Technical as per Annexure A clause 3.2 and Table 1**	**Test Method as mentioned at A-2** **Determination of Bromine** **Reagents** a)Potassium Iodide b) Standard Sodium Thiosulphate solution 0.1N, The solution shall be standardized before use c) Starch Indicator solution d) Mercuric Iodide e) Distilled water
		Equipments/Glassware a) Weighing Balance Range 0 to 200gms, Least count 0.1mg b)Hot plate :Range ambient to 100^{o}C, Least count 1^{o}C c)Volumetric flask- 100ml,250ml d)Pipette single mark- 25ml e) Burette 25ml,50ml capacity, least count 0.1ml f) Conical flask -250ml capacity g) Measuring Cylinder 100ml, least count 1ml h) Glass Beakers 100ml,250ml,500ml capacity
2	**Determination of Chlorine as per Annexure A clause 3.2 and Table 1**	**Test Method as mentioned at A-3** **Determination of Chlorine**
		Reagents a) Zinc filings b) Concentrated Nitric Acid c) Standard Silver Nitrate solution d) Nitrobenzene e) Standard Ammonium Thiocyanate solution- 0.1N f) Ferric Alum Indicator- Saturated solution g) Distilled water
		Equipments/Glassware a) Weighing Balance Range 0 to 200gms, Least count 0.1mg b)Hot plate :Range ambient to 100^{o}C, Least count 1^{o}C c)Volumetric flask- 100ml,250ml d)Pipette single mark- 25ml e) Burette 25ml,50ml capacity, least count 0.1ml f) Conical flask -250ml capacity g) Measuring Cylinder 100ml, Least count- 1ml h) Glass Beakers 100ml,250ml,500ml capacity

		i) Water bath Range: 30°C to 100°C, Least count 1°C J) Stream of Air facility
3	**Determination of Non-Volatile Matter as per Annexure A clause 3.2 and Table 1**	**Test Method as mentioned at A-4** **Determination of Non- Volatile matter**
		Reagents: Nil **Equipments/Glassware** a) Weighing Balance Range 0 to 200gms, Least count 0.1mg b)Hot plate :Range ambient to 100oC, Least count 1oC c)Silica Dish, Capacity 25ml d) Fume hood e) Pipette range 0 to 10ml least count 0.1ml f) Hot Air oven Ambient to 250°C, Least Count 1°C g) Dessicator h) Water bath Range: 30°C to 100°C, Least count 1°C
4	**Test for Iodine as per Annexure A clause 3.2 and Table 1**	**Test Method as mentioned at A-5** **Test for Iodine**
		Reagents: Zinc Dust Ferric Chloride Solution 10 Percent m/v Chloroform Standard Potassium Iodide solution
		Equipments/Glassware a) Weighing Balance Range 0 to 200gms, Least count 0.1mg b)Hot plate :Range ambient to 100°C, Least count 1°C c)Volumetric flask: 100ml d) Spatula e) Measuring Cylinder 100ml least count 1ml f) Filter flask with vacuum pump g) Nessler Cylinder, 50ml Capacity h) Pipette range 0 to 10ml, least count 0.1ml
5	**Test for Sulphate as per Annexure A, clause 3.2 ,Table 1**	**Test Method as mentioned at A-6** **Test for Sulphates**
		Reagents: a) Dilute Ammonium Hydroxide solution 10 Percent (v/v) b) Dilute Hydrochloric Acid -1N c)Barium Chloride solution 10 percent (m/v) d)Potassium Sulphate AR Grade (Standard Sulphate Solution)
		Equipments/Glassware

		a) Weighing Balance Range 0 to 200gms, Least count 0.1mg b)Hot plate :Range ambient to 100^{o}C, Least count 1^{o}C c)Volumetric flask: 100ml,1000ml d) Evaporating dish Porcelain , capacity 100mlSpatula e) Measuring Cylinder 100ml least count 1ml f) Nessler Cylinder, 50ml Capacity g) Pipette range 0 to 10ml, least count 0.1ml

The above list is indicative only and may not be treated as exhaustive.

ANNEX B

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 a calibration plan for the test equipments.

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

3. PACKING AND MARKING – The Standard Mark, as given in the Schedule of the licence, shall be marked on each bottle/container of Bromine, Technical, provided always that the products marked conforms to every requirements of the specification.

3.1 Packing and marking on the containers shall be done as per the provision of IS 2142:1992. In addition, the following details shall be marked on each container:-

a) BIS Licence No. CM/L--------.
b) BIS website details i.e. –"For details of BIS certification please visit www.bis.gov.in

4. CONTROL UNIT – For the purpose of this Scheme, material manufactured continuously in a day shall constitute a control unit.

4.1.1 A composite sample, prepared by taking equal quantity of material from each shift, shall be tested for the requirements given in Table 1 and the control unit shall be deemed satisfactory if the composite sample compline with all the requirements prescribed in Table 1. If the composite sample fail to satisfy any of the requirements given in Table 1, the material represented by the sample shall be considered unfit for the purpose of marking.

5. LEVELS OF CONTROL - The tests as indicated in column 2 of Table 1 and the levels of control in column 7 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.

6. 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.

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BROMINE TECHNICAL

TABLE 1 LEVELS OF CONTROL

(Para 4.1.1 of the Scheme of Inspection and Testing)

Test Details		Levels of Control					
S.No.	**Requirements**	**Test Methods**	**Test equipment requirement R-Required or S- Sub Contracting Permitted**	**No of Samples**	**Control Unit**	**Frequency**	**Remarks**
1	Description	Clause 3.1 of IS 2142	R	One composite sample	One control unit	Every control unit	NIL
2	Bromine Content	Clause 3.2 A-2 of IS 2142	R	-do-	-do-	- do -	-----
3	Chlorine (as Cl)	Clause 3.2 A-3 of IS2142	R	-do-	-do-	- do -	-----
4	Non- Volatile matter	Clause 3.2 A-4 of IS 2142	R	-do-	-do-	- do -	------
5	Iodine (as I)	Clause 3.2 A-5 of IS 2142	R	-do-	-do-	- do -	------
6	Sulphates (as SO_4)	Clause 3.2 A-6 of IS 2142	R	-do-	-do-	- do -	------

Note-1: 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 column 3 with proper justification for approval by BO Head.