

# INTERPLANT STANDARD — STEEL INDUSTRY

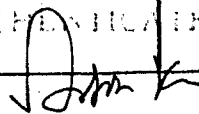
IP SS



SPECIFICATION FOR STEAM CYLINDER OIL

IPSS : 1-09-010-81

BASED ON IS : 1589-1960 AUTHENTICATED COPY

  
 (ASHOK KUMAR)  
 SR. DEY. I & C (IPSS)

## 0. Foreword

**0.1** Interplant standardization in steel industry has been initiated under the aegis of the Indian Standards Institution (ISI) and the Steel Authority of India Limited (SAIL). This Interplant Standard, prepared by the Subcommittee on Oils and Lubricants, IPSS 1 : 9, with the active participation of the representatives of all the steel plants and established manufacturers of lubricating oils, was adopted by the Approval Committee on Consumable Stores and General Equipment, IPSS 1, on 6 November 1981.

**0.2** Interplant standardization in steel industry primarily aims at achieving rationalization and unification of technical requirements of consumable stores, parts and sub-assemblies used in steel plant equipment and machinery, and provides guidance for indenting them.

**1. Scope** — This Interplant Standard is essentially based on 'IS : 1589-1960 Specification for oil, cylinder ( Reaffirmed 1978 )' and covers the grades of the lubricating oil for steam engine cylinders for different applications and heavily loaded reducers of worm, spiral and bevel gears used in the steel plants.

**1.1** These grades have been chosen from the several grades mentioned in the Indian Standard and hence their technical requirements are applicable as such.

**1.2** Supplementary requirements are only a few and for the convenience of reference for the user of this standard, the clause numbers of the Indian Standard for each requirement are given in Appendix 'A', along with the numbers of the matching clauses of this standard.

**2. Grades** — For the purpose of this standard, steam cylinder oil shall be of the following four grades which have been chosen for steel plant application out of the several mentioned in the Indian Standard:

IPSS Grade	Equivalent IS Grade ( see IS : 1589-1960 )
1	Table IV Grade 1, Type 2
2	Table II Grade 2, Type 2
3	Table III Grade 3, Type 2
4	Table IV Grade 1, Type 1

## 3. General Requirements

**3.1 Grades 1, 2 and 3** — The material shall be pure mineral oil compounded with approved fatty oil and shall be free from water, grit and other visible impurities. It shall be homogeneous and shall not stratify in normal storage.

**3.2 Grade 4** — The material shall be a filtered pure mineral oil free from water, grit and other visible impurities.

**4. Technical Requirements** — The material shall comply with the requirements prescribed in the corresponding tables in the Indian Standard; for convenience of reference these are given in Table 1.

**5. Packing** — The packing shall be in new and sound steel barrels/drums of 200 litres nominal capacity conforming to 'IS : 1783-1974 Specification for drums, large, fixed ends ( first revision )' and shall be properly sealed against water and other contaminants.

**Amendments issued ( to be filled up by the user department ) :**

No.	Date of Issue	No.	Date of Issue
1		3	
2		4	

UDC 621.892.096

TABLE 1 TECHNICAL REQUIREMENTS OF STEAM CYLINDER OIL

( Clause 4 )

Sl No.	Characteristic	Grade 1	Grade 2	Grade 3	Grade 4	Method of Test Ref to [ P : ] of IS : 1448
i)	Flash point, closed ( Pensky Martens ), Min °C	258	279	288	255	P : 21 ( 1970 )
ii)	Kinematic viscosity in centistokes at 100°C	25 to 35	38 to 45	43 to 55	27 to 35	P : 25 ( 1976 )
iii)	Viscosity index, Min	80	80	90	80	P : 56 ( 1973 )
iv)	Acidity, total ( mg of KOH per g of oil )	1.0	1.0	1.0	0.25	P : 2 ( 1967 ), Method A
v)	Acidity, inorganic ( mg of KOH per g of oil )	Nil	Nil	Nil	Nil	P : 2 ( 1967 )
vi)	Ash, percent by mass, Max	0.01	0.05	0.05	0.01	P : 4 ( 1968 ), Method A
vii)	Carbon residue ( Rams-bottom ), percent by mass, Max	1.25	3.0	3.5	1.25	P : 8 ( 1967 )
viii)	Pour point, Max °C	15	15	15	15	P : 10 ( 1970 )
ix)	Copper-strip corrosion for 3 hours at 100°C	Not worse than No. 1	Not worse than No. 1	Not worse than No. 1	Not worse than No. 1	P : 15 ( 1976 )
x)	Saponification value	9 to 14	9 to 14	9 to 14	0.50, Max	P : 55 [ IS : 1448 ( Part III ) - 1963 ]

## APPENDIX A

( Clause 1.2 )

## COMPARATIVE STUDY OF

' IPSS : 1-09-010-81 SPECIFICATION FOR STEAM CYLINDER OIL '

AND

' IS : 1589-1960 SPECIFICATION FOR OIL, CYLINDER ( Reaffirmed 1978 ) '

Requirement		Clause Reference in IPSS	Clause Reference in ISS
Requirements which are identical between IPSS & ISS	Technical requirements	4	6
Requirements selected for steel plant use, out of several choices given in ISS	Grading	2 & 3	2
Supplementary requirements not contradicting ISS	General requirements Packing	5 6	3 8.1
Deviations from ISS ( essential )	Nil	—	—
Deviations from ISS ( desirable )	Nil	—	—