



उत्पाद मैनुअल

For Specification for Grease No. 0, Graphited

IS 408: 2020 के अनुसार

PRODUCT MANUAL
FOR Grease No. 0, Graphited - Specification
ACCORDING to IS 408: 2020

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 408 : 2020
	शीर्षक Title	:	Grease No. 0, Graphited
	संशोधनों की संख्या No. of amendments	:	1
2.	नमूना दिशानिर्देश Sampling Guidelines		
a)	कच्चा माल Raw material	:	- Mineral Lubricating Oil - Aluminium Soap/Aluminium Stearate - Graphic Flake Firm shall submit declaration regarding CI 3.3 for Defence purposes, if applicable and submit evidence of conformity as per CI 3.3 of IS 408:2020. Note: This section indicates the requirements for raw material(if specified in the IS)for which compliance is to be established during Grant of Licence/Change in Scope of Licence/Factory Surveillance.
b)	समूहीकरण दिशानिर्देश Grouping Guidelines	:	Not applicable

c)	नमूने का परिमाण Sample Quantity	:	2 Kgs (For complete testing) 4 Kgs (For raw material testing of mineral lubricating oil) 2 Kgs (For keeping quality) Note: This section indicates the quantity of the sample of the product and/or the raw material (if applicable), required to be sent to the laboratory for testing, for the purpose of Grant of Licence/Change in Scope of Licence/ Factory Surveillance (in case of market surveillance, effort may be made to procure the required quantity of product sample, as far as possible since raw material sample may not be available in market)
d)	परीक्षण अनुरोध में घोषित किए जाने वाले पैरामीटर Parameters to be Declared in Test Request	:	Whether to be used for defense purpose (Yes/ No) 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. Description- General 2. Moisture and volatile matter, percent by mass, Max 3. Penetration of worked material at $25 \pm 0.5^{\circ}\text{C}$ (60 double Strokes) 4. Drop point, $^{\circ}\text{C}$, Min 5. Ash, percent by mass, Max 6. Graphite flake content, percent by mass, Min 7. Inorganic acidity 8. Resistance to breakdown or tendency of the constituents to separate Note: This section is for the guidance of BIS Certification Officers/Technical Auditors of BIS Authorized Outside Surveillance Agencies(OSAs) during factory inspection to provide ready reference regarding the tests which can be witnessed during the inspection in the factory by the officer/auditor.		
6.	लाइसेंस का दायरा/Scope of the Licence:		
	"Licence is granted to use Standard Mark as per IS 408 : 2020 with the following scope:		
	Name of the product	Grease No. 0, Graphited	

ANNEX – A

LIST OF TEST EQUIPMENTS

(INDICATIVE LIST, FOR GUIDANCE ONLY)

Sl. No.	Tests Used In With Clause Reference	Test Equipment/Chemical
1	GENERAL (As per IS: 408 : 2020 Clause 3.1)	Visual
2	Moisture and volatile matter, percent by mass, Max {As per IS: 408 : 2020 Clause 3.2 & 3.5, Table 1, SI No. (i)}	• Petri Dishes • Glass Thermometer • Air-Oven • Analytical Balance • Desiccator • Spatula
3	Penetration of worked material at $25 \pm 0.5^{\circ}\text{C}$ (60 double Strokes) {As per IS: 408 : 2020 Clause 3.2 & 3.5, Table 1, SI No. (ii)}	• Penetrometer Apparatus • Water/Air Bath • Full-scale cone • One-half-scale cone and shaft • One-quarter-scale cone and shaft • Grease Cutter • Full-scale grease worker • One-half-scale grease worker • One-quarter-scale grease worker • Overflow-ring (optional) • Timer • Spatula • Test-portion containers (for petrolatum)
4	Drop point, $^{\circ}\text{C}$, Min {As per IS: 408 : 2020 Clause 3.2 & 3.5, Table 1, SI No. (iii)}	• Grease Cup • Test Tube • Glass Thermometer • Oil Bath • Ring Stand and Ring • Cup Plug Gauge • Thermometer depth gauge • Clamps for thermometers • Corks • Polished Metal Rod • Drop Point Apparatus • Heater • Stirrer
5	Ash, percent by mass, Max {As per IS: 408 : 2020 Clause 3.2 & 3.5, Table 1, SI No. (iv)}	• Mixer/Mechanical Shaker • Evaporating Vessel • Cooling Vessel • Bunsen Burner • Analytical Balance • Electrical Muffle Furnace • Desiccator • Forceps

		• Propan-2-ol • Toluene • Filter Paper
6	Copper strip corrosion test, at $75 \pm 1^\circ\text{C}$ for 24 h {As per IS: 408 : 2020 Clause 3.2 & 3.5, Table 1, SI No. (v)}	• Copper Strip • Glass Beaker • Spatula • Air-Oven • Ethyl Ether • Petroleum Hydrocarbon Solvent • Cotton Wool • Carborundum Powder
7	Oil separation, at $25 \pm 0.5^\circ\text{C}$ for 168 h, percent by mass, Max {As per IS: 408 : 2020 Clause 3.2 & 3.5, Table 1, SI No. (vi)}	• Apparatus for Oil Separation • Air-Oven • Metal weight • Oil Cup • Analytical Balance • Spatula • Temperature Controlled Chamber
8	Graphite flake content, percent by mass, Min {As per IS: 408 : 2020 Clause 3.2 & 3.5, Table 1, SI No. (vii)}	• Reflux Condensar • Dilute Hydrochloric Acid • Petroleum Hydrocarbon Solvent • Rectified Spirit • Conical flask • Desiccator • Tared Gooch crucible • Weighing Scale
9	Inorganic acidity {As per IS: 408 : 2020 Clause 3.2 & 3.5, Table 1, SI No. (viii)}	• Methyl Orange Indicator • Distilled water • Weighing Scale • Separating Funnel • Air- Oven • Measuring Cylinder (1 Litre)
10	Resistance to breakdown or tendency of the constituents to separate {As per IS: 408 : 2020 Clause 3.2 & 3.5, Table 1, SI No. (ix)}	• Mould • Small clock glass

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 (QAP) 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 (QAP) defining the control unit (i.e. lot/batch etc.), the levels of control (i.e. the frequency and number of samples for conducting the different tests as per the Indian Standard) and declare the arrangement for testing i.e. whether in-house or subcontracting/sharing for each applicable test and submit the same to BIS Branch Office for information. The manufacturer shall comply with the QAP and maintain test records in accordance with para 2.1.

1.3 RECOMMENDED LEVELS OF CONTROL/CONTROL UNIT:

1.3.1 For the guidance of manufacturers, the recommended definition of control unit is: Grease No. 0, Graphited 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**. Manufacturer has the discretion of declaring their own levels of control or accept the levels of control given in this document.

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.

2. ENSURING COMPLIANCE THROUGH TESTING- Manufacturers shall ensure compliance of their products to all the requirements of the Indian Standard for which they may have in-house test facilities. However, there is no obligation to maintain in-house laboratory. Licensee may use alternative arrangements for tests of the production as per the declared QAP. Various alternatives are available for operation of BIS certification as given below and the relevant guidelines for availing such relaxations by the manufacturers, as amended from time to time, are to be referred :

- i) Shared testing resources like common facility,
- ii) Cluster based testing facility,
- iii) Sub-contracting to outside laboratories which may either be:
 - a) BIS recognised/ empanelled laboratories, or
 - b) Any accredited laboratory as per ISO/IEC 17025

2.1 TEST RECORDS- The manufacturers shall maintain test records for the tests carried out (either in-house or at a sub-contracted or at shared test facility) to establish conformity of the product to the Standard for operation of licence. For the tests being subcontracted or conducted at a shared test facility, test results issued by the laboratories or test facilities, shall be made 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 (suitable closed containers) provided always that the material so marked conforms to each requirement of the specification.

3.1 Packing and Marking shall be done as per Clause 4 of the Indian Standard.

3.2 **Additional Marking requirements:** The material shall also be marked with the following additional requirement on each container (suitable closed containers):

a) "For BIS certification details please visit www.bis.gov.in"

4. REJECTION - 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
(Recommended Levels of Control by BIS- For Guidance Only)

(1)				(2)		
Test Details				Levels of Control		
Cl.	Requirement	Test Methods Clause	Reference	No. of Sample	Frequency	Remarks
3.1	Description	3.1	IS 408	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.		
3.2.1	Composition- Mineral Lubricating Oil		IS 1448 [P:25/ Sec 1] & IS 1448 [P:69]	Whenever raw material source is changed		
3.3	Composition – Aluminium Stearate		IS 494	Whenever raw material source is changed (Only for Defence purposes)		
3.2.3	Composition- Graphite Flake		IS 495	Whenever raw material source is changed		
3.4	Keeping Quality	3.4	IS 408	Once in a year		
3.5, Table 1, (i)	Moisture and volatile matter, percent by mass, Max		IS 1448 [P:61]	One	Each Control Unit	-
3.5, Table 1, (ii)	Penetration of worked material at 25 ± 0.5°C (60 double Strokes)		IS 1448 [P:60]	One	Each Control Unit	-
3.5, Table 1, (iii)	Drop point, °C, Min		IS 1448 [P:52]	One	Each Control Unit	-
3.5, Table 1, (iv)	Ash, percent by mass, Max		IS 1448 [P:4/Sec 1] (Method B ₁)	One	Each Control Unit	-
3.5, Table 1, (v)	Copper strip corrosion test, at 7°C for 24 h		IS 1448 [P:51]	One	Each Control Unit	-

3.5, Table 1, (vi)	Oil separation, at 25°C for 168 h, percent by mass, Max		IS 1448 [P:85]	One	Each Control Unit	-
3.5, Table 1, (vii)	Graphite flake content, percent by mass, Min		IS 1448 [P:58]	One	Each Control Unit	-
3.5, Table 1, (viii)	Inorganic acidity	Annex A	IS 408	One	Each Control Unit	-
3.5, Table 1, (ix)	Resistance to breakdown or tendency of the constituents to separate	Annex B	IS 408	One	Each Control Unit	-