

व्यापक परिचालन मसौदा

प्रलेख प्रेषण संज्ञापन	
संदर्भ	दिनांक
पीसीडी 25 (14904)(सी)	24 10 2019

तकनीक समीति पी सी डी 25

प्रे षती

लुब्रिकंट्स तकनीक समीति , पी सी डी 25 के समस्त सदस्य।

पीसीडी 25 की सभी उपस मतियाँ

पैट्रो लयम ,कोयला एवं संबं धत उत्पाद वभाग परिषद) पी सी डी सी (के सदस्य ।

रू च रखने वाले सभी निकाय ।

महोदय महोदया,

कृपया आपके अवलोकन हेतु निम्न ल खत मसौदा संलग्न है :

क्र संख्या	मसौदा संख्या	वषय
1	पी सी डी 25 (14904) सी	सभी मौसम एंटी - वयर हाइड्रो लक तेल- व शष्ट

कृपया इस मसौदा का अवलोकन कर अपनी सम्मतियाँ यह बताते हुए भेजे क यदि अंतत यह मानक मसौदा राष्ट्रीय मानक के रूप में प्रका शत हो जाये तो इस पर अमल करने में आपके व्यवसाय अथवा कारोबार में क्या कठिनाईया आ सकती हैं।

सम्मतियाँ भेजने क अंतिम ति थ : **24 December 2019**

सम्मतियाँ कृपया संलग्न प्रारूप में अधोहस्ताक्षरी को भेजे

धन्यवाद,

भवदीय

वी के डयूंडी

वैज्ञानिक जी एवं प्रमुख)पी सी डी)

प्रति उपरि ल खत

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**DRAFT IN WIDE CIRCULATION**

**DOCUMENT DESPATCH ADVICE**

<b>REF:</b>	<b>DATE</b>
<b>Doc: PCD 25(14904)C</b>	<b>24 10 2019</b>

**Technical Committee: Lubricants and Related Products Sectional Committee, PCD 25**

To

- i) All members of Lubricants and Related Products Sectional Committee, PCD 25 & its Subcommittees
- ii) All interested members of PCDC
- iii) All others interested.

Dear Sir,

Please find enclosed the following document:

<b>Doc: No.</b>	<b>Title</b>
<b>PCD 25(14904 )C</b>	<b>All weather antiwear hydraulic oils — Specification</b>

Kindly examine this draft and forward your views stating any difficulty which you are likely to experience in your business or profession, if this is finally adopted as National Standard.

**Last date for comments is: 24 December 2019**

In case no comments are received or comments received are of editorial nature, you will kindly permit us to presume your approval for the above document as finalized. However, in case of comments of technical in nature are received then it may be finalized either in consultation with the Chairman, Sectional Committee or referred to the Sectional committee for further necessary action if so desired by the Chairman, Sectional Committee.

Comments if any, may please be made in the format as given overleaf and mailed to the undersigned at the above address. The document is also hosted on BIS website [www.bis.gov.in](http://www.bis.gov.in)

Thanking you,

Signature :

Name : V.K. Diundi  
Designation : Sc-G & Head (PCD)  
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Encl: As above.





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**Doc.No: PCD25(14904)C**

**October 2019**

### **Draft Indian Standard**

## **ALL WEATHER ANTIWEAR HYDRAULIC OILS — SPECIFICATION**

**ICS No 75.120**

**Last date for comments 24 December 2019**

*Draft provided by IOC(R&D)*

### **FOREWORD**

*(Formal Clauses will be added later)*

This draft standard applies to the hydraulic oils to be used in hydrostatic drive systems, in which high thermal stresses occur, and corrosion is expected due to the ingress of moisture. Such oils additionally contain antiwear additives and are being recommended for pumps or hydraulic motors, due to their design or operating conditions. The all weather antiwear hydraulic oils require minimum viscosity temperature dependence suitable for extended temperature range applications. This draft standard covers ISO VG 15, ISO VG 32, ISO VG 46, ISO VG 68 & ISO VG 100.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values ( *revised* )'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

### **1. SCOPE**

This draft standard prescribes the requirements, methods of sampling and their test methods of all weather antiwear hydraulic oils.

### **2 REFERENCES**

The following Indian standards contain provisions which through reference in this text constitute the provisions of the standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

<i>IS No.</i>	<i>Title</i>
1447 (Part 3) : 1992	Methods of sampling of petroleum & its products : Part 3 Method of sampling of semi-solid & solid petroleum products
1448	Methods of test for petroleum and its products:
[P:1/ Sec 1]: 2002	Determination of acid number by Potentiometric titration ( <i>second revision</i> )
[P:1/ Sec 2]: 2002	Determination of base number by Potentiometric titration ( <i>second revision</i> )



[P:2] : 2007/ ISO 6619:1988	Petroleum products and lubricants – Neutralization number - Potentiometric titration method ( <i>second revision</i> )
[P 25 / Sec 1]: 2018/ ISO 3104 : 1994	Transparent and opaque liquids Section 1 Determination of kinematic viscosity and calculation of dynamic viscosity ( <i>second revision</i> )
[P:56] : 2013/ ISO 2909: 2002	Calculation of Viscosity Index from Kinematic Viscosity ( <i>third revision</i> )
[P:67] : 1982	Foaming characteristics of lubricating oils ( <i>first revision</i> )
[ P 69] : 2013/ ISO 2592 : 2000	Determination Flash and Fire Points - Cleveland Open Cup Method ( <i>first revision</i> )
[P:91] : 2019/ ISO 6614:1994	Methods of test for petroleum and its products: Part 91 Emulsion characteristics of petroleum oils and synthetic fluids
[P:96] : 2019/ ISO 7120:1987	Methods of Test for Petroleum and its Products - Part 96 : Rust-preventing Characteristics of Steam-turbine Oil in the Presence of Water
[P:102] : 1981	Methods of test for petroleum and its products: Part 102 Determination of air release value
[P:106] :1981	Methods of test for petroleum and its products: Part 106 Determination of oxidation characteristics of inhibited steam-turbine oils
3400(P:6):2018/ ISO 1817:2015	Rubber, vulcanized or thermoplastic — Determination of the effect of liquids

### 3. GRADES

The product shall be available in five different viscosity grades namely, VG 15, VG 32, VG 46, VG 68 and VG 100.

### 4 REQUIREMENTS:

#### 4.1 General

The material shall be made from refined mineral base stocks of high viscosity index and shall contain suitable polymer and additives to meet the performance requirements.

4.2 The material shall also comply with the requirements given in Table 1 when tested according to the methods given in ‘P’ series of IS 1448 and annexes, in col 6 of Table 1.

### 5 PACKING AND MARKING

5.1 **Packing** – The material shall be packed in containers of metal or any other suitable material as agreed between the purchaser and supplier.

#### 5.2 Marking

Material shall be marked with the following information:

- a) Name and type of material;





xi)	Foam test, Foam tendency / stability after 10 minutes settling time, foam, ml/ml Seq I at 24 °C Seq II at 93 °C Seq III at 24 °C after 93 °C	150/Nil 75/Nil 150/Nil	150/Nil 75/Nil 150/Nil	150/Nil 75/Nil 150/Nil	150/Nil 75/Nil 150/Nil	150/Nil 75/Nil 150/Nil	P 67
xii)	Emulsion characteristics at 54°C / 82°C, <i>Max</i>	40-37-3 (20)	40-37-3 (25)	40-37-3 (25)	40-37-3 (25)	40-37-3 (30)	P 91
xiii)	Air release Value at 50°C, in minutes, <i>Max</i>	5	5	10	10	14	P 102
xiv)	Neutralization no, mg KOH/gm	Report	Report	Report	Report	Report	P 2
	(or)						
	a) Acid number	Report	Report	Report	Report	Report	P:1/Sec-1
	b) Base number	Report	Report	Report	Report	Report	P:1/Sec-2
xv)	Aging behavior (Increase in neutralization number after 1000 hrs.), mg KOH/gm, <i>Max</i>	2.0	2.0	2.0	2.0	2.0	P 106
xvi)	Seal (SRE - NBR 1) compatibility test after 7 days at 100°C a) % change in volume b) Change in shore Hardness	0 to 15 0 to (-)8	0 to 12 0 to (-)7	0 to 12 0 to (-)7	0 to 10 0 to (-)6	0 to 10 0 to (-)6	IS 3400(P:6)
xvii)	Shear stability test, viscosity loss after 250 cycles, percent change in KV at 100°C	Report	Report	Report	Report	Report	ISO 20844
xviii)	Pump wear test, (Vickers 104C for 250 hours test), <i>Max</i> a) Loss of mass of rings, mg b) Loss of mass of vanes, mg	--	120 30	120 30	120 30	120 30	ASTM D 7043
xix)	FZG Niemen EP test, damage load stage, <i>Min</i>	--	10	10	10	10	ISO 14635-1
xx)	Density at 15°C, gm/ml	Report	Report	Report	Report	Report	P 16