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उत्पाद मानुयल
सामान्य प्रयोजन मशीनरी और स्पिंडल तेल-

भाग 1-मशीनरी तेल-विनिर्देश

आईएस 493 (भाग 1): 2019 के अनुसार

PRODUCT MANUAL FOR

GENERAL PURPOSE MACHINERY AND SPINDLE OILS-

PART 1-MACHINERY OILS-SPECIFICATION

ACCORDING TO IS 493 (PART 1): 2019

भारतीय मानक ब्यूरो (अनुरूपता मूल्यांकन (विनियम की स्कीम-I के तहत यह उत्पाद मानुयल प्रमाणीकरणके प्रचलन में रीति और पारदर्शिता के सुसंगत सुनिश्चित करने के लिए सभी क्षेत्रीय/शाखा कार्यालयों एवं लाइसेन्स धारियों द्वारा संदर्भ सामग्री के रूप में 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 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.	उत्पाद Product:	:	IS 493 (Part 1): 2019
	शीर्षक Title	:	General Purpose Machinery and Spindle Oils- Part 1- Machinery Oils- Specification
	संशोधन संख्या No. of Amendments	:	NIL
2.	नमूनाकरण दिशा निर्देश Sampling Guidelines:		
a)	कच्चा माल Raw material	:	The material shall be made from Refined Mineral Oils.
b)	समूहिकरण दिशा निर्देश Grouping guidelines	:	Sample of each grade shall be tested
c)	नमूने का परिमाण Sample Size	:	1 Litre
3.	परीक्षण उपकरणों की सूची	:	Please refer ANNEX – A

	निरीक्षण व परीक्षण स्कीम List of Test Equipment		
4.	एक दिन में संभावित परीक्षण Scheme of Inspection and Testing		Please refer ANNEX – B
5.	लाइसेन्स का कार्यक्षेत्र /Possible tests in a day		All tests
6.	लाइसेंस का दायरा / Scope of the Licence:		
	IS 493 (Part 1): 2019 के अनुसार मानक मुहर का उपयोग करने के लिए लाइसेन्स निम्नलिखित कार्यक्षेत्रके लिए प्रदान किया जाता है “Licence is granted to use Standard Mark as per IS 493 (Part 1): 2019 with the following scope:		
	Name of the product		General Purpose Machinery Oils
	Grade		Grade I/II/III/IV/V/VI/VII/VIII

BUREAU OF INDIAN STANDARDS

Manak Bhawan, 9, Bahadur Shah Zafar Marg, New Delhi–
110002

ANNEX A
TO THE PRODUCT MANUAL FOR
GENERAL PURPOSE MACHINERY OILS- SPECIFICATION
AS PER IS 493 (PART 1): 2019

List of Test Equipment

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

<u>Sr. No</u>	<u>Test Clause</u>	<u>Test Equipment</u>
1	GENERAL Clause 4.1 of IS 493 (Part 1): 2019	Beaker
2	KINEMATIC VISCOSITY Clause 4.2, Table-1, Sl. No. (i)	Viscosity bath @40°C Thermometer IP-92C Viscosimeter Tube (Size=350 , S.L. No.: 727) Stop Watch 100ml Glass Beaker
3	POUR POINT Cl. 4.2, Table-1, Sl. No. (ii)	54mm marked Test Jar Thermometer: IP-14C Hot Plate Water Bath Jar General Thermometer
4	ASTM COLOUR Cl. 4.2, Table-1, Sl. No. (iii)	4 nos. Glass Container
5	FLASH POINT Cl. 4.2, Table-1, Sl. No. (iv)	Thermometer: IP-28C Match Box
6	ASH Cl. 4.2, Table-1, Sl. No. (v)	Muffle Furnace Silica Crucible Weighing Balance (LC-0.1mg) Bunsen Burner Forceps Desiccator
7	TOTAL ACIDITY Cl. 4.2, Table-1, Sl. No. (vi)	Manual Titration Apparatus (Potentiometric Titration Apparatus) 2,4,6-Trimethylpyrybine, m-nitrophenol HCL Propan-2-ol Potassium Chloride Electrolyte Potassium Hydroxide Toluene Water Titration Beaker with Titration Stand Burette

8	INORGANIC ACIDITY Cl. 4.2, Table-1, Sl. No. (vii)	250 ml Beaker Heating Mantle Methyl Orange Indicator
9	SAPONIFICATION VALUE Cl. 4.2, Table-1, Sl. No. (viii)	Water Condenser Hydrochloric acid Potassium Hydroxide Ethyl Methyl Ketone Phenolphthaleium Indicator Glass Beads Conical Flask Burette
10	COPPER STRIP CORROSION Cl. 4.2, Table-1, Sl. No. (ix)	Bath @100°C Copper Strip Silica Paper (240 Grit) Silica Powder Hexane Test Tube Jar Thermometer IP-64 C Corrosion Standard Chart

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

ANNEX B
TO THE PRODUCT MANUAL FOR
GENERAL PURPOSE MACHINERY OILS- SPECIFICATION
AS PER IS 493 (PART 1): 2019
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.

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

3. LABELLING, MARKING, PACKING - The Standard Mark as given in schedule of the licence and Licence Number (i.e. CM/L) shall be incorporated on the product and on the test certificate accompanied along with each consignment, and the marking and packing shall be done as per the provisions of the Indian Standard, provided always that the product thus marked conform to all the requirements of the specification.

4. CONTROL UNIT – For the purpose of this scheme, the quantity of the material produced from the same type of raw material, of same Grade, in a day shall constitute a control unit.

5. 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.

6. TEST CERTIFICATE - For each consignment of BIS Certified material conforming to IS 493 (Part 1): 2019 there shall be a test certificate which shall contain the Standard Mark, the Control Unit number and the corresponding test results (as given in Annexure-I enclosed)

7. REJECTIONS – Disposal of non-conforming product shall be done in such a way to ensure that there is no violation of provisions of BIS Act, 2016.

Table 1

(Levels of Control)

(Para 5 of Scheme of Inspection and Testing)

Sl No.	(1)				(2)	(3)		
	Test Details				Test equipment requirement R:required (or) S:Subcontracting permitted	Levels of Control		
	Cl.	Requirement	Test Method			No. of Sample	Frequency	Remarks
			Clause	Reference				
1	4.1	General	4.1	IS 493 (Part 1)	R	One	Each Control Unit	-
2	4.2, Table 1, S. No. (i)	Kinematic Viscosity		IS 1448 (Part 25/ Sec. 1)	R	One	Each Control Unit	-
3	4.2, Table 1, S. No. (ii)	Pour Point		IS 1448 (Part 10/ Sec. 2)	R	One	Each Control Unit	-
4	4.2, Table 1, S. No. (iii)	ASTM Colour		IS 1448 (Part 12)	R	One	Each Control Unit	-
5	4.2, Table 1, S. No. (iv)	Flash Point (Cleveland Open Cup)		IS 1448 (Part 69)	R	One	Each Control Unit	-
6	4.2, Table 1, S. No. (v)	Ash		IS 1448 (Part 4/Sec. 1)	R	One	Each Control Unit	-
7	4.2, Table 1, S. No. (vi)	Total Acidity		IS 1448 (Part 2)	R	One	Each Control Unit	-
8	4.2, Table 1, S. No. (vii)	Inorganic Acidity		IS 1448 (Part 2)	R	One	Each Control Unit	-

9	4.2, Table 1, S. No. (viii)	Saponification value		IS 1448 (Part 55/Sec. 1)	R	One	Each Control Unit	-
10	4.2, Table 1, S. No. (ix)	Copper strip corrosion		IS 1448 (Part 15)	R	One	Each Control Unit	-

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 column 3 with proper justification for approval by BO Head.

ANNEXURE I

(Para 6 of the Scheme of Inspection and Testing)

XYZ COMPANY

(Registered office Address and works address)

TEST CERTIFICATE

General Purpose Machinery Oils**as per IS 493 (Part 1): 2019**BIS
STANDA
RD
MARK

TEST CERTIFICATE No.

DATE _____

To M/s _____

We certified that the material described below fully conforms to IS **493 (Part 1): 2019**. Properties of the product, as tested in accordance with the Scheme of Testing and Inspection contained in the BIS Certification Marks Licence No. CM/L are as indicated below against each order No. _____

(PLEASE REFER TO IS **493 (Part 1): 2019** FOR DETAILS OF
SPECIFICATION REQUIREMENTS)

TEST RESULTS

Order No.& Date	Grade	Control Unit No.	Quantity in Litres										Copper Strip Corrosion At 100°C for 3 hours
General				Kinematic Viscosity In mm ² /s	Pour Point in °C	ASTM Colour	Flash Point (Cleveland Open Cup) °C	Ash percent by mass	Total Acidity (mg KOH/g)	Inorganic Acidity	Saponification value		

REMARKS

WAGON

NO.

TRUCK NO.

(It is suggested that size A4 paper be used for this test certificate)

FOR XYZ COMPANY