PRODUCT MANUAL FOR LIGHTERS - SAFETY SPECIFICATION ACCORDING to IS/ISO 9994:2018

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/ISO 9994:2018
	Title	:	LIGHTERS - SAFETY
	No. of Amendments	:	Nil
2.	**Sampling Guidelines:**		
a)	**Raw material**	:	-
b)	**Grouping guidelines**	:	Please refer ANNEX – A
c)	**Sample Size**	:	10 Lighters
3.	**List of Test Equipment**	:	Please refer ANNEX – B
4.	**Scheme of Inspection and Testing**	:	Please refer ANNEX – C
5.	**Possible Test in a day**		Flame generation (Cl. 4.1), Internal Pressure test (Cl. 5.6)
6.	**Scope of the Licence :**		
	Licence is granted to use Standard Mark as per IS/ISO 9994: 2018 with the following scope:		
	Name of the product		Lighters
	Type		Fluid lighter / Gas lighters, Post mixing burner / Premixing burner, Refillable / Disposable , Adjustable / non-adjustable / automatically adjusting, Self-extinguishing / non -self-extinguishing, Dual flame type , Multiple flame type

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ANNEX A

Grouping Guidelines

1. As per IS /ISO 9994:2018 , Lighters are classified into different types as given below:

(a) Fluid lighter /Gas lighter
(b) Post mixing burner lighter /Premixing burner lighter
(c) Adjustable lighter /non-adjustable lighter /automatically adjusting pipe lighter
(d) Self-extinguishing lighter / non -self-extinguishing lighter
(e) Refillable lighter /Non-refillable (Disposable) lighter
(f) Dual flame type lighter
(g) Multiple flame type lighter

2. For considering GoL/CSoL, each type of Lighter of any reservoir capacity shall be tested for all the requirements to cover lighters of all reservoir capacities of that particular type.

3. The Firm shall declare the varieties of Lighters intended to be covered in the Licence. The Scope of Licence may be restricted based on the Manufacturing and testing capabilities of the Manufacturer.

4. 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 Equipments

Indicative list of major test equipment required to test as per the Indian Standard (For guidance only)

Sl.No	Tests used in with clause reference	Test Equipments
1.	Flame Generation (Clause 4.1)	(a) Rotary Actuator/ Push-button Actuator
2.	Flame heights (Clause 4.2)	(a) Vertically Supported non-flammable Board (b) Draught Free Chamber (c) Digital Thermometer (d) Stop watch (e) Measuring Scale OR (f) Flame Height measurement apparatus
3.	Flame extinction (Clause 4.5)	
4.	Resistance to spitting or sputtering and flaring (Clause 4.4)	(a) Digital Thermometer (b) Stop Watch (c) Measuring Scale
5.	Volumetric Displacement (Clause 4.6)	(a) Weighing Balance (b) Drilling machine and drill bit (c) Syringe (d) Digital Thermometer (e) Stop Watch
6.	Compatibility with fuel (Clause 5.2)	(a) Container (b) Enclosures (c) Digital Thermometer (d) Weighing Balance (e) Hot Air Oven (f)Stop Watch
7.	Resistance to Fuel Loss (Clause 5.3)	(a) Stop Watch (b) Weighing Balance
8.	Resistance to Dropping (Clause 5.4)	(a) Concrete Surface (b) Freezer (c) Hot Air Oven (d) Weighing Balance (e) Height Gauge
9.	Resistance to Elevated Temperature (Clause 5.5)	(a) Hot Air Oven (b) Weighing Balance (c) Enclosures (d) Digital Thermometer
10.	Resistance to internal pressure	(a) Pressure generating device

	(Clause 5.6)	(b) Pressure Gauge (c) Pressure regulating device
11.	Burning Behavior (Clause 5.7)	(a) Stop Watch (b) Measuring Scale (c) Protector or other arrangement for measurement of 45±5°. (d) Flame Height measurement apparatus
12.	Resistance to Cyclic Burning (Clause 5.8)	(a) Digital Thermometer (b) Stop Watch
13.	Resistance to Continuous burning (Clause 5.9)	(a) Draught Free Chamber (b) Digital Thermometer (c) Stop Watch (d) Measuring Scale
14.	To maintain the ambient condition in Laboratory	(a) Air conditioner

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

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. Batch 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 below**.

1.3 **RECOMMENDED LEVELS OF CONTROL/CONTROL UNIT**:

1.3.1 **Control Unit**: For the guidance of manufacturers, the recommended definition of Control Unit is quantity of all lighters of same type manufactured in one day.

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 sub-contracted 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. LABELLING AND MARKING – As per the requirements given in Clause 7 and Clause 8 of IS/ISO 9994:2018.

The Standard Mark, as given in the Schedule of the licence, shall be marked on each Lighter provided always that the Lighter thus marked conforms to all the requirement of the specification. In addition, the licence no. CM/L-_____ and details of BIS website shall be marked at an appropriate place as follows: "For details of BIS certification please visit www.bis.gov.in"

4. REJECTION - All the production which conforms to the Indian Standard and covered under scope of the licence shall be marked with 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

(1)				(2)	(3)		
TEST DETAILS				**Test equipment requirement R: required (or) S: Sub-contracting permitted**	**LEVELS OF CONTROL**		
CI.	**Requirement**	**Test Methods**			**No. of samples**	**Frequency**	**Remarks**
		Clause	**Reference**				
4	**FUNCTIONAL REQUIREMENTS**						
4.1	Flame generation	4.1	IS/ISO 9994	R	5 lighters	Each control unit	
4.2	Flame heights	6.2	IS/ISO 9994	R	2 lighters	Once in a month	
4.3	Flame- height adjustment	4.3	IS/ISO 9994	R			
4.4	Resistance to Spitting or Sputtering and flaring	6.3	IS/ISO 9994	R			
4.5	Flame extinction	6.4	IS/ISO 9994	R			
4.6	Volumetric Displacement	6.7	IS/ISO 9994	R			
4.7	Mass of Fuel	4.7	IS/ISO 9994	R	One gas lighter	Each consignment of gas lighter shipped with fuel	
5	**STRUCTURAL – INTEGRITY REQUIREMENTS**						
5.1	External Finish	4.1	IS/ISO 9994 UL 1439	R	Firm should exercise adequate control so that whole production should meet the requirements and maintain records		

5.2	Compatibility with fuel	6.5	IS/ISO 9994	S	5 lighters	Once in three months	Testing shall be done in such a way so that every type produced in 3 months is covered
5.3	Resistance to fuel loss	6.6	IS/ISO 9994	R	2 lighters	Once in a month	Testing shall be done in such a way so that every type produced in a month is covered
4.4	Resistance to dropping	5.8	IS/ISO 9994	R			
4.5	Resistance to elevated temperature	5.9	IS/ISO 9994	R			
4.6	Resistance to internal pressure	5.10	IS/ISO 9994	R			
4.7	Burning behaviour	4.7	IS/ISO 9994	R			
4.8	Resistance to cyclic burning	5.11	IS/ISO 9994	R			
4.9	Resistance to continuous burning	5.12	IS/ISO 9994	R			