



उत्पाद मैनुअल

FOR GENERAL PURPOSE CUTTING OIL, SOLUBLE
ACCORDING TO IS 1115: 1986 के अनुसार

PRODUCT MANUAL
FOR GENERAL PURPOSE CUTTING OIL, SOLUBLE
ACCORDING TO IS 1115: 1986

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 1115: 1986
	शीर्षक Title	:	SPECIFICATION FOR GENERAL PURPOSE CUTTING OIL, SOLUBLE
	संशोधनों की संख्या No. of amendments	:	ONE
2.	नमूना दिशानिर्देश Sampling Guidelines		
a)	कच्चा माल Raw material	:	1) Mineral Lubricating oil having a flash point of 150°C, Min 2) Emulsifiers, bactericides, stabilizers and other additives, if necessary
b)	समूहीकरण दिशानिर्देश Grouping Guidelines	:	NA
c)	नमूने का परिमाण Sample Quantity	:	1 Litre + 1 Litre (for Keeping Properties)

d)	परीक्षण अनुरोध में घोषित किए जाने वाले पैरामीटर Parameters to be Declared in Test Request		i) Name of the product ii) Optional requirement for defence purposes 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	:	Please refer to Annex-A
4.	निरीक्षण और परीक्षण की स्कीम Scheme of Inspection and Testing	:	Please refer to Annex-B
5.	एक दिन में संभावित परीक्षण Possible tests in a day		
	1) Ash percent by mass, Max, 2) Water content percent by mass, 3) Frothing Test, 4) Copper Strip Corrosion at 100°C for 3h, 5) Flash Point, 6) viscosity at 40°C, cSt,		
6.	लाइसेंस का दायरा /Scope of the Licence:		
	“Licence is granted to use Standard Mark as per IS 1115: 1986 with the following scope:		
	Name of the product	GENERAL PURPOSE CUTTING OIL,SOLUBLE	
	Optional requirements	With/Without defence requirement	

**BUREAU OF INDIAN STANDARDS
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ANNEX – A

LIST OF TEST EQUIPMENTS

(INDICATIVE LIST, FOR GUIDANCE ONLY)

Sl. No.	Tests Used In With Clause Reference	Test Equipment/Chemical
1	Description-(As per IS: 1115:1986 Clause 2.1.2)	• Visual
2	ASH, PERCENT BY MASS, MAX (As per IS: 1115:1986, Clause 2.2, Table-1, Sl. No. (i))	• Electrical Muffle Furnace (capable to maintain $775 \pm 25^{\circ}\text{C}$) • Platinum/Silica/Porcelain Crucible • Analytical Balance (0.1 mg) L.C • Bunsen Burner • Forceps • Cooling Vessel/Desiccator • Mixer/Mechanical Shaker • Propan-2-ol • Toluene • Filter Paper
3	WATER CONTENT PERCENT BY MASS (As per IS: 1115:1986, Clause 2.2, 4.1 Table 1, Sr. No (ii))	• Dean and Stark Apparatus • Heating Mantle • 2,2,4-Trimethylpentane/Sulfur-free hydrocarbon solvent • Petroleum distillate (Toluene/Xylene) • Micro burette/Micropipette • Distilled Water
4	EMULSION TEST (As per IS: 1115:1986, Clause 2.2, 4.1 Table 1, Sr. No (iii))	• Hypodermic syringe • Magnetic stirrer with Stirring Rod • Neck flask • Synthetic Hard Water (400 ± 10 ppm) • Calcium Carbonate (CaCO_3) • Heating/Cooling bath
5	FROTHING TEST (As per IS: 1115:1986, Clause 2.2, 4.1 & 5.2 Table 1, Sr. No (iv))	• Hypodermic syringe • Flask (150 ml) • Measuring Cylinder with stopper (250 ml) • Magnetic stirrer with Stirring Rod • Synthetic Hard Water (200 ± 10 ppm) • Calcium Carbonate (CaCO_3) • Heating/Cooling bath
6	CAST IRON CORROSION TEST (As per IS: 1115:1986, Clause 2.2, 4.1 & 5.2 Table 1, Sr. No (v))	• Grey Cast Iron Test Plate (10 cmX10 cmX6 mm) • Steel Millings (6 mm X 1.5 to 3 mm) • Humidity Chamber • Pipette (2 ml)

		• Hard Water • Emulsion (400 ppm) • Cotton Wool • Toluene • Acetone • Wash Bottle
7	COPPER STRIP CORROSION AT 100 °C, FOR 3H (As per IS: 1115:1986 Clause 2.2, 4.1, Table 1, Sr. No (vi))	• Copper Strip • Forceps • 2,2,4-Trimethylpentane/Sulfur-free hydrocarbon solvent • Cotton wool • Silicon carbide paper (240 Grit) • Silicon-carbide powder (150 mesh) • Pressure vessel Method or Test Tube Method • Test tubes • Test baths • Glass Thermometer • Beaker (150 ml) • Stopwatch • Test Tube Jar • Corrosion Standard • Polishing Holder
8	THERMAL STABILITY TEST (As per IS: 1115:1986, Clause 2.2, 4.1 & 5.2 Table1, Sr. No (vii))	• Sample Bottles (150 ml) • Air oven ($50 \pm 1^{\circ}\text{C}$) • Refrigerator ($0 \pm 1^{\circ}\text{C}$) • Thermometer IP64C (-2°C to 120°C)
9	Flash Point, °C, (COC), MIN (As per IS: 1115:1986, Clause 2.2, 4.1 Table 1, Sr. No (viii))	• Cleveland open cup Apparatus • Glass Thermometer • Cleaning solvent • An-hydrous Sodium Sulphate • Barometer
10	KINEMATIC VISCOSITY AT 40°C (As per IS: 1115:1986, Clause 2.2, 4.1 Table 1, Sr. No (ix))	• Viscometer • Viscosity standards • Viscometer tube • Glass Thermometer • Temperature Controlling Bath (Viscosity Bath) • Stopwatch • Acetone • 2,4,6-Trimethylpyridine/Sulfur-free hydrocarbon solvent
11	VOLATILE MATTER AT 100°C (As per IS: 1115:1986, Clause 2.2, 4.1 Table 1, Sr. No (x))	• Petri Dish • Analytical Balance (0.01 g) • Air oven (capable to maintain $100 \pm 1^{\circ}\text{C}$)

ANNEX B

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 : GENERAL PURPOSE CUTTING OIL of same grade produced in a batch 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 container (closed metal drums or any other suitable containers of appropriate size and strength) provided always that the material so marked conforms to each requirement of the specification.

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 container (closed metal drums or any other suitable containers of appropriate size and strength):

- a) “For BIS certification details please visit www.bis.gov.in”
- b) *Any other requirement not specified in the Indian Standard*

4. 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)

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or)S: Sub-contracting permitted	Levels of Control		
Cl.	Requirement	Test Methods Clause Reference			No. of Sample	Frequency	Remarks
2.1.1	MATERIAL	2.1.1	IS 1115: 1986	S	One	Each Consignment	
2.1.2	GENERAL REQUIREMENT	2.1.2	IS 1115: 1986	R	Firm to have adequate in-process controls to check compliance of this parameter as given in the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity		
2.2 and 4.1, Table 1 (i)	ASH, PERCENT BY MASS, MAX	...	IS 1448 [P:4]	R	One	Each Control Unit	-
Clause 2.2 and 4.1, Table 1 (ii)	WATER CONTENT PERCENT BY MASS, MAX	...	IS 1448 [P:40]	R	One	Each Control Unit	-
Clause 2.2 and 4.1, Table 1 (iii)	EMULSION TEST	...	IS: 1448 [P: 98]	R	One	Each Control Unit	-
Clause 2.2 and 4.1, Table 1 (iv)	FROTHING TEST	...	IS 1448 [P: 99]	R	One	Each Control Unit	-

Clause 2.2 and 4.1, Table 1 (v)	CAST IRON CORROSION TEST	[Appendix A]	IS 1115: 1986	R	One	Each Control Unit	-
Clause 2.2 and 4.1, Table 1 (vi)	COPPER STRIP CORROSION AT 100 °C, FOR 3H	...	IS 1448 [P: 15]	R	One	Each Control Unit	-
Clause 2.2 and 4.1, Table 1 (vii)	THERMAL STABILITY TEST	...	IS 1448 [P: 100]	R	One	Each Control Unit	-
Clause 2.2 and 4.1, Table 1 (viii)	Flash Point, °C, (COC), MIN	...	IS 1448 [P: 69]	R	One	Each Control Unit	-
Clause 2.2 and 4.1, Table 1 (ix)	VISCOSITY AT 40°C, Cst, MIN	...	IS 1448 [P: 25]	R	One	Each Control Unit	-
Clause 2.2 and 4.1, Table 1 (x)	VOLATILE MATTER AT 100°C FOR 16H, PERCENT BY MASS, MAX	[Appendix B]	IS 1115: 1986	R	One	Each Control Unit	-