





HYLUBE HDX MULTIGRADE 20W40 & 20W50

- HYLUBE HDX MG 20 W 40 & 20 W 50 ARE MULTIGRADE ENGINE OILS
- MEETS API CC/SC , US MILITARY MIL-L-2104B, IS:13656:1993 SPECIFICATION
- RECOMMENDED FOR USE IN ALL TYPES OF DIESEL & PETROL ENGINES
 - EXCELLENT ENGINE PROTECTION UNDER HIGH TEMPERATURES
 - GOOD ENGINE START UP UNDER COLD CONDITIONS
 - **o BETTER ALL-ROUND PERFORMANCE.**

PROPERTIES	HYLUBE HDX MULTIGRADE 20 W 40	HYLUBE HDX MULTIGRADE 20 W 50
KINEMATIC VISCOSITY c St @ 40 DEG C	120	140
KINEMATIC VISCOSITY cSt @ 100 DEG C	14-16	17-19
VISCOSITY INDEX,MIN	110	110
FLASH POINT, (COC) C,MIN	200	200
POUR POINT, C , MAX	-21	-21
SULPHATED ASH,%WT,MAX	0.74	0.77
TBN ,mgKOH/g,MIN	4.05	4.05
COLOURX	RED	RED

APPROVED BY:

- M/s SWARAJ MAZDA
- M/s PUNJAB TRACTORS
- M/s HMT
- M/s EICHER
- M/s ESCORTS
- M/s BRITANNIA ENGG.LTD.
- M/s GUJRAT FORGIN

PRESS TO RETURN





HP LAAL GHODA 20W 40

- HP LAAL GHODA 20W 40 IS A MULTIGRADE DIESEL ENGINE OIL
- MEETS API CC/SC , US MILITARY MIL-L-2104B, IS:13656:1993 SPECIFICATION
- RECOMMENDED FOR USE IN ALL TYPES OF DIESEL ENGINES IN TRUCK, BUS, MUV, TAXI, TRACTOR, PUMPSET & DG SETS
 - ALL ROUND PERFORMANCE
 - ENGINE CLEANLINESS
 - **o EFFICIENT LUBRICATION**

KINEMATIC VISCOSITY cSt @40 deg C	130
KINEMATIC VISCOSITY cSt @100 deg C	13.5-16
VISCOSITY INDEX,MIN	110
FLASH POINT, (COC) C,MIN	200
POUR POINT, C , MAX	-18
SULPHATED ASH,%WT,MAX	0.8
TBN ,mgKOH/g,MIN	4.4
COLOUR	RED

PRODUCT IS IN ECONOMY RANGE







HYLUBE X3 10W 30,40,50

- HYLUBE X3 10W 30,40,50 ARE MONOGRADE ENGINE OIL FOR SEVERE DUTY DIESEL ENGINE SERVICES
- MEETS API CD , US MILITARY MIL-L-45199B,E-DL2 OF IS:13656:1993 SPECIFICATION

• RECOMMENDED FOR USE IN ALLTYPES OF DIESEL ENGINES INCLUDING EARTH MOVING & CONSTRUCTION EQUIPMENTS . X3 10W GRADE CAN ALSO BE USED AS A HYDRAULIC FLUID .X3 40 GRADE HAS BEEN SPECIALLY DESIGNED FOR ENGINES OPERATING ON FUELS HAVING HIGHER SULPHUR CONTENT.

- EXCELLENT THERMAL & OXIDATION STABILITY
- EXCELLENT PERFORMANCE UNDER SEVERE CONDITIONS.

	10W	30	40	50
KINEMATIC VISCOSITY cSt @ 40 deg C	38	125	125	260
KINEMATIC VISCOSITY cSt @ 100 deg C	5	10-12	13-15	17-20
VISCOSITY INDEX,MIN	100	95	90	90
FLASH POINT, (COC) C,MIN	190	215	215	220
POUR POINT, C , MAX	-27	-6	-6	-6
SULPHATED ASH,%WT,MAX	1.3	1.3	2.0	1.3
TBN ,mgKOH/g,MIN	9	9	13	9

APPROVED BY:

- M/s VST TILLERS
- M/s BEML
- M/s FUJI

PRESS TO RETURN





HYLUBE MTU 40

- HYLUBE MTU 40 IS ENGINE OIL FOR MTU ENGINES
- MEETS API CF&ACEA E1-96
- APPROVED AGAINST MTU 5044 ENGINE OIL (TYPE-1) SPECIFICATIONS
- SPECIALLY DEVELOPED FOR USE AS ENGINE OIL IN MTU ENGINES
 - **o** EXCEPTIONAL THERMAL&OXIDATION STABILITY
 - **o GOOD ELASTOMER COMPATIBILITY**
 - GOOD LOAD CARRYING CAPACITY

KINEMATIC VISCOSITY cst @ 100C	14
VISCOSITY INDEX,MIN	95
FLASH POINT, (COC) C,(Typ)	200
POUR POINT, C, (Typ)	-6
SULPHATED ASH,%WT	1.0-1.3
TBN ,mgKOH/g,MIN	8

APPROVED BY:

• M/s MTU,GERMANY









HYLUBE X3 10W-20

- HYLUBE X3 10W-20 IS A CRANKCASE OIL FOR TRACTOR ENGINES
- MEETS API CD , US MILITARY MIL-L-45199B,E-DL2 OF IS:13656:1993 SPECIFICATION
- SPECIFICALLY DEVELOPED FOR M/s ESCORTS FOR TRACTOR MODELS FITTED WITH ENGINE FROM AVL,AUSTRIA
 - EXCEPTIONAL THERMAL&OXIDATION STABILITY
 - OUTSTANDING VISCOSITY RELATED PERFORMANCE
 - GOOD ALKALINE RESERVE

KINEMATIC VISCOSITY cst @ 100C	6.0-8.0	
VISCOSITY INDEX,MIN	100	
FLASH POINT, (COC) C,MIN	190	
POUR POINT, C , MAX	-27	
SULPHATED ASH,%WT,MAX	1.46	
TBN ,mgKOH/g,MIN	9	

APPROVED BY:

• M/sESCORTS

FOR FURTHER INFORMATION PLEASE CONTACT OUR NEAREST REGIONAL OFFICE

PRESS TO RETURN





HP HDX PLUS 20 W 40

- HP HDX PLUS 20W40 IS SPECIALLY FORMULATED MULTIGRADE DIESEL ENGINE OIL FOR TRUCKS & BUSES FOR EXCELLENT PERFORMANCE IN GHAT SECTION
- EXCEEDS API CD REQUIREMENT
- RECOMMENDED FOR ALL TYPES OF DIESEL VEHICLES
 - EXCELLENT PERFORMANCE EVEN WITH HEAVY LOADS
 - MADE FROM GENUINE BASE OILS
 - ENSURES STABLE OIL PRESSURE
 - o 100% LONGER DRAIN PERIOD
 - **o PROMOTES EASY STARTING**
 - IMPROVES FUEL ECONOMY
 - KEEPS THE ENGINE CLEAN
 - **o** SUITABLE FOR ALL CLIMATIC CONDITINS

KINEMATIC VISCOSITY cst @ 100C	14-16	
VISCOSITY INDEX,MIN	110	
FLASH POINT, (COC) C,MIN	200	
POUR POINT, C , MAX	-21	
SULPHATED ASH,%WT,MAX	1.51	
TBN ,mgKOH/g,MIN	9.3	







HP ENGINE TONIC

- HP ENGINE TONIC IS SPECIALLY FORMULATED PRODUCT FOR ENGINE LONGEVITY
- DEVELOPED IN SYNERGY WITH HDX PLUS 20W-40
- RECOMMENDED FOR USE IN CRANKCASE WITH FRESH CHARGE OF HP HDX PLUS 20W-40
 - **o KEEPS THE ENGINE HEALTHY**
 - PROVIDES EXTRA ENGINE PROTECTION
 - GIVES EXTRA MILEAGE
 - SUPERIOR PERFORMANCE ON GHAT & DIFFICULT TERRAINS.

KINEMATIC VISCOSITY cst @ 100C	21
FLASH POINT, (COC) C,MIN	210
SULPHATED ASH,%WT,MAX	1.65







HYLUBE MILCY 30,40,50

- HYLUBE MILCY 30,40,50 ARE SUPERIOR QUALITY, HEAVY DUTY DIESEL ENGINE LUBRICATING OILS
- MEETS API CD/SF , MIL-L-2104C,E-DL 3/SF + MACK T7 OF IS:13656 AND MACK T-7 ENGINE TEST REQUIREMENTS.
- RECOMMENDED FOR HEAVY COMMERCIAL VEHICLES, LIGHT COMMERCIAL VEHICLES, TRACTORS, DIESEL PASSENGER CARS AND JEEPS REQUIRING MONOGRADE OILS
 - EXTENDED TBN RESERVES
 - PREVENTS OIL THICKENING AND ENHANCES OIL LIFE
 - CONTROL OF CORROSIVE WEAR
 - **o** EXCEPTIONAL THERMAL&OXIDATION STABILITY
 - PROLONGED ENGINE LIFE & ENHANCED DRAIN PERIOD
 - **o** OUTSTANDING ENGINE CLEANLINESS

	30	40	50
KINEMATIC VISCOSITY cst @ 100C	10.3-11.5	13.5-15.2	17.5-24
VISCOSITY INDEX,MIN	95	95	95
FLASH POINT, (COC) C,MIN	215	215	220
POUR POINT, C , MAX	-6	-6	-6
SULPHATED ASH,%WT,MAX	1.6	1.6	1.6
TBN ,mgKOH/g,MIN	9.5	9.5	9.5

APPROVED BY:

- M/s FUJI, M/s ECEL, M/s GREAVES, M/s EICHER, M/sGUJARAT FORGINGS
- M/s TAFE, M/s ASHOK LEYLAND, M/s BAJAJ TEMPO, M/sVOLTAS LTD.
- M/s HMT, M/s VST TILLERS, M/s PUNJAB TRACTORS, M/sTELCO







HYLUBE MILCY SUPER 20W 40

- HULUBE MILCY SUPER 20W 40 IS A PREMIUM MULTIGRADE ENGINE OIL DESIGNED TO MEET THE DEMANDING LUBRICATION REQUIREMENTS OF ALL MODERN DIESEL ENGINES.
- MEETS API CD/SF, MIL-L-2104C,E-DL 3/E-PL 2 OF IS:13656:1993 AND MACK T-7 ENGINE TEST REQUIREMENTS.
- RECOMMENDED FOR USE IN COMMERCIAL VEHICLES, TRACTORS, DIESEL PASSENGER CARS AND JEEPS OF LEADING MANUFACTURERS
 - 0
 - **o** EXTENDED TBN QUALITY RESERVES
 - PREVENTS OIL THICKENING AND ENHANCES OIL LIFE
 - POSSESS ABSOLUTE CONTROL OF CORROSIVE WEAR
 - **o** EXCEPTIONAL THERMAL&OXIDATION STABILITY
 - PROLONGED ENGINE LIFE & ENHANCED DRAIN PERIOD
 - OUTSTANDING ENGINE CLEANLINESS

KINEMATIC VISCOSITY cst @ 100C	14-16
VISCOSITY INDEX,MIN	110
FLASH POINT, (COC) C,MIN	200
POUR POINT, C , MAX	-18
SULPHATED ASH,%WT,MAX	1.66
TBN ,mgKOH/g,MIN	9.92

APPROVED BY:

- M/s SIMPSON M/s ESCORTS M/s DAEWOO M/s HMT
- M/s GUJARAT FORGINGS M/s INGERSOLL RAND
- M/s VOLTAS

PRESS TO RETURN





HYLUBE EXTRA 20W 40

- HULUBE EXTRA 20W 40 IS A PREMIUM MULTIGRADE ENGINE OIL DESIGNED TO MEET THE DEMANDING LUBRICATION REQUIREMENTS OF ALL MODERN DIESEL ENGINES.
- MEETS API CD/SF, MIL-L-2104C,E-DL 3 OF IS:13656:1993 AND MACK T-7 ENGINE TEST REQUIREMENTS.
- RECOMMENDED FOR ALL DIESEL ENGINES.
 - PREVENTS OIL THICKENING AND ENHANCES OIL LIFE
 - CONTROL OF CORROSIVE WEAR
 - EXCELLENT THERMAL &OXIDATION STABILITY
 - PROLONGED ENGINE LIFE & ENHANCED DRAIN PERIOD

KINEMATIC VISCOSITY cst @ 40 DEG C	118
KINEMATIC VISCOSITY cst @ 100 DEG C	14-15
VISCOSITY INDEX,MIN	110
FLASH POINT, (COC) C,MIN	200
POUR POINT, C , MAX	-21
SULPHATED ASH,%WT,MAX	1.51
TBN ,mgKOH/g,MIN	10.4

APPROVED BY:

- M/s ASHOKLEYLAND, M/s BEML
- M/s TAFE , M/s KCL
- M/s HM

PRESS TO RETURN





HYLUBE CDKC 20W 40

- HULUBE CDKC 20W 40 IS A MULTIGRADE ENGINE OIL OF OUTSTANDING PERFORMANCE SPECIALLY DEVELOPED FOR KIRLOSKAR CUMMINS
- MEETS API CD, MIL-L-45199B,E-DL 2 OF IS:13656
- RECOMMENDED FOR USE IN DIESEL ENGINES REQUIRING THIS LEVEL
 - **EXCEPTIONAL THERMAL & OXIDATION STABILITY**
 - OUTSTANDING VISCOSITY RELATED PERFORMANCE

KINEMATIC VISCOSITY cst @ 100 deg C	14-15
VISCOSITY INDEX,MIN	110
FLASH POINT, (COC) C,MIN	200
POUR POINT, C , MAX	-21
SULPHATED ASH,%WT,MAX	1.46
TBN ,mgKOH/g,MIN	9

• PROLONGED ENGINE LIFE







HP MILCY POWER 15W40

- HP MILCY POWER 15W-40 IS PREMIUM MULTIGRADE DIESEL ENGINE OIL.
- HP MILCY POWER HAS BEEN ACREDITED WITH API CF-4 DONUT BY API. IT ALSO MEETS MB 228.1, CCMC D-4/G-4/PD-2, MIL-L-2104E & ALLISON C-4, E-DLS OF IS 13656,MAH 271, VDS
- RECOMMENDED FOR ALL NATURALLY ASPIRATED AS WELL AS TURBOCHARGED DIESEL ENGINES IN COMMERCIAL VEHICLES, UTILITY VEHICLES, CARS & JEEPS, EARTH MOVING & CONSTRUCTION EQUIPMENT & DG SETS
 - LONG DRAIN & PROLONGED ENGINE LIFE
 - EXTENDED TBN QUALITY RESERVE
 - REDUCED OIL CONSUMPTION
 - EXCELLENT SOOT & SLUDGE CONTROL
 - PROLONGED ENGINE LIFE

KINEMATIC VISCOSITY cSt @ 40 deg C	Report
KINEMATIC VISCOSITY cSt @ 100 deg C	14-15.2
VISCOSITY INDEX,MIN	120
FLASH POINT, (COC) C,MIN	190
POUR POINT, C, MAX	-21
SULPHATED ASH,%WT,MAX	1.53
TBN ,mgKOH/g,MIN	9

APPROVED BY:

- M/s TELCO M/s KCL M/s BHEL M/s HINDUSTAN MOTORS RDSO
- M/s BEML M/s SIMPSON M/s ASHOK LEYLAND







HYLUBE SHP 15W 40

- HYLUBE SHP 15W 40 IS A PREMIUM QUALITY "HIGH PERFORMANCE DIESEL ENGINE OIL"
- MEETS MB 228.3, VOLVO VDS2 & E-DL4 OF IS:13656-1993 SPECIFICATIONS
- RECOMMENDED FOR USE IN ALL NEW GENERATION DIESEL ENGINES.
 - EXCEPTIONAL THERMAL & OXIDATIONSTABILITY
 - OUTSTANDING VISCOSITY RELATED PERFORMANCE
 - LONG DRAIN PERIODS

• HYLUBE SHP 15W-40 HAS SUCCESSFULLY COMPLETED 45,000KMS DRAIN PERIODS AT LEADING STU'S

KINEMATIC VISCOSITY cst @ 100C	14-16
VISCOSITY INDEX,MIN	125
FLASH POINT, (COC) C,MIN	200
POUR POINT, C , MAX	-24
TBN ,mgKOH/g,MIN	13

APPROVED BY:

- M/s MERCEDES BENZ, GERMANY
- M/s VOLVO, SWEDEN
- M/s SAME GREAVES







HP EXTRA SUPER MOTOR OIL 20W-40/20W-50

- HP EXTRA SUPER MOTOR OILS ARE RED COLOUR SUPERIOR QUALITY MULTIGRADE ENGINE OILS FOR CARS MADE FROM HIGH QUALITY BASE STOCKS AND ADDITIVES
- MEETS API SF/CC, MIL-L-46152B & E-PL2/E-DL 1 OF IS:13656:1993
- ENGINE OIL FOR ALL PASSENGER CARS RUNNING ON PETROL
 - **o** OUTSTANDING ENGINE CLEANLINESS
 - **o** EXCELLENT OXIDATION STABILITY
 - IMPROVED WEAR PROTECTION & EXTENDED ENGINE LIFE
 - **o** IMPROVED FUEL ECONOMY
 - COMPATIBLE WITH CATALYTIC CONVERTER

	20W 40	20W 50
KINEMATIC VISCOSITY cst @ 100C	14-16	18-20
VISCOSITY INDEX,MIN	110	118
FLASH POINT, (COC) C,MIN	200	200
POUR POINT, C , MAX	-21	-21
SULPHATED ASH,%WT,MAX	1	1
TBN ,mgKOH/g,MIN	4.97	5.4
COLOUR	RED	RED

APPROVED BY:

- M/s MARUTI UDYOG
- M/s HINDUSTAN MOTORS
- M/s TELCO

PRESS TO RETURN





HP SUPER ENGINE OIL MG 20W-40/20W-50

- HP SUPER ENGINE OILS ARE MULTIGRADE ENGINE OILS USED FOR CARS
- MEETS API CC/SC, US MILITARY MIL-L-2104B RECOMMENDED FOR USE IN ALL TYPES OF DIESEL & PETROL ENGINES.
 - EXCELLENT ENGINE PROTECTION UNDER HIGH TEMPERATURE
 - GOOD ENGINE START UP UNDER COLD CONDITIONS

	20W 40	20W 50
KINEMATIC VISCOSITY cst @ 100C	14-16	18-20
VISCOSITY INDEX,MIN	110	118
FLASH POINT, (COC) C,MIN	200	200
POUR POINT, C , MAX	-21	-21
SULPHATED ASH,%WT,MAX	0.72	0.77
TBN ,mgKOH/g,MIN	4.05	4.0
COLOUR	RED	RED

o BETTER ALL-ROUND PERFORMANCE







HP SJX 15W 40

- HP SJX 15W 40 IS NEW GENERATION ENGINE OILS MEETING WOLD'S HIGHEST PERFORMANCE LEVELS IN GASOLINE ENGINE OILS
- HP SJX 15W 40 HAS BEEN ACCREDITATED WITH APISJ/CF DONUT BY API
- RECOMMENDED AS ENGINE OIL FOR ALL NEW GENERATION PASSENGER CARS
 - OUTSTANDING ENGINE CLEANLINESS & ENHANCED ENGINE LONGEVITY
 - **o** EXCELLENT COLD STARTING CAPABILITIES
 - LOWER ENGINE OIL CONSUMPTION & IMPROVED FUEL ECONOMY
 - COMPATIBLE WITH CATALYTIC CONVERTER

KINEMATIC VISCOSITY cst @ 100C	14-16
VISCOSITY INDEX,MIN	120
FLASH POINT, (COC) C,MIN	200
POUR POINT, C, MAX	-27
SULPHATED ASH,%WT,MAX	1.32
TBN ,mgKOH/g,MIN	8









HP CRUISE 15W-40

- HP SGX 15W 40 IS A PREMIUM QUALITY MULTIGRADE ENGINE OIL WHICH PROVIDES OUTSTANDING PERFORMANCE IN ALL PETROL ENGINE PASSENGER CARS.
- MEETS API SG/CD, MIL-L-46152D & E-PL 3/ E-DL 2 OF IS:13656:1993
- RECOMMENDED AS ENGINE OIL FOR ALL PASSENGER CARS RUNNING ON PETROL.
 - OUTSTANDING ENGINE CLEANLINESS & ENHANCED ENGINE LIFE
 - EXCELLENT LUBRICATION OVER A WIDE TEMPERATURE RANGE
 - **o** IMPROVED FUEL ECONOMY
 - COMPATIBLE WITH CATALYTIC CONVERTER

KINEMATIC VISCOSITY cst @ 100C	14-16
VISCOSITY INDEX,MIN	120
FLASH POINT, (COC) C,MIN	200
POUR POINT, C , MAX	-24
SULPHATED ASH,%WT,MAX	1.03
TBN ,mgKOH/g,MIN	6.5
COLOUR	ORANGE







HP RACER 2 LOW SMOKE

- HP RACER 2 LOW SMOKE IS SUPERIOR GRADE TWO-STROKE OIL FORMULATED WITH PART SYNTHETIC BASE, FORTIFIED WITH FINELY BALANCED ADDITIVES AND CONTAINS EXCELLENT SOLVENT
- MEETS API TC , JASO M-345:FC (THE PRODUCT IS ON FILE WITH JALOS), GLOBAL EGC
- RECOMMENDED FOR USE IN ALL 2 STROKE PETROL ENGINES
 - ENVIRONMENT FRIENDLY WITH VERY LOW VISIBLE SMOKE EMISSION
 - MINIMUM DEPOSIT FORMATION & PRE IGNITION
 - QUICK START
 - IDEAL FOR MODERN ENGINES WITH OIL INJECTION SYSTEMS AS WELL AS CONVENTIONAL ENGINES

TBN mg KOH / g min	1.9
SULPHATED ASH % WT	0.094
KINEMATIC VISCOSITY @ 40 deg C	45-65
KINEMATIC VISCOSITY cst @ 100 deg C	6.5
FLASH POINT, (COC) C,MIN	70
POUR POINT, C , MAX	-15
COLOUR	ORANGE

APPROVED BY : M/s ESCORTS YAMAHA MOTOR LTD. M/s LML & OTHER TWO STROKE, 2 WHEELER OEMS







HP SUNDARI

- HP SUNDARI IS PREMIUM QUALITY SEMI-SYNTHETIC LOW SMOKE ENGINE OIL FOR THREE WHEELERS.
- MEETS APITC&JASO M-345:FC
- RECOMMENDED FOR USE IN ALL 2-STROKE PETROL ENGINES
 - SPECIAL ENGINE CARE
 - FUEL ECONOMY
 - LOW SMOKE
 - OPTIMUMVISCOSITY

KINEMATIC VISCOSITY cst @ 100C	11-14
FLASH POINT, (COC) C,MIN	70
POUR POINT, C, MAX	-15
COLOUR	ORANGE







HP RACER 4

- MULTIPURPOSE ENGINE OIL FOR LUBRICATION OF ENGINE,GEAR BOX & WET CLUTCHES IN 4-STROKE TWO WHEELERS
- MEETS API SG AND JASO T903:MA SPECIFICATIONS (THE PRODUCT IS ON FILE WITH JALOS)
- RECOMMENDED FOR USE IN ALL 4 STROKE MOTORCYCLES, SCOOTERS, MOPEDS & SCOOTTERETES
 - OPTIMISED CO-EFFICIENT OF FRICTION
 - EXCELLENT OXIDATION STABILITY
 - SLUDGE & VARNISH CONTROL
 - GEAR ANTIWEAR & EXTREME PRESSURE PROPERTIES

	20W 40
KINEMATIC VISCOSITY cst @ 100C	14.5-15.5
VISCOSITY INDEX,MIN	110
FLASH POINT, (COC) C,MIN	200
POUR POINT, C, MAX	-21
SULPHATED ASH,%WT,MAX	0.82
TBN ,mgKOH/g,MIN	5.9

APPROVED BY: M/s ESCORTS YAMAHA MOTOR LTD. M/s ROYAL ENFIELD MOTORS M/s BAJAJ AUTO

> PRESS TO RETURN







HP RAIL ROAD OIL 817M

- HP RAIL ROAD OIL 817M IS GENERATION 5 ZINC FREE MULTIGRADE CRANKCASE OIL FOR ALL EMD LOCOMOTIVES
- MEETS API CF & LMOA GENERATION-V
- RECOMMENDED FOR USE IN EMD LOCOMOTIVES OPERATING IN INDIAN RAILWAYS
 - FUEL ECONOMY
 - REDUCED LUBE OIL CONSUMPTION
 - **o** CLEANER ENGINES & LESSER WEAR

KINEMATIC VISCOSITY cst @ 100C	15.5-16.3
VISCOSITY INDEX,MIN	110
FLASH POINT, (COC) C,MIN	200
POUR POINT, C , MAX	-21
TBN , mg KOH/g, MIN	17
ZINC, PPM, MAX	10

APPROVED BY INDIAN RAILWAYS







HP RAIL ROAD OIL 813M

- HP RAIL ROAD OIL 813M IS A GENERATION 5 ZINC FREE MULTIGRADE CRANKCASE OIL FOR ALL LOCOMOTIVES INCLUDING EMD, GE & ALCO
- MEETS API CF & LMOA GENERATION-V
- RECOMMENDED FOR USE IN ALL TYPE S OF LOCOMOTIVES OPERATING IN INDIAN RAILWAYS. ABSENCE OF ZINC IN THE OIL MAKES IT IDEAL FOR USE IN DIESEL LOCOMOTIVES FITTED WITH SILVER COMPONENTS
 - FUEL ECONOMY
 - REDUCED LUBE OIL CONSUMPTION
 - **o** CLEANER ENGINES & LESSER WEAR

KINEMATIC VISCOSITY cst @ 100C	15.5-16.3
VISCOSITY INDEX,MIN	110
FLASH POINT, (COC) C,MIN	200
POUR POINT, C , MAX	-21
SULPHATED ASH % WT.,MAX	1.63
TBN ,mgKOH/g,MIN	13
ZINC, PPM, MAX	10
FOAM TENDENCY / STABILITY, ml,MAX	
SEQUENCE –I	25/NIL
SEQUENCE –II	150/NIL
SEQUENCE-III	25/NIL







HP RAIL ROAD OIL 613

- HP RAIL ROAD OIL 613 IS A GENERATION -4 CRANKCASE OIL DEVELOPED TO MEET THE REQUIREMENTS OF ALCO /DLW LOCOMOTIVES
- MEETS API CD ,US MILITARY MIL-L-2104C, LMOA GENERATION-IV & E-DL 2 OF IS 13656 SPECIFICATIONS.
- RECOMMENDED FOR USE IN ALCO/ DLW LOCOMOTIVES OPERATING IN INDIAN RAILWAYS. IT IS HOWEVER NOT RECOMMENDED FOR USE IN LOCOMOTIVES FITTED WITH SILVER LINED COMPONENTS.
 - PROTECTION AGAINST DEPOSITS AND ENGINE WEAR.
 - ENGINE CLEANLINESS
 - $\circ~$ EXCELLENT CONTROL ON CORROSIVE WEAR .

KINEMATIC VISCOSITY cst @ 100C	15.8-16.2
VISCOSITY INDEX,MIN	90
FLASH POINT, (COC) C,MIN	225
POUR POINT, C , MAX	-6
SULPHATED ASH% WT , MAX	1.9
TBN ,mgKOH/g,MIN	9

APPROVED BY :

RDSO FOR USE IN ALCO / DLW LOCOMOTIVES OPERATING IN INDIAN RAILWAYS







HP RAIL ROAD OIL 713

- HP RAIL ROAD OIL 713 IS A GENERATION -4 ZINC FREECRANKCASE OIL FOR ALL LOCOMOTIVES INCLUDING EMD,GE & ALCO
- MEETS API CD , US MILITARY MIL-L-45199B, LMOA GENERATION-IV & E-DL 2 OF IS:13656-1993 SPECIFICATIONS
- RECOMMENDED FOR USE IN ALL TYPES OF LOCOMOTIVES OPERATING IN INDIAN RAILWAYS. ABSENSE OF ZINC IN THE OIL MAKES IT IDEAL FOR USE IN DIESEL LOCOMOTIVES FITTED WITH SILVER COMPONENTS
 - **RESISTANCE TO DEPOSITS ON ENGINE PARTS**
 - EXCEPTIONAL THERMAL AND OXIDATION STABILITY
 - ABSOLUTE CONTROL OF CORROSIVE WEAR

KINEMATIC VISCOSITY cst @ 100C	15.8-16.2
VISCOSITY INDEX,MIN	90
FLASH POINT, (COC) C,MIN	225
POUR POINT, C , MAX	-6
SULPHATED ASH % WT.,MAX	1.8
TBN ,mgKOH/g,MIN	12.9
ZINC, PPM, MAX	10

APPROVED BY :

RDSO FOR USE IN ALL TYPES OF LOCOMOTIVES OPERATING IN INDIAN RAILWAYS L&T FOR DETROIT DG SETS

> PRESS TO RETURN





HP AUTOLUBE 30,40

- HP AUTOLUBE 30,40 ARE SPECIALLY DEVELOPED ENGINE LUBRICANT CUM RUNNING IN OILS CONTAINING ADDITIONAL CORROSION PROTECTION
- RECOMMENDED FOR ALL ENGINES AS RUNNING OIL, PRESERVATIVES & FIRST FILL OILS
 - PROVIDES PROPER RUNNING-IN OF ENGINE
 - PROTECTS ENGINE COMPONENTS AGAINST RUST AND CORROSION
 - CONTAINS REQUIRED DETERGENCY & DISPERSANCY
 - MEETS MIL-L-2104 B SPECIFICATIONS WITH ADDITIONAL CORROSION PROTECTION

	30	40
KINEMATIC VISCOSITY cst @ 100C	9.6-12.4	14-16
VISCOSITY INDEX,MIN	90	90
FLASH POINT, (COC) C,MIN	210	210
POUR POINT, C, MAX	0	0
SULPHATED ASH,%WT,MAX	1.2	1.2
TBN ,mgKOH/g,MIN	7.5	7.5
CORROSION Cu STRIP @ 100 C FOR 3Hrs, MAX	1	1
DB CORROSION TEST		
CORROSION RESISTANCE NUMBER, MIN	90	90
STAINING/DISCOLOURATION,MAX	NONE	NONE

APPROVED BY : M/s TELCO M/s HM M/s GUJRAT FORGINGS

> PRESS TO RETURN





HP AUTOPRUN T 120

- HP AUTOPRUN T120 IS A SPECIALLY DEVELOPED TRIPLE ACTION OIL FOR USE IN PETROL AND DIESEL ENGINES DURING RUNNING IN OPERATION, TRANSPORTATION, STORAGE AND DURING NORMAL RUNNING
- RECOMMENDED FOR ALL ENGINES AS RUNNING IN OIL, PRESERVATIVE & FIRST FILL OILS
 - **o PROVIDES PROPER RUNNING –IN**
 - PROTECTS ENGINES COMPONENTS AGAINST RUST AND CORROSION DURING TRANSPORTATION OR LONG STORAGE EVEN UNDER ADVERSE CONDITIONS SUCH AS DURING SEA VOYAGE
 - CONTAINS REQUIRED DETERGENCY & DISPERSANCY
 - MEETS MIL-L-2104 A WITH ADDITIONAL CORROSION PROTECTION

KINEMATIC VISCOSITY cst @ 40C	108-120
KINEMATIC VISCOSITY cst @ 100C	9.6-12.4
VISCOSITY INDEX,MIN	90
FLASH POINT, (COC) C,MIN	210
POUR POINT, C , MAX	0
SULPHATED ASH,%WT,MAX	2.6
TBN ,mgKOH/g,MIN	16
DB CORROSION TEST	
CORROSION RESISTANCE NUMBER, MIN	90
STAINING DISCOLOURATION, MAX	NONE

APPROVED BY: M/s GUJRAT FORGINGS M/s HM

FOR FURTHER INFORMATION PLEASE CONTACT OUR NEAREST REGIONAL OFFICE

PRESS TO RETURN





HP NATURAL GAS ENGINE OIL L 40 & L15W 40

- HP NATURAL GAS ENGINE OIL L 40 AND L 15 W 40 ARE LOW ASH NATURAL GAS ENGINE OIL FOR STATIONARY APPLICATIONS
- RECOMMENDED FOR STATIONARY DG SETS RUNNING ON NATURAL GAS EQUIPPED WITH 4 STROKE ENGINES REQUIRING LOW ASH (0.1% WT TO 0.6% WT.)
- RECOMMENDED FOR CATERPILLAR ENGINES RUNNING ON NATURAL GAS
 - **o** GOOD CONTROL ON OXIDATION & NITRATION
 - EXCEPTIONAL CONTROL ON DEPOSITS & WEAR
 - OPTIMISED LUBRICANT ASH LEVEL
- L 15 W 40 RECOMMENDED FOR CUMMINS ENGINES RUNNING ON NATURAL GAS

	L 40	L 15 W- 40
KINEMATIC VISCOSITY cSt @ 40 deg C	140	116
KINEMATIC VISCOSITY cSt @ 100 deg C	14.0-16.0	14.0-16.0
VISCOSITY INDEX,MIN	95	120
FLASH POINT, (COC) C,MIN	215	190
POUR POINT, C , MAX	-6	-24
SULPHATED ASH,%WT,MAX	0.5	0.5
TBN ,mgKOH/g,MIN	5	5

GAS ENGINES HAVE VERY WELL DEFINED LUBRICANT NEEDS. MOST OEMs SPECIFY NARROW BANDS OF SULPHATED ASH, WHICH IS REQUIRED TO OPTIMISE PERFORMANCE FOR PARTICULAR ENGINE. MULTIGRADING PROVIDES THE LUBRICANT WITH ADDITIONAL PROPERTIES, WHICH HELP IN MAINTAINING PERFORMANCE AT VARYING TEMPERATURES

> PRESS TO RETURN





HP NATURAL GAS ENGINE OIL A 40

- HP NATURAL GAS ENGINE OIL A 40 IS ASHLESS NATURAL GAS ENGINE OIL FOR STATIONARY APPLICATION
- MEETS API CF
- RECOMMENDED FOR STATIONARY DG SETS RUNNING ON NATURAL GAS EQUIPPED WITH 2 STROKE ENGINES REQUIRING ASHLESS PRODUCT.
- RECOMMENDED FOR COOPER BESSEMER STATIONARY ENGINES
 - $\circ~$ GOOD CONTROL ON OXIDATION & NITRATION
 - EXCEPTIONAL CONTROL ON DEPOSITS & WEAR

KINEMATIC VISCOSITY cst @ 100 C	13.5-16.0
VISCOSITY INDEX,MIN	90
FLASH POINT, (COC) C,MIN	215
POUR POINT, C , MAX	-6
SULPHATED ASH,%WT,MAX	0.1
TBN ,mgKOH/g,MIN	1.5

MOST OF 2-STROKE ENGINE DESIGN INHERENTLY RESULT IN ASH AND DEPOSITS FORMING AT VARIOUS PARTS. THE USE OF ASHLESS TYPE OILS REDUCES THE LIKELY HOOD OF THESE DEPOSITS FROM FORMING

PRESS TO RETURN





HP NATURAL GAS ENGINE OIL M 40

- HP NATURAL GAS ENGINE OIL M 40 IS MID ASH NATURAL GAS ENGINE OIL FOR STATIONARY APPLICATION
- OIL MEETS API-CF
- RECOMMENDED FOR STATIONARY DG SETS RUNNING ON SOUR GAS (LANDFILL & SEWAGE) REQUIRING MID ASH (0.6% WT TO 1% WT.)
- ALSO RECOMMENDED FOR SUPERIOR & LEAN BURN WAUKESHA ENGINES
 - GOOD CONTROL ON OXIDATION & NITRATION
 - **EXCEPTIONAL CONTROL ON DEPOSITS & WEAR**

KINEMATIC VISCOSITY cst @ 100 C	13.5-16.0
VISCOSITY INDEX,MIN	90
FLASH POINT, (COC) C,MIN	215
POUR POINT, C , MAX	-6
SULPHATED ASH,%WT,MAX	0.6-1.0
TBN ,mgKOH/g,MIN	7.5

ENGINES RUNNING ON SOUR GAS REQUIRE A HIGH TBN , BECAUSE SOUR GAS ON COMBUSTION PRODUCE STRON ACIDS







HP GEAR OIL ST 90,140

- HP GEAR OIL ST ARE STRAGIHT MINERAL AUTOMOTIVE TRANSMISSION AND DIFFERENTIAL LUBRICANTS DESIGNED FOR NON EP GEAR LUBRICATION
- MEETS IS1277:1987
- APPLICATION AREAS ARE HYPOID GEARS & MANUAL TRANSMISSIONS OF AUTOMOBILES REQUIRING THIS TYPE OF NON EP GEAR OILS
 - **o** MODERATE DUTY AUTOMOTIVE GEAR OILS
 - **o PROVIDED EFFECTIVE PROTECTION**

	90	140
KINEMATIC VISCOSITY cst @ 100 C	16.5-17.3	28-33
VISCOSITY INDEX,MIN	90	90
FLASH POINT, (COC) C,MIN	180	190
POUR POINT, C , MAX	-9	-3

PRODUCT IS BEING PHASED OUT

PRESS TO RETURN





HP GEAR OIL EP 80W, 90,140

- HP GEAR OIL EP ARE MULTIPURPOSE GEAR OILS CONTAINING EXTREME PRESSURE ADDITIVES FOR MODERATE SERVICE CONDITIONS
- MEETS API GL-4, MIL-L-2105 & EP TYPE GL-4 LEVEL OF IS:1118:1992 SPECIFICATIONS

• APPLICATION AREAS ARE MANUAL TRANSMISSIONS OF AUTOMOBILES REQUIRING THIS TYPE OF EXTREME PRESSURE OILS

- EXCELLENT THERMAL & CHEMICAL STABILITY
- PROTECTION AGAINST RUST AND CORROSION ENSURING LONGER TROUBLE FREE PROTECTION

	80W	90	140
KINEMATIC VISCOSITY cst @ 100 C	11-12.3	14.5-17.3	28-33
VISCOSITY INDEX,MIN	90	90	90
FLASH POINT, (COC) C,MIN	165	180	190
POUR POINT, C , MAX	-27	-9	-3
CORROSION COPPER STRIP			
AT 121 C FOR 3 HRS MAX.	2	2	2
CHANNEL POINT MAX	-35	-18	-7

APPROVED BY: M/s VOLTAS LTD.,M/s BEML , M/s TELCO M/s HMT , M.s ASHOK LEYLAND, M/s PUNJAB TRACTORS M/s HINDUSTAN MOTORS, M/s EICHER M/s ECEL,M/s ESCORTS M/s BAJAJ TEMPO

> PRESS TO RETURN





HP LAAL GHODA GEAR OIL EP 90

- HP LAAL GHODA GEAR OIL EP IS MULTIPURPOSE GEAR OIL CONTAINING EXTREME PRESSURE ADDITIVES FOR MODERATE SERVICE CONDITION
- MEETS API GL -4 , MIL L 2105 & EP TYPE GL 4 LEVEL OF IS 1118
- APPLICATION AREAS ARE MANUAL TRANSMISSIONS OF AUTOMOBILES REQUIRING THIS TYPE OF EXTREME PRESSURE OILS.
 - EXCELLENT THERMAL & CHEMICAL STABILITY
 - PROTECTION AGAINST RUST & CORROSION ENSURING LONGER TROUBLE FREE PROTECTION

KINEMATIC VISCOSITY, CST. @ 100°C	16.5 -17.3
VISCOSITY INDEX, MIN	90
FLASH POINT, (COC), °C, MIN	180
POUR POINT, °C, MAX	- 9
CORROSION COPPER STRIP AT 121 °C,	
FOR 3 HOURS , MAX	2
CHANNEL POINT	-18

PRODUCT IN ECONOMY RANGE.







HP GEAR OIL EP 80W - 90

- HP GEAR OIL EP 80W 90 IS MULTIGRADE GEAR OIL CONTAINING EXTREME PRESSURE ADDITIVES FOR MODERATE CONDITION SERVICE
- MEETS API GL -4 , MIL L 2105 AND EP TYPE GL 4 LEVEL OF IS 1118
- APPLICATION AREAS ARE SYNCHROMESH TRANSMISSIONS AND MANUAL TRANSMISSIONS OF AUTOMOBILES.
 - EXCELLENT THERMAL & CHEMICAL STABILITY
 - PROTECTION AGAINST RUST & CORROSION ENSURING LONGER TROUBLE FREE PROTECTION

KINEMATIC VISCOSITY, CST. @ 100°C	13.5 -24.0
VISCOSITY INDEX, MIN	90
FLASH POINT, (COC), °C, MIN	165
POUR POINT, °C, MAX	- 21

APPROVED BY M/S DAEWOO.







HP GEAR OIL EP 75W - 90

- HP GEAR OIL EP 75W 90 IS SEMI SYNTHETIC GEAR OIL CONTAINING EXTREME PRESSURE ADDITIVES FOR MODERATE CONDITION SERVICE
- MEETS API GL 4
- APPLICATION AREAS ARE ALL GEAR BOXES WHERE A VISCOMETRIX OF 75W – 90 IS RECOMMENDED IN API GL – 4 CATEGORY.
 - EXCELLENT FUEL ECONOMY
 - ENCHANCED LOW TEMPERATURE PROPERTIES
 - GOOD PERFORMANCE EVEN UNDER EXTREME PRESSURE & VARYING LOAD CONDITIONS

KINEMATIC VISCOSITY, CST. @ 100°C	13.5 -24.0
VISCOSITY INDEX, MIN	146
FLASH POINT, (COC), °C, TYP	218
POUR POINT, °C, TYP	- 45







HP GEAR OIL XP 80W,90, 140

- HP GEAR OIL XP ARE MULTIPURPOSE GEAR OILS CONTAINING EXTREME PRESSURE ADDITIVES FOR MODERATE AS WELL AS SEVERE CONDITION SERVICE
- MEETS API GL 5 ,MIL L 2105 B, EP TYPE GL 5 LEVEL OF IS : 1118
- APPLICATION AREAS ARE HYPOID DIFFERENTIAL & DRIVE AXLES AND MANUAL TRANSMISSIONS OF AUTOMOBILES
 - **EXCELLENT THERMAL & CHEMICAL STABILITY**
 - PROTECTION AGAINST RUST & CORROSION ENSURING LONGER TROUBLE FREE PROTECTION
 - GOOD PERFORMANCE EVEN UNDER EXTREME PRESSURE & VARYING LOAD CONDITIONS

	80W	90	140
KINEMATIC VISCOSITY, CST. @ 40 °C	120	200MIN	480
KINEMATIC VISCOSITY, CST. @ 100 °C	10.5 - 12.5	17-18	28 - 33
VISCOSITY INDEX, MIN	90	90	90
FLASH POINT, (COC), °C, MIN	165	180	190
POUR POINT, °C, MAX	-24	-9	-3
CORROSION, COPPER STRIP, AT 121 °C			
FOR 3 HOURS , MAX	3	3	3

APPROVED BY

- M/S BEML
- M/S SWARAJ MAZDA

M/S HINDUSTAN MOTOR M/S DAEWOO

M/S TELCO M/S MURUTI UDYOG M/S DAEWOO





HP Lubricants - Product Data Sheet HP GEAR OIL XP 85W 140



- HP GEAR OIL XP 85W 140 IS MULTIGRADE OIL CONTAINING EXTREME PRESSURE ADDITIVES FOR HEAVY DUTY SERVICE.
- MEETS API GL 5, MIL L 2105 C/D AND EP TYPE GL 5 LEVEL OF IS : 1118 :1992 SPECIFICATIONS
- RECOMMENDED FOR HYPOID DIFFERENTIAL, REAR AXLE & FINAL DRIVES.
 - EXCELLENT THERMAL & CHEMICAL STABILITY
 - FUEL ECONOMY
 - GOOD PERFORMANCE EVEN UNDER VARYING LOADS

KINEMATIC VISCOSITY, CST. @ 100 °C	26 – 32
VISCOSITY INDEX, MIN	90
FLASH POINT, (COC), °C, MIN	180
POUR POINT, °C, MAX	-12
CORROSION, COPPER STRIP, AT	
121 °C FOR 3 HOURS , MAX	3
CHANNEL POINT DEG C	-20







HP GEAR OIL XP 80W-90

- HP GEAR OIL XP 80W 90 IS MULTIPURPOSE GEAR OIL CONTAINING EXTREME PRESSURE ADDITIVES FOR MODERATE AS WELL AS SERVERE CONDITIONS SERVICE.
- MEETS API GL 5 MIL L 2105 C/D AND EP Type GL – 5 LEVEL OF IS: 1118 : 1992 SPECIFICATIONS
- APPLICATION AREAS ARE HYPOID DIFFERENTIAL & DRIVE AXLES AND MANUAL TRANSMISSIONS OF AUTOMOBILES.
- EXCELLENT THERMAL & CHEMICAL STABILITY
- PROTECTION AGAINST RUST & CORROSION ENSURING LONGER TROUBLE FREE PROTECTION
- GOOD PERFORMANCE EVEN UNDER EXTREME PRESSURE & VARYING LOAD CONDITIONS

KINEMATIC VISCOSITY, cSt. @ 100 °C	13.5 – 24
VISCOSITY INDEX, MIN	90
FLASH POINT, (COC), °C, MIN	165
POUR POINT, °C, MAX	-21
CORROSION, COPPER STRIP,	3
AT 121 °C FOR 3 HOURS , MAX	

APPROVED BY

- M/s ESCORTS
- M/s BEML







HP ATF DEX II

- HP ATF DEX II IS A PREMIUM QUALITY RED COLOURED AUTOMATIC TRANSMISSION FLUID HAVING LOW STATIC FRICTION PROPERTIES.
- RECOMMENDED FOR USE IN AUTOMATIC TRANSMISSIONS & POWER STEERING UNITS OF AUTOMOBILES AND OTHER LCV'S REQUIRING DEXRON II FLUIDS
- MEETS SPECIFICATION 6137 M DEXRON II OF GENERAL MOTORS, USA.
- **o BETTER OXIDATION STABILITY**
- **o** LOW TEMPERATURE VISCOSITY
- LONGER LIFE
- SEAL COMPATIBILITY

KINEMATIC VISCOSITY, CST. @ 100 °C	5.5
FLASH POINT, (COC), °C, MIN	160
FIRE POINT, °C MIN	175
ASH, SULPHATED, % WT,MAX	0.1
COLOUR, VISUAL	RED
FOAMING CHARACTERISTIC , TENDENCY /STABILITY, MAX	
@ 95°C	NO FOAM
@ 135°C	
FOAMING HEIGHT, ML	10
COLLAPSE TIME, SECS	23

APPROVED BY

• M/s DAEWOO

M/s IND AUTO LTD

• M/s ASHOK LEYLAND





HP Lubricants - Product Data Sheet HP AUTOMATIC TRANSMISSION FLUID



- HP AUTOMATIC TRANSMISSION FLUID IS RED COLOURED PREMIUM QUALITY TRANSMISSION OIL.
- RECOMMENDED FOR USE IN AUTOMATIC TRANSMISSION SYNCHROMESH GEAR BOXES OF AUTOMOBILES AND TRUCKS RECOMMENDING GM TYPE A SUFFIX A FLUID.
- MEETS GM TYPE A SUFFIX A & TYPE C 3 OF DETROIT DIESEL ALLISON
- **o** THERMAL & OXIDATION RESISTANCE
- LOW TEMPERATURE FLUIDITY & FOAM CONTROL
- SEAL COMPATIBILITY
- CORROSION & ANTIWEAR PROPERTIES.

KINEMATIC VISCOSITY, CST. @ 100 °C	7
VISCOSITY INDEX, MIN	140
FLASH POINT, (COC), °C, MIN	175
POUR POINT, °C, MAX	-36
CORROSION, COPPER STRIP,	1
AT 100 °C FOR 3 HOURS , MAX	
COLOUR, VISUAL	RED

APPROVED BY

- M/S HINDUSTAN MOTORS M/S BEML
- M/S VOLTAS LTD M/S ASHOK LEYLAND
- M/S BROG WARNER, GERMANY







HP POWERGLIDE C 410 / 430

- HP POWERGLIDE C 410 & 430 ARE ALLISON C 4 SERVICE CLASSIFICATION TRANSMISSION OILS.
- RECOMMENDED FOR ALL COMMERCIAL POWERSHIFT TRANSMISSIONS . INDUSTRIAL TORQUE CONVERTERS & AUTOMATIC TRANSMISSION REQUIRING ALLISION C – 4 OILS
- GOOD HIGH TEMPERATURE PROPERTIES
- **o** SEVERE OXIDATION CONTROL PROPERTIES

	410	430
KINEMATIC VISCOSITY,CST. @ 100°C	4.1 MIN	9.3 – 12.5
VISCOSITY INDEX, MIN	100	95
FLASH POINT, (COC), °C, MIN	160	160
POUR POINT, °C, MAX	- 21	-21
ASH, SULPHATED, % WT, MAX	1.26	1.26
ACIDITY TOTAL, MG KOH/ GM	2.1	2.1
CORROSION, COPPER STRIP, AT 100 °C FOR 3 HOURS , MAX	1	1
TOTAL BASE NUMBER, mg KOH/GM, MIN	7.9	7.9
RUST TEST, 24 HRS WITH SYNTHETIC SEA WATER	PASS	PASS

APPROVED BY

- M/S HM
- M/S BEML
- M/S BRITANNIA ENGINEERING LTD.
- M/S ALLISON TRANSMISSION

PRESS TO RETURN





HP POWERGLIDE C 310 / 330

- HP POWERGLIDE C 310 & 330 ARE ALLISON C 3 SERVICE CLASSIFICATION TRANSMISSION OILS.
- RECOMMENDED FOR ALL COMMERCIAL POWERSHIFT TRANSMISSIONS. INDUSTRIAL TORQUE CONVERTERS & AUTOMATIC TRANSMISSION REQUIRING ALLISION C – 3 OILS
- GOOD HIGH TEMPERATURE PROPERTIES
- **o** SEVERE OXIDATION CONTROL PROPERTIES

	310	330
KINEMATIC VISCOSITY, CST.		
@ 40 °C	31.9	106
@ 100°C	4.1 MIN	9.3 - 12.5
VISCOSITY INDEX, MIN	100	95
FLASH POINT, (COC), °C, MIN	160	160
POUR POINT, °C, MAX	- 21	-21
ASH, SULPHATED, % WT, MAX	1.26	1.26
CORROSION, COPPER STRIP, AT 100 °C FOR 3 HOURS , MAX	1	1

APPROVED BY

- M/S TAFE
- M/S VST TILLERS
- M/S BRITANNIA ENGINEERING LTD.
- M/S ALLISON TRANSMISSION

M/S ECEL M/S HM





HP POWERFLUID LTP 100



- HP POWERFLUID LTP 100 IS A PREMIUM QUALITY ANTI WEAR TYPE HYDRAULIC OIL WITH VERY HIGH SHEAR STABILITY. SPECIALLY DEVELOPED FOR USE IN L & T EARTHMOVING EQUIPMENTS.
- RECOMMENDED FOR ALL MODERN HYDRAULIC SYSTEMS USED IN EARTH MOVING EQUIPMENTS. ALSO RECOMMENDED FOR LOW OPERATING TEMPERATURE CONDITIONS
- MEETS INDEX F REQUIREMENT PART NO Z00032-42 OF L&T
- VERY HIGH VISCOSITY INDEX
- **o VERY LOW POUR POINT**

KINEMATIC VISCOSITY, CST.	
@ 40 °C	100 - 115
@ 100°C	13.5
VISCOSITY INDEX, MIN	120
FLASH POINT, (COC), °C, MIN	200
POUR POINT, °C, MAX	-24
CORROSION, COPPER STRIP,	1B
AT 100 °C FOR 3 HOURS , MAX	
AIR RELEASE VALUE @ 70°C,	7
MINUTES, MAX	
ACIDITY, TOTAL, MG KOH/ GM	1.05
ANILINE POINT, °C	95
DEMULSIBILITY AT 82 °C , 20	40 -40-0
MINUTES, MIN	
FOAM CHARACTERISICS	
TENDENCY / STABILITY, ML , MAX	
SEQUENCE I	30/NIL
SEQUENCE II	30/ NIL
SEQUENCE III	30/NIL

APPROVED BY L & T FOR DETROIT D.G.SETS.







HP POWERFLUID TH 46

- HP POWERFLUID TH 46 IS A PREMIUM QUALITY ANTI WEAR TYPE HYDRAULIC OIL WITH VERY HIGH SHEAR STABILITY. SPECIALLY DEVELOPED FOR USE IN TATA HITACHI EXCAVATORS.
- RECOMMENDED FOR ALL MODERN HYDRAULIC SYSTEMS USED IN EARTH MOVING EQUIPMENTS. ALSO RECOMMENDED FOR LOW OPERATING TEMPERATURE CONDITIONS
- **o VERY HIGH VISCOSITY INDEX**
- VERY LOW POUR POINT

KINEMATIC VISCOSITY, CST.	
@ 40 °C	42 – 50
@ 100°C	7.4
VISCOSITY INDEX, MIN	135
FLASH POINT, (COC), °C, MIN	200
POUR POINT, °C, MAX	-24
CORROSION, COPPER STRIP,	1
AT 100 °C FOR 3 HOURS , MAX	
AIR RELEASE VALUE @ 50°C,	7
MINUTES , MAX	
ANILINE POINT, °C	117
FOAM CHARACTERISTICS	
TENDENCY / STABILITY, ML , MAX	
SEQUENCE I	NIL
SEQUENCE II	NIL
SEQUENCE III	NIL
RUSTING TEST, 24 HRS WITH	PASS
SYNTHETIC SEA WATER	

APPROVED BY M/S TELCO

FOR FURTHER INFORMATION PLEASE CONTACT OUR NEAREST REGIONAL OFFICE

PRESS TO RETURN





HP POWERFLUID P 100

- HP POWERFLUID 100 IS A PREMIUM QUALITY ANTI WEAR TYPE HYDRAULIC OIL WITH VERY HIGH SHEAR STABILITY.
- RECOMMENDED FOR ALL MODERN HYDRAULIC SYSTEMS USED IN EARTH MOVING EQUIPMENTS. ALSO RECOMMENDED FOR LOW OPERATING TEMPERATURE CONDITIONS
- **o VERY HIGH VISCOSITY INDEX**
- VERY LOW POUR POINT

KINEMATIC VISCOSITY, CST.	
@ 40 °C	100 – 115
@ 100°C	14.7
VISCOSITY INDEX, MIN	135
FLASH POINT, (COC), °C, MIN	200
POUR POINT, °C, MAX	-24
CORROSION, COPPER STRIP,	1
AT 100 °C FOR 3 HOURS , MAX	
ACIDITY, TOTAL, MG KOH/ GM	1.5
ANILINE POINT, °C	117
RUST TEST , 24 HRS WITH	PASS
SYNTHETIC WATER	
FOAM CHARACTERISTICS	
FOAM / STABILITY, ML , MAX	
SEQUENCE I	NIL
SEQUENCE II	NIL
SEQUENCE III	NIL







HP THANDA RAJA

- HP THANDA RAJU IS READY TO USE RADIATOR COOLANT WITH ANTI FREEZE & ANTI CORROSIVE PROPERTIES.
- MEETS JIS K 2234 OF 1994 (UNDILUTED)
- RECOMMENDED FOR USE IN COLLING SYSTEM OF ALL DIESEL VEHICLES, PASSENGER CARS, JEEPS, VANS & TEMPOS.
- EFFECITVE COOLING
- GOOD CHEMICAL STABILITY
- EXCELLENT PROTECTION AGAINST RUST & CORROSION.

APPEARANCE	BRIGHT AND
	CLEAR
COLOUR	GREEN
FREEZING TEMP, °C, MAX	-14.5
.PH OF ORIGINAL LIQUOR	7.5 – 9.0
BOILING POINT, °C	103
ORIGINAL LIQUOR, MIN	

HP THANDA RAJA CAN BE DIRECTLY POURED IN THE RADIATORS OF AUTOMOBILES AS IT IS IN READY TO USE FORM.

> PRESS TO RETURN





HP KOOLGARD

- HP KOOLGARD IS AN ENGINE COOLANT WITH ETHYLENE GLYCOL BASE FOR USE IN RADIATORS.
- RECOMMENDED FOR USE IN COOLING SYSTEM OF ALL DIESEL VEHICLES, PASSENGER CARS, JEEPS VANS & TEMPOS.
- HP KOOLGARD IS 100% CONCENTRATED PRODUCT. IT SHOULD BE USED IN DILUTION RATIO OF 20 % TO 50 % WITH WATER OR AS PER VEHICLE MANUFACTURES RECOMMENDATION.
- **o** EASY MISCIBILITY WITH WATER
- EFFECTIVE COOLING
- GOOD CHEMICAL STABILITY
- HIGH BOILING POINT & LOW FREEZING POINT
- PROTECT RADIATOR AGAINST RUST & CORROSION.

APPEARANCE	BRIGHT AND CLEAR
COLOUR	GREEN
FREEZING TEMP, °C, MAX	
50 VOL % TEMP WATER SOLN	- 34
30 % VOL % WATER SOLN	- 14.5
.PH OF 30 VOL % WATER SOLN	7.0 – 9
BOILING POINT, °C	155
ORIGINAL LIQUOR, MIN	

APPROVED BY

- M/S TELCO
- M/S DAEWOO
- M/S IND AUTO LTD

FOR FURTHER INFORMATION PLEASE CONTACT OUR NEAREST REGIONAL OFFICE

PRESS TO RETURN





HP KOOLGARD P

- HP KOOLGARD P IS ABORATE SILICATE, PHOSPHATE AND AMINE FREE PREMIUM COOLANT.
- MEETS JIS K 2234 OF 1994
- RECOMMENDED FOR USE IN RADIATORS OF ALL DIESEL VEHICLES, PASSENGER CARS, JEEPS, VANS & TEMPOS.
- HP KOOLGARD P IS A COOLANT CONCENTRATED, WHICH IS TO BE USED IN DILUTION RATIO OF 20 % TO 50 % WITH WATER OR AS PER VEHICLE MANUFACTURES RECOMMENDATION.
- EASY MISCIBILITY WITH WATER
- EFFECTIVE COOLING
- GOOD CHEMICAL STABILITY
- HIGH BOILING POINT & LOW FREEZING POINT
- PROTECT RADIATOR AGAINST RUST & CORROSION.
- ENVIRONMENT FRIENDLY COOLANT

APPEARANCE	BRIGHT AND CLEAR
COLOUR	AQUA BLUE
FREEZING TEMP, °C, MAX	
50 VOL % TEMP WATER SOLN	- 34
30 % VOL % WATER SOLN	- 14.5
.PH OF 30 VOL % WATER SOLN	7.8 – 8.7
BOILING POINT, °C	155
ORIGINAL LIQUOR, MIN	







HP RADIATOR PROTECTOR

- HP RADIATOR PROTECTOR IS A LIQUID RUST PREVENTIVE AND DESEALING AGENT.
- RECOMMENDED FOR ALL AUTOMOTIVE & INDUSTRIAL RADIATORS.
- **o GOOD ANTI RUST PROPERTIES**
- EFFECTIVE SEALANT

APPEARANCE	CLEAR
COLOUR	ORANGISH YELLOW LIQUID
.PH OF PRODUCT	8.5 – 9.5
DENSITY @ 29 °C	1.16

APPROVED BY

- M/S TELCO
- M/S BAJAJ TEMPO







<u>HP SUPER DUTY BRAKE FLUID DOT – 3</u>

- HP SUPER DUTY BRAKE FLUID DOT 3 IS A SUPERIOR QUALITY SYNTHETIC FLUID MEANT FOR THE HYDRAULIC BRAKES OF AUTOMOBILES
- MEETS US DEPT. OF TRANSPORTATION'S STRINGENT SPECIFICATION FMVSS 116 DOT 3. IT ALSO MEETS IS : 8654 - 1986 & SAVE J1703 F SPECIFICATIONS.
- RECOMMENDED FOR ALL AUTOMOBILES HAVING HYDRAULIC BRAKES
 - **o** EXCEPTIONAL THERMAL STABILITY
 - **o EXCELLENT CHEMICAL STABILITY**
 - **o GOOD WATER TOLERANCE**
 - **o** GOOD FLUIDITY AT LOW TEMPERATURES

KINEMATIC VISCOSITY, CST.	
@ - 40 °C	1500 MAX
@ 100°C	1.5 MIN
EQUILIBRIUM REFLUX B.P °C, MIN	210
WET E. REFLUX B.P °C MIN	140
.PH	7.0 – 11.5
COLOUR	RED

APPROVED BY

M/S TELCO M/S SWARAJ MAZDA M/S IND AUTO LTD M/S HMT M/S HM M/S ASHOK LEYLAND

M/S DAEWOO M/S VOLTAS LTD M/S BEML M/S BAJAJ TEMPO M/S VST TILLERS M/S TIL LTD

> PRESS TO RETURN







HP SUPER DUTY BRAKE FLUID DOT - 4

- HP SUPER DUTY BRAKE FLUID DOT 4 IS A SUPERIOR QUALITY SYNTHETIC FLUID MEANT FOR THE HYDRAULIC BRAKES OF AUTOMOBILES
- MEETS US DEPT. OF TRANSPORTATION'S STRINGENT SPECIFICATION FMVSS 116 DOT 4. IT ALSO MEETS IS : 8654 – 1986 & SAVE J1703 F SPECIFICATIONS.
- RECOMMENDED FOR ALL AUTOMOBILES HAVING HYDRAULIC BRAKES
 - **o** EXCEPTIONAL THERMAL STABILITY
 - EXCELLENT CHEMICAL STABILITY
 - GOOD WATER TOLERANCE
 - GOOD FLUIDITY AT LOW TEMPERATURES

KINEMATIC VISCOSITY, CST.	
@ - 40 °C	1800 MAX
@ 100°C	1.5 MIN
EQUILIBRIUM REFLUX B.P °C, MIN	230
WET E. REFLUX B.P °C MIN	155
.PH	7.0 – 11.5
COLOUR	RED







HP SHOCK ABSORBER OIL LIGHT, HEAVY

- HP SHOCK ABSORBER OIL LIGHT, HEAVY; ARE SHOCK ABSORBER OILS WITH EXCELLENT DAMPING EFFECT.
- RECOMMENDED FOR FACTORY FILL SEALED FOR LIFE SHOCK ABSORBERS.
 - EXCELLENT CHEMICAL STABILITY
 - EXCELLENT SEAL COMPATIBILITY
 - LOW POUR POINT
 - **o** YEAR ROUND USE IN ALL WEATHER CONDITIONS

	LIGHT	HEAVY
KINEMATIC VISCOSITY, CST		
@ 40 °C	11 – 12.5	18.1 – 21.3
@ 100°C	2.85	3.3 MIN
VISCOSITY INDEX, MIN	45	45
FLASH POINT, (COC), °C, MIN	145	160
POUR POINT, °C, MAX	- 40	-37
ANILINE POINT, °C	71 - 82	71 – 82
SAPONIFICATION NO,	5.5 - 7.0	5.5 - 7.0
MG KOH/G		







HP SHOCK ABSORBER OIL AW

- HP SHOCK ABSORBER OIL AW IS SHOCK ABSORBER OIL WITH EXCELLENT DAMPING EFFECT.
- THIS PRODUCT IS SPECIALLY DEVELOPED FOR ALL WEATHER PERFORMANCE
 - **o EXCELLENT CHEMICAL STABILITY**
 - **o EXCELLENT SEAL COMPATIBILITY**
 - **o** LOW POUR POINT
 - YEAR ROUND USE IN ALL WEATHER CONDITIONS

KINEMATIC VISCOSITY, CST	AW
@ 40 °C	11.5 – 13.1
@ 100°C	2.8 MIN
VISCOSITY INDEX , MIN	45
FLASH POINT, (COC), °C, MIN	149
POUR POINT, °C, MAX	- 45
ANILINE POINT, °C	74 – 82
SAPONIFICATION NO,	3.5 – 7.0
MG KOH/G	
COLOUR	ORANGE

APPROVED BY M/S GABRIEL







HP SHOCK ABSORBER OIL TELE

- HP SHOCK ABSORBER OIL TELE IS SHOCK ABSORBER OIL WITH EXCELLENT DAMPING EFFECT.
- RECOMMENDED FOR TELESCOPIC SHOCK ABSORBERS. SPECIALLY DEVELOPED FOR M/S ESCORTS
 - **EXCELLENT CHEMICAL STABILITY**
 - **o EXCELLENT SEAL COMPATIBILITY**
 - LOW POUR POINT
 - YEAR ROUND USE IN ALL WEATHER CONDITIONS

KINEMATIC VISCOSITY, CST	
@ 40 °C	35 – 40
@ 100°C	5.75 MIN
VISCOSITY INDEX, MIN	100
FLASH POINT, (COC), °C, MIN	200
POUR POINT, °C, MAX	- 21
ANILINE POINT, °C	95 MIN
SAPONIFICATION NO,	5.0 - 6.0
MG KOH/G	

APPROVED BY M/S ESCORTS M/S ENDURANCE SYSTEMS LTD







HP SHOCK ABSORBER OIL GB

- HP SHOCK ABSORBER OIL GB IS SHOCK ABSORBER OIL WITH EXCELLENT DAMPING EFFECT.
- THIS PRODUCT IS SPECIALLY DEVELOPED FOR M/S GABRIEL
 - EXCELLENT CHEMICAL STABILITY
 - EXCELLENT SEAL COMPATIBILITY
 - **o** LOW POUR POINT
 - YEAR ROUND USE IN ALL WEATHER CONDITIONS

KINEMATIC VISCOSITY, CST	
@ 40 °C	11.5 – 13.1
@ 100°C	2.8 MIN
VISCOSITY INDEX, MIN	45
FLASH POINT, (COC), °C, MIN	149
POUR POINT, °C, MAX	- 36
ANILINE POINT, °C	74 – 82
SAPONIFICATION NO,	3.5 - 7.0
MG KOH/G	

APPROVED BY M/S GABRIEL







HP CHASSIS GREASE

- HP CHASSIS GREASE IS A CALCIUM SOAP GREASE
- DESIGNED FOR GENERAL CHASSIS LUBRICATION. ALSO RECOMMENDED FOR THE LUBRICATION OF TRACK ROLLERS AND IDLERS OF CERTAIN CRAWLER TYPE TRACTORS.
- EXCELLENT WATER RESISTANCE
- LASTING QUALITIES IN SPRING SHACKLES AND STEERING CONNECTIONS.
- $\circ~$ ACTS AS PROTECTIVE LAYER ON EXPOSED PARTS .
- CLINGS TO BEARING SURFACES.

APPEARANCE	BRIGHT, SHINY AND TACKY
CONSISTENCY OF THE GREASE,	
A 25 ± 0.5 °C, 0.1 MM UNITS	
WORKED, 60 STROKES MIN	290
MAX	320
DROPPING POINT, °C MIN	90
FREE ALKALINITY, AS CA (OH)2,	0.15
% WT, MAX	
FREE ACIDITY, AS,	
OLEIC ACID, % WT	0.15

APPROVED BY M/S SWARAJ MAZDA

> PRESS TO RETURN



HP WHEEL BEARING GREASE

- HP WHEEL BEARING GREASE IS A SODIUM SOAP GREASE
- MEETS IS : 10647 : 1988
- RECOMMENDED FOR LUBRICATION OF UNIVERSAL JOINTS, WHEEL BEARINGS, HIGH TEMPERATURE CLUTCH RELEASE, GENERATOR AND FAN BEARINGS.
 - TROUBLE FREE LONG SERVICE
 - GOOD STRUCTURAL STABILITY UNDER HIGH TEMPERATURE OR CENTRIFUGAL FORCE
 - EASILY PUMPABLE & DO NOT CHANNEL WHEN COLD

APPEARANCE	SMOOTH AND HOMOGENEOUS
CONSISTENCY OF THE GREASE,	
A 25 ± 0.5 °C, 0.1 MM UNITS	
UN WORKED, 60 STROKES MIN	240
MAX	280
WORKED, 60 STROKES MIN	250
MAX	280
DROPPING POINT, °C MIN	178
CORROSION COPPER STRIP, @	
100°C FOR 24 HRS, MAX	NEGATIVE
FREE ALKALINITY, AS CA (OH)2,	
% WT, MAX	0.25
FREE ORGANIC ACIDITY, AS,	
OLEIC ACID, % WT	0.25
TILTED WHEEL BEARING TEST :	
LEAKAGE	5
SLUMP TEST, MAX	PASS
HEAT STABILITY, @ 100°C FOR	
30 HRS, % WT OIL SEPARATED, MAX	6
WATER, % WT MAX	1

PRESS TO RETURN







HP MULTIPURPOSE GREASE 2,3

- HP MULTIPURPOSE GREASE 2,3 ARE PREMIUM QUALITY MULTIPURPOSE AUTOMOTIVE GREASES BASED ON LITHIUM SOAP.
- RECOMMENDED FOR ALL CLASSES OF SERVICE IN AUTOMOTIVE LUBRICATION
- MEETS IS : 12203 : 1987
 - HIGH DROP POINT
 - **o GOOD THERMAL STABILITY**
 - HIGH DEGREE OF RESISTANCE TO OXIDATION
 - **o PROTECTION AGAINST RUSTING & CORROSION**

	2	3
APPEARANCE	SMOOTH AND	SMOOTH AND
	HOMOGENEOUS	SLIGHTLY FIBROUS
CONSISTENCY OF THE GREASE,	SHALL NOT DIFFER FROM	SHALL NOT DIFFER
A 25 ± 0.5 °C, 0.1 MM UNITS	WORKED 60 X BY MORE	FROM WORKED 60 X
UN WORKED,	THEN 10 UNITS	BY MORE THEN 10
		UNITS
WORKED, 60 STROKES MIN	265	220
MAX	280	250
WORKED 10000 STROKES	SHALL NOT DIFFER FROM	SHALL NOT DIFFER
	WORKED 60 X BY MORE	FROM WORKED 60 X
	THAN 30 UNITS	BY MORE THAN 30
		UNITS
DROPPING POINT, °C MIN	180	180
FREE ALKALINITY, AS LIOH,		
% WT, MAX	0.1	0.1
FREE ORGANIC ACIDITY, AS,		
OLEIC ACID, % WT	NIL	NIL
HEAT STABILITY, @ 100°C FOR		
30 HRS, % WT OIL SEPARATED,	5	5
MAX		

APPROVED BY M/S ESCORTS M/S HMT M/S EICHER M/S PUNJAB TRACTORS M/S ASHOK LEYLAND

M/S TAFEM/S SWARAJ MAZDAM/S DAEWOOM/S SIMPSONM/S BAJAJ TEMPOM/S VOLTAS LTDM/S HINDUSTAN MOTORS

PRESS TO RETURN







HP LAAL GHODA AP GREASE

- HP LAAL GHODA AP GREASE PREMIUM QUALITY ALL PURPOSE GREASE BASED ON LITHIUM SOAP
- RECOMMENDED FOR ALL AUTOMOTIVE GREASING PURPOSE
 - EXCELLENT WATER RESISTANCE AND THERMAL STABILITY
 - HIGH DEGREE OF RESISTANCE TO OXIDATION CORROSION
 - DOES NOT SEPARATE UNDER HIGH TEMPERATURE AND CENTIFUGAL FORCE

APPEARANCE	LIGHT YELLOW, SMOOTH & UNIFORM
CONSISTENCY OF THE GREASE,	SHALL NOT DIFFER FROM WORKED
$@~25\pm0.5~^\circ$ C, 0.1 MM UNITS	60 X BY MORE THEN 10 UNITS
UN WORKED,	
WORKED, 60 STROKES MIN	250
MAX	275
WORKED 10000 STROKES	SHALL NOT DIFFER FROM WORKED
	60 X BY MORE THAN 30 UNITS
FREE ALKALINITY, AS LI(OH),	
% WT, MAX	0.1
FREE ORGANIC ACIDITY, AS,	
OLEIC ACID, % WT	NIL
HEAT STABILITY, @ 100°C FOR	
30 HRS, % WT OIL SEPARATED, MAX	5
DROP POINT DEG C	180

PRESS TO RETURN





HP MULTIPURPOSE GREASE 000

• HP MULTIPURPOSE GREASE 000 IS SEMIFLUID GREASE RECOMMENDED FOR SHUTTLE LESS LOOMS, RAIL FLANGE LUBRICATOR AND PRINTING PRESS

PERFORMANCE BENEFITS :

- ENOUGH FLUIDITY REQUIRED FOR THE OPERATION
- **o GOOD THERMAL STABILITY**
- HIGH DEGREE OF RESISTANCE TO OXIDATION
- **o PROTECTION AGAINST RUSTING & CORROSION**

APPEARANCE	SMOOTH &
	UNIFORM
CONSISTENCY OF THE GREASE,	
@25°C WITH 75 GM LOAD	35 – 45
DROPPING POINT, °C, MIN	120
FREE ALKALINITY , AS	
NA (OH) % WT	0.01 – 0.1







HP LITHON RR - 3

- HP LITHON RR 3 IS A PREMIUM QUALITY LITHIUM BASE MULTIPURPOSE GREASE
- MEETS AARM 942 (MODIFIED), IS 7623 : 1985 SPECIFICATION AND WD 17 OF INDIAN RAILWAYS.
- RECOMMENDED FOR USE IN ANTIFRICTION BEARINGS OF RAILWAY AXLE BOXES, HEAVY DUTY WHEEL BEARINGS OF ROAD TRANSPORT VEHICLES, DIESEL/ELECRIC LOCOMOTIVE ROLLER BEARINGS, CONSTRUCTION MACHINERY, CRANES, BLOWERS AND ELECTRIC MOTORS.

PERFORMANCE BENEFITS :

- PROLONGED REGREASING PERIOD
- EXCELLENT SHEAR STABILITY
- ENCHANCED COMPONENT LIFE
- SURFACE ADHESION
- REDUCED DOWN TIME
- NON AGEING
- **o** SUBSTANTIAL SAVING IN MAINTENANCE AND RUNNING COSTS
- EXCELLENT MECHANICAL & STRUCTURAL STABILITY

A DDE A D A NCE	SMOOTH & UNIFODM
APPEARANCE	SMOOTH & UNIFORM
CONSISTENCY OF THE GREASE,	
@ 25 ± 0.5 °C, 0.1 MM UNITS	
WORKED, 60 STROKES MIN	220
MAX	250
WORKED 10000 STROKES	SHALL NOT DIFFER FROM
	WORKED
	60 X BY MORE THAN 25 UNITS
DROPPING POINT, °C, MIN	180
FREE ALKALINITY, AS LIOH,	
% WT, MAX	0.2
FREE ORGANIC ACIDITY, AS,	
OLEIC ACID, % WT	0.3
CORROSION COPPER STRIP, @	
100°C FOR 24 HRS,	NEGATIVE
HEAT STABILITY, @ 100°C FOR	
30 HRS, % WT OIL SEPARATED, MAX	5

APPROVED BY M/S ASHOK LEYLAND M/S SWARAJ MAZDA

HP LTIHON RR 3 IS ALSO APPROVED BY INDIAN RAILWAYS FOR USE IN AUTOMOTIVE AND M & P APPLICATIONS. THE PRODUCT IS UNDER TRIAL IN ROLLING STOCK APPLICATION AT EASTERN RAILWAYS







HP LAAL GHODA TRACTOR OIL 40

- HP LAAL GHODA TRACTOR OIL IS SPECIALLY DEVELOPED ENGINE OIL FOR TRACTORS.
- MEETS APPI CD, US MILITARY MIL L 4599 B & E- DL 2 OF IS : 13656 – 1993 SPECTIFICATIONS.
- RECOMMENDED FOR USE AS CRANKCASE OIL IN ALL TRACTORS.
 - SPECIALLY DESIGNED OIL FOR TRACTOR ENGINES
 - OUTSTANDING VISCOSITY RELATED PERFORMANCE
 - ECONOMICALLY PRICED TO SUIT INDIAN FARMER

KINEMATIC VISCOSITY, CST. @	13.5-16.0
100°C	
VISCOSITY INDEX, MIN	90
FLASH POINT, (COC), °C, MIN	215
POUR POINT, °C, MAX	- 6
SULPHATED ASH, % WT, MAX	1.46
TBN,MG KOH/G, MIN	9

PRODUCT IN ECONOMY RANGE







HYLUBE SUPERTRAK 20W 40

- HYLUBE SUPERTRAK 20 W 40 IS UNIVERSAL TRACTOR OIL FOR ENGINE, TRANSMISSION, FINAL DRIVE AND HYDRAULIC SYSTEM
- MEETS API CD/SE, US MILITARY, MIL –L 2104 C & E DL 2/ E PL 2 OF IS : 13656 1993 SPECIFICATIONS
- SPECIALLY DEVELOPED TO TAKE CARE OF ENTIRE LUBRICATION REQUIREMENTS OF A TRACTOR AVOIDING ANY MIX – UP
 - EXCEPTION THERMAL & OXIDATION STABILITY
 - OUTSTANDING VISCOSITY RELATED PERFORMANCE

KINEMATIC VISCOSITY, CST. @	14 –15
100°C	
VISCOSITY INDEX, MIN	110
FLASH POINT, (COC), °C, MIN	200
POUR POINT, °C, MAX	-21
SULPHATED ASH, % WT, MAX	1.46
TBN,MG KOH/G, MIN	9

APPROVED BY M/S TAFE





HP SUPERTRAN

- HP SUPERTRAN IS A UNIVERSAL TRACTOR TRANSMISSION OIL
- MEETS NEW HOLLAND FORD : M2C 86/ B/ C, M2 C 134 C/D JOHN DEERE : J20 D MASSEY FERGUSON : M35, MS 1204.CMS M-113 (M-1135) APIGL – 4 (LOW SPEED HIGH TROQUE)
- RECOMMENDED FOR USE IN NEW GENERATION TRACTORS AS MULTIPURPOSE OIL FOR TRANSMISSION, HYDRAULIC DIFFERENTIAL, WER – CLUTCHES & BRAKES. ALSO RECOMMENDED FOR USE IN EARTH MOVING & CONSTRUCTION EQUIPMENTS AS AXLE OIL

PERFORMANCE BENEFITS :

- A VERY HIGH LEVEL OF ANTISQUAK PERFORMANCE FOR NOISE FREE WET BRAKE OPERATION
- BALANCED FRICTIONAL PROPERTIES FOR POWER TAKE OFF CLUTCHES AND POWERSHIFT TRANSMISSIONS
- STRONG DRIVELINE PROTECTION FOR MAXIMUM TRANSMISSION LIFE
- A HIGH LEVEL OF CORROSION AND RUST INHIBITION AND WATER TOLERANCE

PRESS TO RETURN

KINEMATIC VISCOSITY, CST. @	10-11.5
100°C	
VISCOSITY INDEX, Typ	125
FLASH POINT, (COC), °C, MIN	200
POUR POINT, °C, MAX	-25
CORROSION, COPPER STRIP	
@ 150°C , 3HRS, TYP	1 A







HP PUMPSET OIL (LG) 20W 40

- HP PUMPSET OIL LG IS A GOOD QUALITY ENGINE OIL SPECIALLY DESIGNED FOR AGRUCULTURAL PUMPSET DIESEL ENGINES.
- MEETS API CC /SC, US MILITARY MIL 2104 B & E – PL1/E –DL 1 OF IS : 13656 – 1993 SPECIFICATIONS
- RECOMMENDED FOR USE IN DIESEL ENGINES EQUIPPED ON AGRICULTURAL PUMPSETS.
 - CLEAN ENGINE WITH LESSER DEPOSITS
 - **o** GOOD ANTI OXIDANT PROPERTIES
 - **o** ANTIWEAR PROPERTIES
 - SUPERIOR LUBRICITY

KINEMATIC VISCOSITY, CST. @ 100°C	13.5 – 16
VISCOSITY INDEX, MIN	110
FLASH POINT, (COC), °C, MIN	200
POUR POINT, °C, MAX	-21
SULPHATED ASH, % WT, MAX	0.8
TBN, MG KOH/G MIN	4.3
COLOUR	RED

PRODUCT IN ECONOMY RANGE







HYLUBE HDX MULTIGRADE 20 W 40

- MULTIRADE ENGINE OILS SPECIALLY DEVELOPED FOR DEFENCE APPLICATIONS
- HYLUBE HDX MULTIGRADE 20 W 40 MEETS API CC/SC, MIL – L 2104 B

KINEMATIC VISCOSITY, CST. @ 100°C	14 – 16
VISCOSITY INDEX, MIN	110
FLASH POINT, (COC), °C, MIN	200
POUR POINT, °C, MAX	-21
TBN, MG KOH/G MIN	4.4

APPROVED BY CQAPP,KANPUR FOR SUPPLIES TO DEFENCE







HYLUBE HDX MULTIGRADE 20 W 50

- MULTIRADE ENGINE OILS SPECIALLY DEVELOPED FOR DEFENCE APPLICATIONS
- HYLUBE HDX MULTIGRADE 20 W 50 MEETS API CC/SC, MIL L 2104 B AND E- DL 1 / E PL 1 OF IS : 13656 : 1993 SPECIFICATIONS

KINEMATIC VISCOSITY, CST. @ 100°C	17 – 19
VISCOSITY INDEX, MIN	110
FLASH POINT, (COC), °C, MIN	200
POUR POINT, °C, MAX	-21
TBN, MG KOH/G MIN	4.05

APPROVED BY : CQAPP, KANPUR FOR SUPPLIES TO DEFENCE







HYLUBE HDX MULTIGRADE 10 W 30

- MULTIRADE ENGINE OILS SPECIALLY DEVELOPED FOR DEFENCE APPLICATION
- HYLUBE HDX MULTIGRADE 10 W 30 MEETS API CC/SC, MIL – L 2104 B AND E- DL – 1 / E – PL 1 OF IS : 13656 : 1993 SPECIFICATIONS

KINEMATIC VISCOSITY, CST. @ 100°C	9.3 – 12.5
VISCOSITY INDEX, MIN	100
FLASH POINT, (COC), °C, MIN	190
POUR POINT, °C, MAX	-27
TBN, MG KOH/G MIN	5.8

APPROVED BY:

CQAPP, KANPUR FOR SUPPLIES TO DEFENCE







HP MILCY SUPER 20 W 40

- HIGH PERFORMANCE MULTIGRADE ENGINE OILS SPECIALLY DEVELOPED FOR DEFENCE APPLICATIONS
- HP MILCY SUPER 20 W 40 MEETS E- DL 3 OF IS : 13656 : 1993 SPECIFICATIONS

KINEMATIC VISCOSITY, CST. @	12.5 - 16.3
100°C	
VISCOSITY INDEX, MIN	95
FLASH POINT, (COC), °C, MIN	210
POUR POINT, °C, MAX	-18
TBN, MG KOH/G MIN	9.24

APPROVED BY CQAPP, KANPUR FOR SUPPLIES TO DEFENCE







HP GEAR OIL XP 80 W 90

- MULTIGRADE GEAR OIL SPECIALLY DEVELOPED FOR DEFENCE APPLICATIONS
- HP GEAR OIL XP 80 W 90 MEETS API GL 5 AND MIL L 2105 D SPECIFICATIONS

KINEMATIC VISCOSITY, CST. @ 100°C	13.5 – 18.3
VISCOSITY INDEX, MIN	90
FLASH POINT, (COC), °C, MIN	165
POUR POINT, °C, MAX	-21

APPROVED BY CQAPP, KANPUR FOR SUPPLIES TO DEFENCE







HP GEAR OIL EP 140

- GEAR OIL SPECIALLY DEVELOPED FOR DEFENCE APPLICATIONS
- HP GEAR OIL EP 140 MEETS E- DL 3 OF IS : 13656 : 1993 SPECIFICATIONS

KINEMATIC VISCOSITY, CST. @ 100°C	24-41
VISCOSITY INDEX, MIN	85
FLASH POINT, (COC), °C, MIN	190
POUR POINT, °C, MAX	-3

APPROVED BY: CQAPP, KANPUR FOR SUPPLIES TO DEFENCE







HP GREASE LG 280

- A HIGH QUALITY GREASE SPECIALLY DEVELOPED FOR DEFENCE APPLICATIONS
- HP GREASE LG 280 MEETS IS : 507 : 1993 SPECIFICATIONS
- MEETS DEFENCE STANDARD P1-17/2 GREASE

APPEARANCE	SMOOTH & UNIFORM
TYPE OF SOAP	CALCIUM
CONSISTENCY OF THE GREASE,	
A 25 ± 0.5 °C, 0.1 MM UNITS	
WORKED, 60 STROKES MIN	265
MAX	295
DROPPING POINT, °C MIN	100
FREE ALKALINITY, AS CA (OH)2,	
% WT, MAX	0.1
FREE ORGANIC ACIDITY, AS,	
OLEIC ACID, % WT	0.4

APPROVED BY CQAPP, KANPUR FOR SUPPLIES TO DEFENCE

> PRESS TO RETURN





HP GREASE SG 240

- A HIGH QUALITY GREASE SPECIALLY DEVELOPED FOR DEFENCE APPLICATIONS
- HP GREASE SG 240 MEETS IS : 10647 : 1983(1998)

APPEARANCE	DARK BROWN IN THIN FILM,
	SMOOTH AND HOMOGENEOUS
TYPE OF SOAP	SODIUM
CONSISTENCY OF THE GREASE,	SHALL NOT DIFFER BY MORE
A 25 ± 0.5 °C, 0.1 MM UNITS	THAN 25 UNITS FROM 60
UN WORKED	STROKES
WORKED, 60 STROKES MIN	250
MAX	280
WORKED, 100000 STROKES	SHALL NOT DIFFER FROM
	WORKED
	60X BY MORE THAN 25 UNITS
DROPPING POINT, °C MIN	180

APPROVED BY CQAPP, KANPUR FOR SUPPLIES TO DEFENCE







HP RACER 2 SM

- SPECIALLY DEVELOPED 2–STROKE ENGINE OIL FOR USE IN SNOW MOBILE RUN BY INDIAN ARMY
- HP RACER 2 SM MEETS API TC & JASO FC SPECIFICATIONS

KINEMATIC	6.86
VISCOSITY,CST.@100°C	
VISCOSITY INDEX, MIN	150
FLASH POINT, (COC), °C, MIN	120
POUR POINT, °C, MAX	-51
TBN, MG KOH/G, MIN	0.47

APPROVED BY

THE PRODUCT IS CLEARED BY CQAPP, KANPUR AND CURRENTLY UNDER TRAIL IN LEH ON SNOW MOBILES







HP LITHON RR 3

- PREMIUM QUALITY GREASE DEVELOPED FOR DEFENCE APPLICATION
- HP LITHON RR 3 MEETS AARM 942 (MODIFIED) SPECIFICATIONS

APPEARANCE	SMOOTH AND UNIFORM
CONSISTENCY OF THE GREASE,	
A 25 ± 0.5 °C, 0.1 MM UNITS	
WORKED, 60 STROKES MIN	220
MAX	250
WORKED, 100000 STROKES	SHALL NOT DIFFER
	FROM WORKED
	60X BY MORE THAN 25
	UNITS
DROPPING POINT, °C MIN	180

APPROVED BY CQAPP, KANPUR FOR SUPPLIES TO DEFENCE







HP SUPER DUTY BRAKE FLUID DOT 3

- HYDRAULIC BRAKE FLUID SPECIALLY DEVELOPED FOR DEFENCE APPLICATION
- HP SUPER DUTY BRAKE FLUID DOT 3 MEETS IS : 8654 : 1986 SPECIFICATIONS

KINEMATIC VISCOSITY, CST.	
@ 40°C	1500MAX
@ 100°C	1.5 MIN
EQUILIBRIUM REFLUX B.P	210
WET E. REFLUX B.P, °C, MIN	140
.PH	7.0 – 11.5
COLOUR	RED

APPROVED BY CQAPP, KANPUR FOR SUPPLIES TO DEFENCE







HP SUPERTRAN

- MULTIPURPOSE TRANSMISSION OIL DEVELOPED FOR DEFENCE APPLICATION
- HP SUPERTRAN MEETS JDM J 20 A/C SPECIFICATIONS

KINEMATIC	9.1 – 9.7
VISCOSITY,CST.@100°C	
VISCOSITY INDEX, MIN	125
FLASH POINT, (COC), °C, MIN	200
POUR POINT, °C, MAX	-37

APPROVED BY CQAPP, KANPUR FOR SUPPLIES TO DEFENCE







TURBINOL 32,46,57,68,77

TURBINOL GRADES ARE PREMIUM QUALITY TURBINE OILS MADE FROM BEST PARAFFINIC BASE STOCKS HAVING EXCELLENT OXIDATION AND CHEMICAL STABILITY. THESE PROPERTIES ARE FURTHER ENHANCED WITH INCORPORATION OF CAREFULLY SELECTED ANTIOXIDANTS, RUST INHIBITORS AND ANTI FOAM AGENTS.

PERFORMANCE BENEFITS:

EXCELLENT DEMULSIBILITY AND QUICK RELEASE OF ENTRAINED AIR MAKING IT A LONG SERVICE OIL. MEETS, IS :1012- 1987 (REAFFIRMED 1993), BS: 489 – 1993 & SIEMENS TLV 9013 04 SPECIFICATIONS. IT ALSO MEETS THE REQUIREMENTS OF BHEL & GE TURBINES.

PROPOSED USAGE :

TURBINOL GRADES ARE RECOMMENDED FOR USE IN ALL TURBINES WITHOUT GEARBOX. THEY ARE SUITABLE FOR LUBRICATION OF PLAIN AS WELL AS JOURNAL TYPE BEARINGS IN THE STEAM, GAS AND HYDRAULIC TURBINES AND CAN BE USED IN HYDRAULIC SYSTEMS REQUIRING VERY LONG LIFE LUBRICANT OF OUTSTANDING PROPERTIES. TURBINOL 77 IS ALSO RECOMMENDED FOR USE IN EXPRESSORS / EXHAUSTORS AND GOVERNORS OF DIESEL LOCOMOTIVES OPERATING IN INDIAN RAILWAYS.

TURBINOL 46, 68 GRADES ARE APPROVED BY BHEL, SIEMENS, DLF IDUSTRIES FOR USE IN THEIR STEAM TURBINES AND APE BELLIS INDIA LTD & TRIVENI ENGINEERING FOR THEIR TURBINES. TURBINOL 68 GRADE IS RECOMMENDED BY GEC ALSTHOM, U.K, TURBINOL 46, 77 GRADES ARE APPROVED BY WORTHINGTON PUMP INDIA LTD, FOR THEIR VERTICAL PUMPS.

CONT...



HP Lubricants - Product Data Sheet TURBINOL XT 32 , XT 46, XT 68

THE EXCELLENCE OF TURBINOL XT GRADES IS THE COMBINED RESULT OF SELECTED STABLE BASE OILS, EFFICIENT REFINING METHODS AND SUPERIOR ADDITIVES. TURBINOL XT GRADES ARE MADE FROM THE FINEST PARFFINIC BASE STOCKS HAVING EXCELLENT OXIDATION AND CHEMICAL STABILITY, FURTHER ENHANCED BY MODERN REFINING TECHNIQUES TO REMOVE UNSUITABLE AND UNDESIRABLE COMPONENTS. THESE OILS CONTAIN ANTI WEAR ADDITIVES, HAVE HIGHER FZG RATING AND ARE SPECIFICALLY FORMULATED TO MEET THE REQUIREMENTS OF GEARED TURBINES.

PERFORMANCE BENEFITS :

TURBINOL XT GRADES PROVIDE FOLLOWING OUTSTANDING ADVANTAGES IN TURBINE LUBRICATION SERVICE.

- SUPERIOR PHYSICAL AND CHEMICAL STABILITY.
- HIGH OXIDATION STABILITY IN PRESENCE OF HEAT, WATER AND IMPURITIES.
- VERY GOOD ANTIWEAR CHARACTERISTICS.
- HIGH RESISTANCE TO CHANGE IN VISCOSITY.
- FULL PROTECTION AGAINST RUSTING
- EXCELLENT DEMULSIBILITY, FOAM RESISTANCE AND TENDENCY TO RELEASE ENTRAINED AIR.

MEET, IS : 1012 – 1987 (REAFFIRMED 1993) AND BROWN BOVERI HTGD 90117 SPECIFICATIONS, SIEMENS TLV 9013 04 SPECIFICATION AND HAVE BEEN RECOMMENDED FOR USE IN SIEMENS TURBOSETS, WITH GEARBOX.

PROPOSED USAGE :

TURBINOL GRADES ARE RECOMMENDED FOR USE IN ALL TURBINES WITH GEAR BOX. APART THE BEARING LUBRICATION AND HYDRAULIC SYSTEM OF STEAM, GAS AND HYDRAULIC TURBINES, THESE OILS ARE FORMULATED TO TAKE CARE OF THE LUBRICATION OF THE GEARBOXES.

CONT...





HP Lubricants - Product Data Sheet TURBINOL XT32, XT 46, XT 68



TURBINOL XT 32 , XT 46 GRADES CARRY THE APPROVAL BHEL & SIEMENS FOR THEIR GEARED TURBOGENERATORS .

PROPERTIES	TURBINOL					TURBINOL XT			
	32	46	57	68	77	32	46	68	
VISCOSITY,CST@ 40°C	28.8-35.2	41.4-50.6	54.2-59.8	64.6-71.4	77-82	29-35	42-50	53-61	
VISCOSITY,INDEX,MIN	100	98	95	95	100	100	98	95	
FLASH POINT ,COC, °C,MIN	215	215	215	215	210	215	215	215	
POUR POINT,°C MAX	(-) 6	(-) 6	(-) 6	(-) 6	(-) 6	(-) 6	(-) 6	(-) 6	
FZG RIG, TEST FAILURE LOAD STAGE, MIN	NA	NA	NA	NA	NA	11	11	11	
TAN, MG KOH/G, MAX	0.15	0.15	0.15	0.15	0.15	0.20	0.20	0.20	
AIR RELEASE VALUE @ 50°C MINUTES, MAX	4	4	4	11	17	4	4	11	

PRESS TO RETURN







HP FILM OIL 46,68,100,150,220,320,460

HP FILM OIL GRADES ARE HIGHLY REFINED MINERAL OILS EXCLUSIVELY DEVELOPED FOR APPLICATION IN OIL FILM BEARINGS OF STEEL PLANTS. THESE OILS ARE BLENDED FROM SOLVENT EXTRACTED, HIGH VISCOSITY INDEX BASE STOCKS.

PERFORMANCE BENEFITS :

EXCELLENT DEMULSIBILITY CHARACTERISTICS. THEY ALSO POSSESS GOOD OXIDATION AND THERMAL STABILITY.

MEET, INTER PLANT STANDARDISATION – STEEL INDUSTRY SPECIFICATIONS (IPSS) 1-09-001-95 (GRADE 1 TO 6) AND IS : 6552-1987

APPLICATION AREAS :

HP FILM OIL GRADES ARE RECOMMENDED FOR USE IN ANTIFRICTION BEARINGS, DRIVE GEAR AND PINION OF STEEL MILLS WHERE OPERATING CONDITION ARE MODERATE. THEY ARE ALSO SUITABLE FOR USE IN CIRCULATION SYSTEMS WHERE OILS WITH HIGH DEMULSIBILITY CHARACTERISTICS ARE REQUIRED.

PROPERTIES			HP FI					
	32	46	68	100	150	220	320	460
VISCOSITY,CST @ 40°C	29-34	42-50	62-74	90-110	140-160	200-246	300-340	420-500
VISCOSITY,INDEX , MIN	90	90	90	90	90	90	90	90
FLASH POINT , COC, °C,MIN	190	190	190	190	190	200	220	240
POUR POINT, °C MAX	(-) 6	(-) 6	(-) 6	(-) 6	(-) 6	(-) 6	-6	-6
TAN, MG KOH/G, MAX	0.1	0.1	0.1	0.1	0.15	0.2	0.2	0.2
DEMULSIBILTY IN 20 MIN.ML	40-37-3 (AT 54°C)	40-37-3 (AT 54°C)	40-37-3 (AT 54°C)	40-37-3 (AT 82°C)	40-37-3 (AT 82°C)	40-37-3 (AT 82°C)	40-37-3 (AT 82°C)	40-37-3 (AT 82°C)

HP FILM OIL 150,220 GRADES ARE APPROVED BY TISCO, JAMSHEDPUR

CONT...



HP Lubricants - Product Data Sheet HP STEEL 257,460,680

HP STEEL GRADES ARE PREMIUM QUALITY HEAVY DUTY BEARING AND CIRCULATING OIL. THEY HAVE HIGH VISCOSITY INDEX WITH SUPERIOR OXIDATION AND THERMAL STABILITY. THEY MEET THE REQUIREMENT OF HIGH DEMULSIBILITY, LOW FOAMING, EXCELLENT RUST PROTECTION AND GOOD FILM STRENGTH PROPERTY TO MINIMIZE WEAR IN ROLL – NECK BEARINGS OF STEEL MILLS. THE QUALITY OF THE OILS IS FURTHER ENHANCED BY THE PRESENCE OF SELECTED GRADES OF ANTI – OXIDANTS, ANTI – RUST, DEMULSIFIER AND DEFOAMANTS.

HP STEEL GRADES MEET THE REQUIREMENTS OF MORGAN BEARING LUBRICANT SPECIFIED BY MORGAN CONSTRUCTION CO., USA. THESE OILS MEET THE PERFORMANCE REQUIREMENTS OF IS : 6552-1987 AND IPSS:1-09-001-81.

THESE OILS ARE SUITABLE FOR USE IN THE MORGAN BEARINGS OF STEEL MILLS. MORGAN BEARINGS ARE USED IN THE PLATE MILL, WIRE ROD MOLL, MERCHANT MILL, BLOOMING AND BILLET MILL AND RAIL & STRUCTURAL MILL. THE VARIOUS VISCOMETRIX OF HP STEEL GRADES ARE AVAILABLE FOR THESE MILLS. THE OILS ARE ALSO RECOMMENDED FOR THOSE PLACES WHERE THE BEARING ARE UNDER HEAVY LOAD AND IN THE PRESENCE OF WATER.

PROPERTIES		HP STEEL	
	257	460	680
VISCOSITY,AT 40°C ,CST	245 - 270	440 - 485	645 - 715
VISCOSITY, INDEX, MIN	95	95	95
FLASH POINT , °C, MIN	226	270	270
POUR POINT,°C MAX	(-) 6	(-) 6	(-) 6
FZG, FAILURE LOAD STAGE, MIN	5	6	6
EMULSION CHARACTERSTICS, @ 82 °C, 20 MINS, MAX	40 - 37-3	40-37-3	40-37-3

CONT...



HP STEEL EP 100

HP STEEL 100 IS A SPECIALLY FORMULATED PREMIUM BEARING AND HYDRAULIC OIL TO MEET THE SPECIFIC REQUIREMENTS IN STEEL PLANTS. IT IS BLENDED FROM PREMIUM QUALITY BASE STOCK AND SELECTED GRADES OF ANTI – OXIDANTS. ANTI – RUST. DEMULSIFIER. DEFAMANT, ANTI- RUST AND ANTI- WEAR/ EP ADDITIVES.

PERFORMANCE BENEFITS:

THIS OIL IS SUITABLE FOR USES IN CONDITIONS WHERE VERY GOOD LOAD BEARING ABILITY ALONG WITH EXCELLENT DEMUSIBILISTY CHARACTERSTICS ARE CRITICAL REQUIREMENTS. THIS PRODUCT HAS GOOD WETTABILITY AND HIGH FILM STRENGTH PROVIDING EXTRA RUST PROTECTION AND ELIMINATING SCUFFING AND SCORING OF THE BEARING. IT HAS A GOOD WATER SEPARATING ABILITY, WHICH IS RETAINED AT A HIGH LEVEL DURING EXTENDED USE IN WATER **QUENCHING CONDITIONS.**

MEETS, THE SPECIFICATIONS OF MORGAN CONSTRUCTION CO., USA, THE WORLD – WIDE MANUFACTURER OF NO- TWIST ROD MILLS.

APPLICATION AREAS:

THIS OIL HAS VERY GOOD EXTREME PRESSURE AND DEMULSIBILITY CHARACTERISTICS AND HENCE IT IS RECOMMENDED FOR USE IN ALL MORGOIL BEARINGS IN NO-TWIST ROD MILLS IN STEEL PLANTS. IT IS ALSO RECOMMENDED IN APPLICATIONS WHERE SEVERE LOAD CONDITIONS ARE ENCOUNTERED.

PROPERTIES	HP STEEL EP100
VISCOSITY,AT 40°C ,CST	85-95
VISCOSITY,INDEX, MIN	95
FLASH POINT , °C, MIN	210
POUR POINT,°C MAX	(-) 9
FZG, FAILURE LOAD STAGE, MIN	12
EMULSION CHARACTERSTICS,	40-37-3
@ 82 °C, 20 MINS, MAX	
HYDRAULIC STABILITY	PASS
FOUR BALL WELD LOAD Kg	180 MIN







ENKLO 32,46,57,N 68,100,121,150,176,220,320,460(ANTI-WEAR TYPE)



HYDRAULIC & CIRCULATING OILS DESIGNED FOR USE IN CIRCULATING SYSTEMS ARE MADE FROM HIGH VISCOSITY INDEX, CHEMICALLY STABLE BASE STOCKS WHICH ARE FURTHER FORTIFIED WITH ANTIOXIDANTS, ANTICORROSION, ANTIWEAR AND ANTIFOAM ADDITIVES, THEY MEET THE REQUIREMENTS OF VERY HIGH PRESSURE SYSTEMS AND ALSO OF SYSTEMS WHERE HIGH PUMP SPEEDS ARE ENCOUNTERED.

PERFORMANCE BENEFITS :

- RIGHT VISCOSITY TO SATISFY THE DEMANDS OF THE HYDRAULIC PUMP AND THE DESIGNED SYSTEM.
- HIGH VISCOSITY INDEX TO RESTRICT VISCOSITY CHANGES UNDER OPERATING CONDITIONS.
- GOOD FILM STRENGTH AND ANTIWEAR PROPERTIES TO MINIMISE WEAR OF PUMPS, VALVES, CYLINDERS, PISTONS ETC.
- MAXIMUM DEMULSIBILITY TO ALLOW ENTRAINED WATER TO SETTLE DOWN.
- EXCELLENT CORROSION RESISTANCE TO PREVENT RUSTING AND CORRSION OF METAL PARTS.
- RESISTANCE TO FOAMING TO ENSURE PROMPT AND EFFICIENT FUNCTIONING.
- HIGH CHEMICAL STABILITY TO ENSURE LONG AND TROUBLE FREE SERVICE LIFE.

ENKLO 32,46,68,100,150 MEETS THE REQUIREMENTS OF IS : 10522 – 1983 (REAFFIRMED 1993) SPECIFICATION AND USS 127. ENKLO GRADES PASS VICKERS

V-104 C VANE PUMP TEST AND MEET IPSS : 1-09-022.

ENKLO GRADES ARE RECOMMENDED FOR USE IN HYDRAULIC SYSTEMS, ENCLOSED GEAR BOXES, CHAIN DRIVES, COMPRESSORS, A VACUUM PUMPS, MINING MACHINERY, MACHINE TOOLS, HYDRAULIC AND CIRCULATION SYSTEM AND ENCLOSED GEAR BOXES WHICH DO NOT REQUIRE EP TYPE LUBRICANTS.

CONT...



ENKLO 32,46,57,N 68,100,121,150,176,220,320,460(ANTI-WEAR TYPE)



PROPERTIES		ENKLO										
	32	46	57	68	N68	100	121	150	176	220	320	460
VISCOSITY,	29-	42-	52-	62-	62-	90-	118-	140-	170-	200-	310-	430-
CST @, 40°C	34	50	62	68	68	100	124	160	180	240	340	500
VISCOSITY,	90	90	90	90	90	90	90	90	90	90	90	90
INDEX, MIN												
FLASHPOINT,												
COC,°C, MIN	190	190	210	210	210	210	220	230	230	230	250	260
POURPOINT,°C MAX	-3	-3	-3	0	0	0	0	0	0	0	0	0
NEUTRALISATION												
NUMBER(MG KOH	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
/GM, MAX												

CONT...





ENKLO HLP 22,32,46,68(SPECIAL PURPOSE ANTI – WEAR TYPE)



HYDRAULIC & CIRCULATING OILS HAVING OUTSTANDING ANTIWEAR PROPERTIES, OXIDATION STABILITY AND A HIGH FZG RATING. IN ADDITION THESE GRADES HAVE EXCELLENT RESISTANCE TO THERMAL DEGRADATION AND BETTER HYDROLYTIC STABILITY. THESE GRADES ARE SPECIALLY DEVELOPED FOR SOPHISTICATED HYDRAULIC DEVICES WITH HYDRO- MECHANICAL ACTUATORS. ENKLO HLP GRADES FIND APPLICATION IN SYSTEM WHERE OIL IS USED FOR EXTENDED PERIODS.

ENKLOP HLP GRADES MEET REQUIREMENT OF DIN 51524 PART2 SPECIFICATION DENISON HF-O AND HF-2 CINCINNATI MILACRON P-68, P-69, P70 AND IS : 11656 – 1986 SPECIFICATIONS AND US STEEL 127 ALSO PASSES VICKERS VANE PUMP TEST.

PERFORMANCE BENEFITS :

THEY ARE PREMIUM HYDRAULIC OILS HAVING OUTSTANDING ANTI-WEAR PROPERTIES, EXCELLENT OXIDATION STABILITY AND FZG RATINGS. THEY ARE RECOMMENDED FOR SOPHISTICATED ELECTRO HYDRAULIC OR NUMERICALLY CONTROLLED SYSTEM.

PROPOSED USAGE :

THESE GRADES ARE RECOMMENDED FOR USE IN SCREW COMPRESSORS, ALSO APPROVED BY INGERSOLL – RAND FOR USE IN THEIR SCREW COMPRESSORS, ENKLO HLP 32 IS APPROVED BY VOITH INDIA FOR USE IN HYDRAULIC COUPLING AND L & T MCNEIL LTD, CHENNAI FOR INJECTION MOULDING MACHINERY.

CONT...



ENKLO HLP 22,32,46,68(SPECIAL PURPOSE ANTI – WEAR TYPE)



PROPERTIES	ENI	KLO HLP		
	22	32	46	68
VISCOSITY,CST@ 40°C	20-24	29-35	42-50	62-72
VISCOSITY, INDEX, MIN	90	90	90	90
FLASH POINT ,COC, °C,MIN	170	180	185	210
POUR POINT,°C MAX	(-) 18	(-) 18	(-) 15	(-) 12
COPPER STRIPCORRISION@100°CFOR 3 HRS, MAX	1	1	1	1
FZG RIG TEST , FAILURE LOAD STAGE, MIN	11	11	11	11

CONT...







PREMIUM HYDRAULIC OILS HAVING OUTSTANDING LUBRICATION CHARACTERISTICS AND ANTIWEAR PROPERTIES, EXCELLENT THERMAL AND OXIDATION STABILITY AND VERY HIGH FZG RATING. THESE GRADES ARE FORMULATED WITH TURBINE OIL BASE STOCKS.

ENKLO HLP T GRADES MEET THE REQUIREMENTS ;OF DIN 51524 HLP PART 2 SPECIFICATION, DENISION HF-O & HF2, US STEEL 127 AND CINCINNATI MILACRON P-68, P-70. IT ALSO MEET IS : 10522 – 1983 AND IS 11656 – 1986 (REAFFIRMED 1993)

PROPERTIES ENKL	ENKLO HLP T				
	32	46	68		
VISCOSITY,CST@ 40°C	29 - 35	42 - 50	62 - 72		
VISCOSITY, INDEX, MIN	90	90	90		
FLASH POINT ,COC, °C,MIN	180	185	210		
POUR POINT,°C MAX	(-) 18	(-) 15	(-) 12		
COPPER STRIP CORRISION @ 100°C FOR 3 HRS, MAX	1	1	1		
FZG RIG TEST, FAILURE LOAD STAGE, MIN	11	11	11		

PROPOSED USAGE :

RECOMMENDED FOR USE IN HYDRAULIC SYSTEM REQUIRING VERY LONG LIFE LUBRICANT OF OUTSTANDING PERFORMANCE.

CONT...



ENKLO HL 32,46,68,100 (R & O TYPE)

HYDRAULIC AND CIRCULATING OILS, BLENDED FROM SOLVENT REFINED MINERAL OILS AND FORTIFIED WITH SUITABLE ADDITIVES TO IMPART EXCELLENT OXIDATION AND RUST INHIBITION PROPERTIES.

PERFORMANCE BENEFITS:

GOOD ANTI-RUST PROPERTIES PROVIDE THE BENEFIT OF LONGER EQUIPMENT LIFE, LOW MAINTENANCE COST AND REDUCED DOWN TIME. GOOD THERMAL AND OXIDATION STABILITY HELPS IN LOWER DEPOSITS, THUS INHIBITING OIL THICKENING AND CONSEQUENT POWER SAVING.

ENKLO HL GRADES MEET THE REQUIREMENT OF IS: 3098-1983 (REAFFIRMED 1993) AND DIN 51524 PART 1 SPECIFICATION (EXCEPT FOR LOW POUR POINT REQUIREMENT) . IT ALSO MEETS US STEEL NO.135 & CINCINNATI MILACRON P-38, P-55,P-54 & P-57.

PROPOSED USAGE :

THESE OILS FIND APPLICATIONS IN THE SYSTEMS WHERE HYDRAULIC FLUIDS OF MODERATE ANTI-WEAR PROPERTY ARE REQUIRED HAVING MILD EXTREME PRESSURE CHARACTERISTICS.

PROPERTIES	ENKLO HL						
	32	46	68	100	150		
VISCOSITY, CST@40°C	29-34	42-48	64-72	90-100	140-160		
VISCOSITY INDEX,	90	90	90	90	90		
MIN							
FLASH	190	190	210	210	230		
POINT,(COC),°C, MIN							
POUR POINT, °C, MAX	(-) 3	(-) 3	0	0	0		
COPPER STRIP	1	1	1	1	1		
CORROSION @100°C,							
FOR 3 HOURS, MAX							

CONT...



FIRE RESISTANT HYDRAULIC & CIRCULATING OILS

<u>ENKLO FRIE 68, 100,150</u>

ENKLO FRIE IS SPECIALLY FORMULATED HYDRAULIC OIL MEANT FOR APPLICATION IN AREAS PRONE TO POTENTIAL IGNITION SOURCES MAINLY IN MINES AND STEEL PLANTS. IT IS A HOMOGENOUS WATER-IN-OIL TYPE OF EMULSION, ALSO KNOWN AS INVERT EMULSION. THIS OIL IS CONSTITUTED OF MINERAL OIL ALONG WITH SPECIAL EMULSIFIERS, STABILISERS, RUST INHIBITORS AND OTHER PREMIUM QUALITY ADDITIVES.

MEETS, IS : 10532 (PART – 2) – 1993 AND HF – B CLASSIFICATION OF EUROPEAN MINES SAFETY COMMISSION.

PROPOSED USAGE :

RECOMMENDED FOR USE WHERE THE OPERATING TEMPERATURE OF THE OIL RANGES FROM 5°C TO + 60°C. THIS OIL IS USED IN THE HYDRAULIC ROOF SUPPORT SYSTEMS IN MINES. IT IS USED IN SIDE DISCHARGE LOADERS, HYDROSTATIC SYSTEMS, SCOOP TRAMS AND SHUTTLE CARS IN MINING AND STEEL INDUSTRIES. THIS OIL IS SUITABLE FOR USE IN DINTING MACHINES, HEADING MACHINES, LOADERS AND CREEPERS. IT IS ALSO USED IN THE INJECTION MOULDING MACHINES IN PLASTICS AND DIE -CASTING INDUSTRIES.

ENKLO FRWG 22,46,68

ENKLO FRWG IS A HYDRAULIC OIL FORMULATED FROM GLYCOLS FOR MEETING THE FIRE RESISTANT REQUIREMENT IN FIRE PRONE AREAS IN STEEL, MINING, DIE- CASTING AND PLASTICS INDUSTRIES. IT IS A TRUE SOLUTION OF GLYCOLS AND WATER. THIS GRADE IS COMPOSED OF PLOYAKLYLENE GLYCOLS, SELECTED FOR WEAR REDUCTION, CORROSION INHIBITORS, ANTI-OXIDANTS, ANTI-FOAMANTS AND WATER.

MEETS IS : 10532 (PART-3) – 1993 AND HF– C CLASSIFICATION OF EUROPEAN MINES SAFETY COMMISSION. CONT...





FIRE RESISTANT HYDRAULIC & CIRCULATING OILS ...CONT



PROPOSED USAGE :

THE OPERATING TEMPERATURE OF THE OIL RANGES FROM – 20°C TO + 60°C. THIS OIL IS SUITABLE FOR USE IN THE HYDRAULIC SYSTEMS OF COKE OVEN BATTERY CARRIER, CRANE HYDRAULICS IN HIGH TEMPERATURE REGIONS OF STEEL PLANTS. IT IS USED IN CONTROL GOVERNORS IN STEAM TURBINES, IN POWER PLANTS. IT IS ALSO SUITABLE FOR USE IN HYDROSTATIC TRANSMISSIONS.

PROPERTIES	E	NKLO FR		ENKLO FI	RWG	
	68	100	150	22	46	68
VISCOSITY, CST@40°C	61.2-74.8	90.2-110	135-165	19.8- 24.2	41.5-50.6	61.2-74.8
FOAMING CHARACTERISTIC, SEQ I	← 15	← 150/NIL →				
APPEARANCE	WHITISH EMULSION	WHITISH EMULSION	WHITISH EMULSION	CLEAR	CLEAR	CLEAR
RUST TEST with Synthetic Sea Water		PASSES		-	– PASSE	S





HYCOM C 100, 150,220,320

SPECIAL FEATURES:

THESE ARE COMPRESSOR OILS FORMULATED WITH SELECTED BASE STOCKS AND A SPECIAL COMPOUNDING AGENT TO GIVE EXCELLENT RESISTANCE TO WASHING EFFECT OF WATER. THESE ARE FURTHER FORTIFIED WITH ANTI-RUST AND ANTI-CORROSION AGENT AND HAVE GOOD FLUIDITY AT LOW TEMPERATURE. HYCOM C GRADES MEET DIN 51506

APPLICATION AREAS :

HYCOM C GRADES ARE RECOMMENDED FOR CYLINDER LUBRICATION OF SINGLE AND MULTISTAGE AIR COMPRESSORS WITH MOIST AIR AND PROVIDE EXCELLENT LUBRICATION OF PISTON RINGS, VALVES, CYLINDER LINERS ETC. HYCOM C 460 HAS LOW SULPHUR CONTENT FOR APPLICATIONS IN AMMONIA SYNTHESIS COMMPRESSORS IN FERTILISER PLANTS

PROPERTIES	HYCOM C					
	100	150	220	320	460	
KINEMATIC VISCOSITY, CST. @ 40°C	95-105	140-160	210-230	310-330	414-506	
FLASH POINT,(COC),°C, MIN	190	210	240	248	290	
SAPONIFICATION NUMBER, KOH/G	2.5-5.0	255.0	2.5-5.0	7-10		
POUR POINT, °C, MAX	(-) 6	0	3	6	-9	
CONRADSON CARBON RESIDUE % WT MAX	0.7	1.0	1.4	2.0	0.7	

PERFORMANCE BENEFITS :

• EXCELLENT WATER WASHING RESISTANCE

GOOD FLUIDITY AT LOW TEMPERATURE

HIGH ANTI RUST AND ANTI CORROSION PROPERTIES

CONT...





HYCOM 32,46,68,100,150

THESE COMPRESSOR OILS ARE DEVELOPED TO MEET SATISFACTORY LUBRICATION UNDER MODERATE OXIDATION AND THERMAL PERFORMANCE. HYCOM GRADES ARE BLENDED FROM NEUTRAL BASE STOCKS WITH SUITABLY SELECTED HIGH PERFORMANCE ANTI-OXIDANT, ANTI-RUST FOAM ADDITIVES.

PASSES THE PNEUROP OXIDATION TEST WITHOUT CATALYST & DIN 51352 PART I. EXCEEDS THE REQUIREMENTS OF DIN 51506VC-L SPECIFICATIONS.

APPLICATION AREAS :

FOR THIS IS SUITABLE MODERATE PERFORMANCE **RECIPROCATING ROTARY AIR/SCREW COMPRESSORS UP TO** A DISCHARGE AIR TEMPERATURE OF 220°C. THESE OILS ARE SUITABLE FOR USE IN AIR VACUUM PUMP DESIGNED TO **DELIVER AT A PRESSURE GREATER THAN ATMOSPHERE** PRESSURE. IT IS SUITABLE FOR LUBRICATION OF AIR COMPRESSORS LUBRICATED WITH COMPRESSION CHAMBERS NOT PROVIDED WITH COOLING BY INJECTION.

PROPERTIES		HYCOM						
	32	46	68	100	150			
VISCOSITY,CST.@ 40°C	29-35	42-50	62-74	90-110	135-165			
VISCOSITY, INDEX MIN	95	95	95	95	95			
FLASH POINT, (COC), °C, MIN	175	195	195	205	210			
POUR POINT, °C, MAX	(-) 9	(-) 9	(-) 9	(-) 9	(-) 3			
FZG,FAILURE LOAD STAGE, MIN	9	9	9	9	9			
TOTAL ACIDITY,mg KOH/gm	0.1	0.1	0.1	0.1	0.1			
AGEING CHARACTERISICS increase of CCR % MASS MAX	1.5	1.5	1.5	1.5	1.5			

CONT...





HYCOM NH 32,46,57

IT IS BLENDED OUT OF HIGHLY REFINED TURBINE BASE STOCKS AND SPECIAL TYPES OF ANTI-OXIDANTS, ANTI-RUST, ANTI-FOAM AND DEMULSIFIER WHICH DO NOT REACT TO ANY OF THE TYPES OF GASES.

PERFORMANCE BENEFITS :

THIS OIL HAS GOOD DEMULSIBILITY PROPERTY, LOW DEPOSITS AND SLUDGE FOAMING TENDENCY AT A WIDE RANGE OF WORKING TEMPERATURE AND IN ANY GASEOUS ATMOSPHERE.

IT MEETS DIN 51506 VDL SPECIFICATIONS.

APPLICATION AREAS :

HYCOM NH GRADES ARE SPECIALLY DEVELOPED OIL FOR EXCELLENT LUBRICATION OF AMMONIA AND SYNTHETIC GAS COMPRESSORS. IT IS SUITABLE FOR USE IN BOTH SCREW AND CENTRIFUGAL TYPE COMPRESSORS AND IS COMPATIBLE WITH ANY OTHER OIL WITH CONVENTIONAL ADDITIVE SYSTEM.

PROPERTIES	HYCOM NH					
	32	46	57			
VISCOSITY,CST.@ 40°C	29-35	42-50	55-60			
VISCOSITY, INDEX MIN	100	98	95			
FLASH POINT, (COC), °C, MIN	220	220	220			
POUR POINT, °C, MAX	(-) 18	(-) 15	(-) 12			
FZG,FLS, MIN	11	11	11			
TOTAL ACIDITY,mg KOH/gm	0.2	0.2	0.2			
AGEING CHARACTERISICS increase of CCR % MASS MAX	1.5	1.5	1.5			

CONT...



HYCOM 150 P

SPECIAL FEATURES:

COMPRESSOR OIL DEVELOPED FOR INDIAN RAILWAYS

SPECIFICATIONS :

MEETS IS : 13256 : 1992 DAB & DIN 51506 VDL GRADES

APPLICATION AREAS:

COMPRESSORS AND EXPRESSORS OF DIESEL LOCOMOTIVES OF INDIAN RAILWAYS MANUFACTURED BY KIRLOSKAR PNEUMATICS

PROPERTIES	HYCOM 150 P
KINENATIC VISCOSITY @ 40 deg	135-165
С	
VISCOSITY INDEX MIN	95
FLASH POINT deg C MIN	210
POUR POINT deg C MAX	-15
DEMULSIBILITY @82 deg C in20	40: 40:0
minutes, ml	

PERFORMANCE BENEFITS :

- EXCELLENT DEMULSIBILITY
- EXCELLENT OXIDATION STABILITY
- HIGH LOAD BEARING CAPABILITY

CONT...



HYCOM VDLT 32,46,68,100,150,220,320

COMPRESSOR OILS SPECIALLY BLENDED FROM SATURATED PARAFFINIC TURBINE BASE STOCKS AND SELECTED PREMIUM GRADE OF ANTI-OXIDANTS, ANTI-RUST, ANTI-FOAM AND ANTI-WEAR ADDITIVES.

IT PASSES THE STRINGENT PNEUROP OXIDATION PERFORMANCE TEST WITH CATALYST AND DIN 51352 PART II. IT MEETS THE REQUIREMENTS OF DIN 51506 VDL-L AND ISO DIS 6521 SPECIFICATIONS. IT ALSO EXCEED SPERRY VICKERS I-286-S, AFNOR NFE 48603 (HM) AND CINCINNATI MILACRON P-68, P-69, P-70 SPECIFICATION :13256 :1992 DAB

APPLICATION AREAS :

GRADES MOST SUITABLE TO BE USED IN HIGH PERFORMANCE RECIPROCATING ROTARY AIR **COMPRESSORS/SCREW COMPRESSORS. THIS CAN BE USED UP** TO 250 °C AIR DISCHARGES TEMPERATURE. IT IS SUITABLE FOR SIR VACUUM PUMP DESIGNED TO DELIVER AT A PRESSURE HIGHER THAN ATMOSPHERIC PRESSURE. IT IS SUITABLE FOR LUBRICATION OF AIR COMPRESSORS WITH LUBRICATED COMPRESSION CHAMBER, NOT PROVIDED WITH COOLING BY INJECTION.

PROPERTIES	HYCOM VDLT							
	32	46	68	100	150	220	320	
VISCOSITY,CST.	29-35	42-50	62-74	90-110	135-165	210-230	290-350	
@ 40°C								
VISCOSITY,INDEX MIN	95	95	95	95	95	95	95	
FLASH POINT, (COC), °C, MIN	175	195	195	205	210	215	220	
POUR POINT, °C, MAX	(-) 9	(-) 9	(-) 9	(-) 9	(-) 9	(-) 15	(-) 3	
FZG,FAILURE LOAD STAGE, MIN	9	9	9	9	9	9	9	

PERFORMANCE BENEFITS :

EXCELLENT DEMULSIBILITY

LOW VOLATILITY & EXCELLENT OXIDATION STABILITY





WAYLUBE 68, N68, 220

MACHINE TOOLWAY OILS FORMULATED TO IMPART SPECIAL FRICTIONAL CHARACTERISTICS THAT OVERCOME THE STICK-SLIP MOTION, ORDINARILY ASSOCIATED WITH SLOW MOVING MACHINE PARTS. THEY ARE ALSO FORTIFIED WITH MILD EP AND RUST PREVENTIVE PROPERTIES.

WAYLUBE N68 IS A COMBINED HYDRAULIC AND MACHINE TOOL WAY LUBRICANT POSSESSING ADEQUATE LUBRICITY TO ELIMINATE STICK-SLIP AND CHATTER UNDER MODERATE LOAD CONDITION AND AT THE SAME TIME SERVES AS HYDRAULIC MEDIA IN NON-CRITICAL SYSTEMS. WAYLUBE 68 & 220 MEET CINCINNATI MILACRON THERMAL STABILITY TEST P 47

APPLICATIONAREAS :

WAYLUBE 68 & 220 ARE RECOMMENDED FOR SLIDE WAY LUBRICATION OF PLANERS, GRINDERS, HORIZONTAL BORING MACHINES, SHAPERS, JIG BORERS ETC, INVOLVING HIGH PRECISION WORK AND ARE ALSO RECOMMENDED FOR LUBRICATION OF GEARS BY OIL SCAN. WAYLUBE N 68 IS RECOMMENDED FOR MACHINE TOOLS COMBINED HYDRAULIC AND WAY LUBRICATION SYSTEMS.

PROPERTIES	WAYLUBE						
	68	220	N68				
VISCOSITY,CST.@ 40°C	62-68	200-220	62-68				
VISCOSITY, INDEX MIN	90	90	90				
FLASH POINT, (COC), °C, MIN	170	198	190				
POUR POINT, °C, MAX	(-) 3	(-) 3	0				
NEUTRALISATION NO mg/KOH/gm	1.7	1.7	1.7				



PRESS TO







PARTHAN EP 68,100,150,220,257,320,460,680,1000

INDUSTRIAL GEAR BOX OILS ARE QUALITY OILS MANUFACTURED FROM HIGH QUALITY BASE STOCKS FORTIFIED WITH EXTREME PRESSURE ADDITIVES, ANTIFOAM, ANTIRUST, AND ANTIOXIDATION AGENTS.

SPECIFICATIONS:

PARTHAN EP GRADES MEET IS : 8406 – 1993, USS 224, AGMA STANDARD 250.04, DIN 51 517 PART 3, IPPSS 1-09-003-82 AND CININNATI MILACRON P-63,P-77,P-35. PARTHAN EP GRADES ARE APPROVED BY ABB – ABL PROJECTS FOR THEIR VARIOUS EQUIPMENTS, RECOMMENDED BY MAJOR GEAR BOX MANUFACTURES LIKE FMG, SHANTI GEAR BOX, ETC.

APPLICATION AREAS :

THESE OILS ARE RECOMMENDED FOR ALL HEAVY DUTY ENCLOSED GEAR DRIVES WITH CIRCULATION OR SPLASH LUBRICATION SYSTEM OPERATING UNDER HEAVY OR SHOCK LOAD CONDITIONS, PAIN AND ANTIFRICTION BEARING SUBJECTED TO SHOCK AND HEAVY LOADS, PARTHAN EP GRADES GIVE DEPENDABLE PERFORMANCE FOR CONTINUOUS SERVICE AT OPERATING TEMPERATURE UP 110°C. PARTHAN EP OILS ARE ALSO SUITABLE FOR SPRAY LUBRICATION SYSTEMS REQUIRING EXTREME PRESSURE PROPERTIES.

PERFORMANCE BENEFITS:

THEY HAVE EXCELLENT OXIDATION RESISTANCE AND THERMAL STABILITY. PARTHAN EP GRADES CONTAIN PHOSPHOROUS AND SULFUR AS EXTREME PRESSURE AGENTS. THESES ARE NON – CORROSIVE TO COPPER AND COPPER ALLOYS.

CONT...





PARTHAN EP 68,100,150,220,257,320,460,680,1000

PROPERTIES	PARTHAN EP								
	68	100	150	220	257	320	460	680	1000
VISCOSITY,CST.@40° C	62-72	95- 110	135- 160	210- 240	250- 270	300- 340	440- 475	625- 700	950- 1050
VISCOSITY,INDEX MIN	90	90	90	90	90	90	90	90	90
FLASH POINT, (COC), °C, MIN	210	210	220	220	220	220	230	230	230
POUR POINT, °C, MAX	(-) 15	(-) 15	(-) 15	(-) 9	(-) 9	(-) 9	(-) 6	(-) 3	0
TIMKEN OK LOAD, KG, MIN	60	60	60	60	60	60	60	60	60
FZG, RIG TEST, PASSES	12	12	12	12	12	12	12	12	12

FOR FURTHER DETAILS PRESS HERE



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SPINTEK 5,12,15,22

SPINDLE OILS ARE LOW VISCOSITY LUBRICANTS MANUFACTURED FROM HIGHLY REFINED BASE STOCKS POSSESSING EXCELLENT CHEMICAL AND OXIDATION STABILITY AND FURTHER FORTIFIED WITH CAREFULLY SELECTED OXIDATION AND RUST INHIBITORS, ANTIWEAR AND ANTIFOAM AGENTS.

SPECIFICATIONS: IT MEETS IS: 493 (PART I)-1993

APPLICATION AREAS :

THESE OILS ARE RECOMMENDED FOR LUBRICATION OF TEXTILE AND MACHINE TOOLS, SPINDLE BEARINGS, TIMING GEARS, CENTRIFUGAL SEPARATORS, POSITIVE DISPLACEMENT BLOWERS AND HYDRAULIC SYSTEM OF CERTAIN HIGH PRECISION MACHINE TOOLS.

SPINTEK GRADE ARE APPROVED BY MAJOR TEXTILE MACHINERY MANUFACTURES LIKE LMW, TEXTOOL, TEXMACO ETC.

PROPERTIES				
	5	12	15	22
VISCOSITY,CST.@40°C	9.5-13.4	9.0-11.0	14-16	20-24
VISCOSITY, INDEX MIN	90	90	90	90
FLASH POINT, COC), °C, MIN	150	150	166	172
POUR POINT, °C, MAX	(-) 6	(-) 6	(-) 3	(-) 3
TOTAL ACIDITY,mg KOH/gm	1.5	1.5	1.5	2.0

PERFORMANCE BENEFITS:

SPINTEK OILS HAVE FOLLOWING OUTSTANDING CHARACTERISTICS.

- GOOD STRENGTH OF OIL FILM
- GOOD DEMULSIBILITY
- HIGH CHEMICAL STABILITY
- LOWEST FLUID FRICTION

- RESISTANCE TO RUSTING AND CORROSION

CONT...



SPINTEK EE 12, 22

SPECIAL FEATURES:

ENERGY EFFICIENT PREMIUM QUALITY OILS DESIGNED FOR RING SPINDLE BOLSTERS OF TEXTILE MILLS

APPLICATION AREAS :

SUITABLE FOR ALMOST ALL THE APPLICATIONS WHERE SPINTEK GRADES ARE BEING USED

PHYSIO CHEMICAL CHARACTERISTICS:

PROPERTIES	EE 12	EE 22
KINEMATIC	9-11	20-24
VISCOSITY, cSt, @40		
deg C		
VISCOSITY INDEX	90	90
MIN		
FLASH POINT deg C	150	160
MIN		
POUR POINT deg C	-6	-3
MAX		
TOTAL ACIDITY,mg	1.5	2
KOH/gm		
COPPER STRIP	1	1
CORROSION @		
100deg C for 3 hrs.		

PERFORMANCE BENEFITS:

- CONSIDERABLE SAVINGS IN ENERGY COSTS
- EXCELLENT OIL FILM STRENGTH
- LOWEST FLUID FRICTION
- RESISTANCE TO RUSTING AND CORROSION



PRESS TO





<u>YANTROL 32,68,100,150,220,320,</u> YANTROL N 32,68,100,150,220,320,460

GENERALPURPOSEMACHINERYOILSSPECIALLYFORMULATEDWITHADDITIVESTOIMPROVEADHESIVENESS AND FILM STRENGTH CHARACTERISTICS.

SPECIFICATIONS: IT MEETS IS: 493 (PART I) – 1993

APPLICATION AREAS:

YANTROL GRADES ARE GENERAL-PURPOSE LUBRICANTS FOR 'ONCE-THROUGH' APPLICATION SITUATION IN TEXTILE MILLS, PAPER MILLS AND MACHINE TOOLS.

YANTROL N GRADES ARE SPECIALLY DEVELOPED FOR GENERAL-PURPOSE LUBRICATION, TO BE USED AT STEEL MILLS, TEXTILE MILLS, MACHINE TOOLS, ETC.

PROPERTIES	YANTROL/YANTROL N						
	32	68	100	150	220	320	460
VISCOSITY,CST.@40°C	29-34	62-68	90-	140-	200-	300-	420-
,			100	160	240	340	500
VISCOSITY, INDEX MIN	90	90	90	90	90	90	90
FLASH POINT, COC), °C, MIN	190	190	190	190	200	220	240
POUR POINT, °C, MAX	0	0	0	0	0	0	0

<u>PERFORMANCE BENEFITS:</u>

YANTROL GRADES HAVE PROVED, PERSISTENCE OF OIL FILM TO AN UNUSUAL DEGREE AND HAVE MARKED INFLUENCE IN REDUCING POWER CONSUMPTION, WEAR AND MAINTENANCE COSTS.

FOR FURTHER INFORMATION PLEASE CONTACT OUR NEAREST REGIONAL OFFICE

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YANTROL TS 32,68,100,220 ; YANTROL C 32

YANTROL TS GRADES ARE SPECIALLY DESIGNED FOR LUBRICATION OF TEXTILE MACHINERY, HAVE IN ADDITION EXCELLENT SCOUR ABILITY AND SUPERIOR TACKINESS CHARACTERISTICS.

APPLICATION AREAS :

YANTROLTSGRADESARERECOMMENDEDFORLUBRICATIONLOOMSANDOTHERTEXTILEMACHINERYWHERE A SCOURABLETYPE OF OILS IS PREFERRED.

YANTROL C 32 IS A SPECIAL GRADE FORMULATED FOR LUBRICATION OF HIGH SPEED SPINDLE BEARINGS AND FINDS SPECIFIC APPLICATION SUCH AS WICK-FED TWISTER RINGS, CIRCULAR KNITTING MACHINE, SEWING MACHINES, LEATHER APRONS AND TAPES ETC IN TEXTILE INDUSTRY.

PROPERTIES	YANTROL				
	TS 32	TS 68	TS 100	TS 220	C 32
VISCOSITY,CST.@40°C	29-34	62-68	90-110	200-	29-34
				230	
VISCOSITY, INDEX	90	90	90	90	95
MIN					
FLASH POINT, COC),	68	188	192	210	190
°C, MIN					
POUR POINT, °C, MAX	0	0	0	0	0
SAPONIFICATION VALUE mg KOH/gm					25-30

PERFORMANCE BENEFITS:

THEY REDUCE THE POSSIBILITY OF STAINING THE CLOTH IN DIFFERENT STAGES OF CLOTH MANUFACTURING IN TEXTILE MILLS. THESE OILS MINIMIZE WEAR, PROVIDE PROTECTION AGAINST RUST AND CORROSION.

CONT...



HP Lubricants - Product Data Sheet STANTROL 1,3

SPECIAL FEATURES:

Synthetic lubricant used in textile and other industry for lubrication of chain drives and stentors. Particularly suitable as high temperature chain lubricant.

<u>APPLICATION AREAS</u> :

LUBRICATION OF CHAINS, CHAIN DRIVES & STENTORS EXPOSED TO HIGH TEMPERTAURES UPTO 200 DEG C

PHYSIO CHEMICAL CHARACTERISTICS:

PROPERTIES	1	3
KINEMATIC	160	300-340
VISCOSITY, cSt @ 40		
deg C		
VISCOSITY INDEX		
MIN		
FLASH POINT, COC	250	250
deg C MIN		
POUR POINT deg C ,	-6	-6
MAX		

PERFORMANCE BENEFITS :

- HIGH TOLERANCE TO TEMPERATURE UPTO 200 DEG C
- NILL CARBON FORMATION
- EXCELLENT ADHESION PROPERTIES









CYNDOL 680,1000,1500,TC 460,TC530,TC680

CYNDOL GRADES ARE FORMULATED FROM SPECIALLY TREATED HIGH VISCOSITY INDEX, HEAVY VISCOSITY BASE STOCKS HAVING ENHANCED LUBRICATING PROPERTIES AND THERMAL STABILITY.

SPECIFICATION: CYNDOL TC GRADES MEET IPSS: 1-09-010

APPLICATION AREAS:

CYNDOL TC GRADES ARE RECOMMENDED FOR STEAM ENGINES OPERATING UNDER WET SATURATED AND HIGHLY SUPERHEATED STEAM CONDITIONS. THESE ARE WIDELY USED IN CALENDER BEARING AND SUGAR MILL ROLLER BEARING AND ARE ALSO RECOMMENDED FOR LUBRICATION OF WORM GEARS.

THESE ARE ALSO USED IN OIL TEMPERING AND WIRE DRAWING APPLICATION WITH SATISFACTORY RESULTS.

CONT...







PROPERTIES		С	YNDOL			
	TC 460	TC530	TC680	680	1000	1500
VISCOSITY,CST. @40°C	420-470	510-550	625-700	625- 700	950- 1100	1400- 1600
VISCOSITY, INDEX MIN	90	90	85	85	80	80
FLASH POINT, (COC), °C, MIN	240	240	260	254	292	306
POUR POINT, °C, MAX	6	6	6	12	9	3
SAPONIFICATION NO., MG KOH/GM OF OIL	10-12	10-12	10-12	-	-	-

PERFORMANCE BENEFITS:

THEY HAVE EXCELLENT OILINESS AND FILM STRENGTH CHARACTERISTICS, MAXIMUM RESISTANCE TO WASHING EFFECT OF MOISTURE AND EXCELLENT LOAD CARRYING ABILITY. CYNDOL TC GRADES ARE COMPOUNDED WITH SPECIAL FATTY OILS AND CONTAIN AND ADHESIVE AGENT







SEETUL 15,22,32,46,68,100,N32,N68

REFRIGERATION COMPRESSOR OILS FORMULATED FROM SPECIALLY SELECTED LUBE BASE STOCKS TO PROVIDE LOW POUR POINT, LOW FLOC POINT, DRYNESS, GOOD CHIMECAL STABILITY AND READY SOLUBILITY IN LIQUEFIED REFRIGERANTS,

<u>SPECIFICATIONS</u>: SEETUL GRADES MEET IS : 4578-1989 SPECIFICATION

APPLICATION AREAS :

SEETUL GRADES ARE RECOMMENDED FOR WIDE RANGE OF REFRIGERATION COMPRESSORS, BOTH RECIPROCATING AS WELL AS ROTARY, USING ALL CONVENTIONAL REFRIGERANTS EXCEPT SULFUR- DIOXIDE. SEETUL N GRADES ARE RECOMMENDED FOR THE LUBRICATION OF HERMETICALLY SEALED REFRIGERATION COMPRESSORS.

CONT...



SEETUL 15,22,32,46,68,100,N32,N68



PROPERTIES	SEETUL							
	15	22	32	46	68	100	N32	N68
VISCOSITY,CST.@40°C	13.5- 16.5	20-24	30-34	42-46	62-68	90-100	29-32	62- 68
VISCOSITY,INDEX MIN	50	50	50	55	55	60	50	50
FLASH POINT, (COC), °C, MIN	145	150	160	160	170	200	160	175
POUR POINT, °C, MAX	(-) 39	(-)36	(-)30	(-)26	(-)26	(-)26	(-)36	(-) 30
TAN, MG KOH/G OF OIL,	0.07		0.05	0.05	0.05	0.05	0.05	0.05
MAX KG, MIN	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05

PERFORMANCE BENEFITS:

SEETUL N GRADES HAVE ADDITIONAL CHARACTERISTICS OF LOW FREON FLOC POINT, (-) 40°C . THEY POSSESS HIGH FLUIDITY AT VERY LOW TEMPERATURES, RESIST DEPOSIT FORMATION AND HAVE REDUCED TENDENCY TO FOAM.

THEY HAVE LONG SERVICE LIFE DUE TO GOOD OXIDATION AND THERMAL STABILITY AND ENSURE HIGH CONDENSER EFFICIENCY AND REDUCED COMPRESSOR VALUE MAINTENANCE, DUE TO LESS DEPOSITS.





NUMATIC 46, 100, 220

PNEUMATIC TOOL OILS ARE SPECIALLY FORMULATED WITH EXTREME PRESSURE, TACKINESS, ANTI-RUST AGENTS.

APPLICATION AREAS:

THESE OILS ARE RECOMMENDED FOR LUBRICATION OF PNEUMATIC EQUIPMENTS SUCH AS ROCK DRILLS, JACK HAMMERS, CHIPPERS, WAGON DRILLS ETC AND USED IN SMALL IN–PLANT PNEUMATIC TOOLS LIKE, GRINDERS, FILING TOOLS, DRILLS TAPPERS, IMPACT WRENCHES, RIVETERS, HOISTS ETC.

PROPERTIES	NUMATIC	NUN	IATIC
	46	100	220
VISCOSITY,CST.@40°C	42-48	95-110	200-230
FLASH POINT, (COC), °C, MIN	162	192	216
POUR POINT, °C, MAX	0	0	0
SAPONIFICATIN NO., .MG KOH/G OF OIL	5.2-6	5.2-6	5.2-6

PERFORMANCE BENEFITS :

HAS LOAD BEARING CHARACTERISTICS, GOOD ADHESIVE CHARACTERISTICS, GOOD DEMULSIBILITY PROPERTY AND EFFECTIVE PROTECTION TO METAL SURFACES AGAINST ACIDIC CORROSION. THESE GRADES HAVE EXCELLENT FLOW CHARACTERISTICS TO ENSURE PROPER FEED AND DISPERSION THROUGH THE OILERS.

> PRESS TO RETURN





CRUSH WELL 1, 2, 3, 4, 5

SPECIAL FEATURES:

SUGAR MILLS LUBRICANTS MANUFACTURED FROM HIGH VISCOSITY LUBRICATING OIL BASE STOCKS AND CONTAIN SELECTED NON-TOXIC MILD EP AND SPECIAL COMPOUNDING AGENTS.

APPLICATION AREAS:

THESE ARE IDEAL LUBRICANTS MEETING REQUIREMENTS OF HEAVILY LOADED MILL ROLL BEARINGS IN SUGAR MILLS. THESE CARRY APPROVALS OF SUGAR MILL MACHINERY MANUFACTURERS. THESE OILS ARE ALSO RECOMMENDED IN CENTRALIZED LUBRICATION SYSTEM OF SLOW SPEED SPUR AND HELICAL GEARS IN CERTAIN INDUSTRIES AND FOR OPEN GEAR LUBRICATION BY SLUSH PAN METHOD.

PROPERTIES			CRUSHW	ELL	
	1	2	3	4	5
VISCOSITY,CST.@40°C	28-33	40-45	60-65	89-94	109-114
FLASH POINT, (COC), °C, MIN	204	204	204	204	204
APPEARANCE	BLACK VISCOUS FLUID	BLACK VISCOUS FLUID	BLACK VISCOUS FLUID	BLACK VISCOUS FLUID	BLACK VISCOUS FLUID
FOUR BALL WELD LOAD, Kg	240	240	240	240	240
TIMKEN OK LOAD Ibs	40	40	40	40	40

<u>PERFORMANCE BENEFITS</u> :

ENSURE LUBRICATION EVEN IN THE PRESENCE OF JUICE. THESE OILS PREVENT WEAR AND CORROSION OF BEARINGS AND HAVE EXCELLENT RESISTANCE TO LEAKAGE

FOR FURTHER INFORMATION PLEASE CONTACT OUR NEAREST REGIONAL OFFICE

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HYTAK 0,1,2,5,F3,F4,F5

OPEN GEAR OILS WHICH ARE HEAVY VISCOUS BLACK PETROLEUM PRODUCTS FORTIFIED WITH SPECIAL TACKINESS AGENTS.

PERFORMANCE BENEFITS :

THEY ALL HAVE PRONOUNCED STRINGINESS AND EXCELLENT FILM STRENGTH TO WITHSTAND HIGH PRESSURE ENCOUNTERED IN HEAVILY LOADED OPEN GEAR. THEY ALSO POSSESS GOOD RUST PREVENTIVE PROPERTIES AND HAVE ABILITY TO STAY IN PLACE AND PROVIDE LONG LASTING PROTECTION TO ROPES AND OPEN GEARS.

<u>SPECIFICATIONS</u> : HYTAK 1,2,5, MEET IS:9554-1980 GRADES 2,3,&4 SPECIFICATIONS RESPECTIVELY.

APPLICATION AREAS:

THESE GRADES ARE RECOMMENDED FOR LUBRICATION OF CONVENTIONAL OPEN GEARS, CABLE AND WIRE ROPES, THE HEAVIER GRADES REQUIRE HEATING BEFORE APPLICATION AND IN LIQUID STATE THEY CAN BE APPLIED WITH SWAB, BRUSH, PADDLE OR SPRAY. HYTAK F GRADES CONTAIN A NON- FLAMMABLE SOLVENT FOR EASY APPLICATION WITHOUT HEATING.

PROPERTIES				HYTAP	(
	0	1	2	5	F3	F4	F5
VISCOSITY,CS T.@40°C	62.1-67.5	200-300	450-650	950-1200	1400-1600 @40C	1166-1590 @50C	2332-3180 @50C
FLASH POINT, (COC), °C, MIN	240	230	230	230	260	260	260
APPEARANCE	BLACK VISCOUS SLIGHTLY	BLACK VISCOUS SLIGHTLY	BLACK VISCOUS SLIGHTLY	BLACK VISCOUS SLIGHTLY	BLACK HOMOGE NEOUS	BLACK HOMOGE NEOUS	BLACK HOMOGE NEOUS
	TACKY FLUID	TACKY FLUID	TACKY FLUID	TACKY FLUID	VISCOUS FLUID	VISCOUS FLUID	VISCOUS FLUID









DEFENCE GRADES

HP OIL OM 33,100

PREMIUM QUALITY LUBRICATING OILS, EXCLUSIVELY USED FOR DEFENCE REQUIREMENTS, ARE MADE FROM BEST MINERAL OIL BASE STOCKS, FURTHER ENHANCED WITH ANTI OXIDATION, RUST INHIBITORS, ANTIFOAM AGENTS.

HP OIL OM 100, 33 MEETS JSS : 9150-26. IT IS GENERALLY USED AS A HYDRAULIC FLUID ON MACHINE TOOLS, FORK-LIFT TRUCKS AND HANDLING GEAR SYSTEMS OF HM SHIPS AND CERTAIN FIGHTER VEHICLES. LUBRICATION OF CERTAIN GUNNERY EQUIPMENT, RADAR EQUIPMENT AND AIR COMPRESSOR OPERATING IN ALL AMBIENT TEMPERATURES NOT LOWER THAN MINUS 40°C.

HP OIL OM 100 MEETS DEFENCE STANDARD SPECIFICATION AND ALSO IS: 1012-1987. HP OIL OM 100 GRADE IS USED IN MAIN AND AUXILIARY STEAM TURBINES AND THEIR ASSOCIATED GEARING. IT IS ALSO APPLIED IN AUXILIARY RECIPROCATING ENGINES WITH FORCED LUBRICATION OF NAVAL AIRCRAFT GUNS AND SELF FEED MECHANISMS. THIS IS ALSO USED FOR MISCELLANEOUS PURPOSES AND CERTAIN HYDRAULIC SYSTEMS IN HM SHIPS.

CONT...



DEFENCE GRADES

HP OIL OM 33 ,100



PROPERTIES	HP OIL OM				
	100	33			
VISCOSITY,CST.@40°C	90 – 110	26 - 33			
VISCOSITY, INDEX	95	-			
MIN					
FLASH POINT, (COC),	210	160(PMCC)			
°C, MIN					
POUR POINT, °C, MAX	(-) 6	(-) 30			
COPPER STRIP	1	1			
CORROSION					
AT 100C FOR 3HRS.,					
MAX					
TAN, MG KOH/G OF	0.20	0.3			
OIL, MAX KG, MIN					
EMULSION	40-40-0				
CHARACTERISICS @					
54 deg C , in 25					
minutes, ml					

<u>HP PROTECTIVE PX – 10</u>

HP PROTECTIVE PX 10 IS A PROTECTIVE AND SURFACE-ACTIVE MATERIAL DISSOLVED IN A VOLATILE SOLVENT. THIS IS USEFUL FOR PRELIMINARY TREATMENT OF SALVAGED MECHANISMS AND OF ARTICLES DEGREASED BY ALKALI AND WATER WASHES. THIS IS ALSO USED FOR PROTECTION OF WATER SPACES OF IC INGINES, CYLINDERS AND VALVE CHESTS OF STEAM ENGINES AND IMPELLERS OF TURBINE ENGINES.

> PRESS TO RETURN





DEFENCE GRADES

<u>HP OIL C 70, C 600</u>

HP OIL C 70 MEETS JSS : 9150-9 SPECIFICATION. IT IS INTENDED FOR LUBRICATION FOR ARTILLERY EQUIPMENT AND BREACH MECHANISM.

HP OIL C 600 MEETS IS : 2297-1987 (GRADE 140) SPECIFICATION. HP OM C 600 GRADE IS USED FOR LUBRICATION OF CERTAIN GEAR–BOXES, STEERING BOXES AND WORM GEAR AXLES (BUT NOT FOR PRE-SELECTOR BOXES ON HYPOID GEARS) ALSO FOR CERTAIN USES ON TORPEDOES.

	C70	C600
KINEMATIC VISCOSITY@40°C, CST	30 - 35	
KINEMATIC VISCOSITY, @100°C, CST		25 - 43
VISCOSITY INDEX, MIN	-	85
FLASH POINT, (COC), °C, MIN	150(PMCC)	230(COC)
POUR POINT, °C, MAX	-	(-) 3
COPPER STRIP CORROSION AT 100C FOR 3HRS., MAX	-	1
SAPONIFICATION VALUE MG KOK/GM OIL	50 - 60	10 - 18
		PRESS TO RETURN
FOR FURTHER INFO	RMATION PLEASE CONTAC REGIONAL OFFICE	T OUR NEAREST



HP Lubricants - Product Data Sheet<u>DEFENCE GRADES</u>



HP OIL OX 52

IT MEETS JSS : 9150 – 11 SPECIFICATION. IT IS USED AS A LUBRICANT, PRESERVATIVE CUM CLEANING AGENT FOR SMALL ARMS AND MACHINE GUNS AT MEDIUM AND HIGH TEMPERATURES. IT IS NOT RECOMMENDED WHERE OILS IS IN PROLONGED CONTACT WITH BRASS COMPONENTS.

PROPERTIES	HP OIL OX 52
KINEMATIC VISCOSITY	40 – 50
@ 37.8°C, CST	
NEUTRALITY (PH VALUE)	8 – 9
FLASH POINT, PMCC, °C,MIN	163
POUR POINT, °C , MAX	0
OLEIC ACID, % WT	13.5 – 14.1









GENERAL RECOMMENDATIONS FOR ENCLOSED SPUR, BEVEL AND HELICAL GEARS (FOR SPEED REDUCTION UPTO 10:1)

LUBRICANT RECOMMENDED

PINION	НР	METHOD OF	ANTIWEAR	MILD EP
SPEED	*TRANSMITTED	APPLICATION	MINERAL OIL	OIL
R.P.M				
1000 TO 2000	UNDER 10	CIRCULATION SPLASH	ENKLO 68	PARTHAN EP68
	10 TO 50	- DO -	ENKLO150	PARTHAN EP150
	OVER 50	- DO -	ENKLO 220	PARTHAN EP150
300 TO1000	UNDER 20	CIRCULATION	ENKLO 68	PARTHAN EP68
		SPLASH	ENKLO 150	PARTHAN EP150
	20 TO 75	CIRCULATION	ENKLO 150	PARTHAN EP150
		SPLASH	ENKLO 220	PARTHAN EP150
	OVER 75	CIRCULATION	ENKLO 220	PARTHAN EP150
		SPLASH	ENKLO 320	PARTHAN EP220
UNDER 300	UNDER 30	CIRCULATION	ENKLO 150	PARTHAN EP150
		SPLASH	ENKLO 220	PARTHAN EP150
	30 - 100	CIRCULATION	ENKLO 220	PARTHAN EP150
		SPLASH	ENKLO 320	PARTHAN EP220
	OVER 100	CIRCULATION	ENKLO 320	PARTHAN EP220
		SPLASH	ENKLO 460	PARTHAN EP320

IN CASE OF SHOCK LOADING , MULTIPLY THE RATED HP BY 1.5 BEFORE USING TABLE.

CONT...





GENERAL RECOMMENDATIONS FOR ENCLOSED SPUR, BEVEL AND HELICAL GEARS (FOR SPEED REDUCTION UPTO 10:1)

LUBRICANT RECOMMENDED

PINION SPEED	HP	METHOD OF	ANTIWEAR	MILD EP
R.P.M	*TRANSMITTED	APPLICATION	MINERAL OIL	OIL
1000 TO 2000	UNDER 10	CIRCULATION	ENKLO 68	PARTHAN EP68
		SPLASH		
	10 TO 50	- DO -	ENKLO150	PARTHAN EP150
	OVER 50	- DO -	ENKLO 320	PARTHAN EP220
300 TO1000	UNDER 20	CIRCULATION	ENKLO 68	PARTHAN EP68
		SPLASH	ENKLO 150	PARTHAN EP150
	20 TO 75	CIRCULATION	ENKLO 150	PARTHAN EP150
		SPLASH	ENKLO 220	PARTHAN EP150
	OVER 75	CIRCULATION	ENKLO 220	PARTHAN EP220
		SPLASH	ENKLO 320	PARTHAN EP320
UNDER 300	UNDER 30	CIRCULATION	ENKLO 320	PARTHAN EP220
		SPLASH	ENKLO 320	PARTHAN EP320
	OVER 30	CIRCULATION	ENKLO 320	PARTHAN EP320
		SPLASH	ENKLO 460	PARTHAN EP460

IN CASE OF SHOCK LOADING, MULTIPLY THE RATED HP BY 1.5 BEFORE USING TABLE.

CONT...







GENERAL RECOMMENDATIONS FOR ENCLOSED SPUR ,BEVEL AND HELICAL GEARS (FOR SPEED REDUCTION UPTO 10:1)

RUBBING SPEED FT	COMPOUNDED/	MILD EP TYPE OF
PER MIN	ANTI WEAR	OIL
UNDER 200	CYNDO TC 680	PARTHAN EP 680
200 - 500	CYNDOL TC 460	PARTHAN EP 460
500 - 1000	ENKLO 320	PARTHAN EP 320
1000 - 2000	ENKLO 220	PARTHAN EP 150

WHILE LUBRICATING OILS ARE THE BEST-SUITED PRODUCTS FOR THE LUBRICATION OF ANY MACHINE ELEMENT, THEIR USE IS NOT FEASIBLE IN SITUATION WHERE THE PRODUCT IS LIKELY TO LEAK OUT AND NOT REMAIN IN BEARING OVER EXTENDED PERIODS OF SERVICE. TO LUBRICATE SUCH SITUATIONS SATISFACTORILY, SOLID TO SEMI-SOLID MATERIALS OF DISPERSIONS OF THICKENING AGENTS IN LIQUID LUBRICANTS AND CONTAINING, IF NECESSARY, OTHER INGREDIENTS FOR IMPARTING SPECIAL PROPERTIES HAVE BEEN DEVELOPED. SUCH MATERIALS ARE KNOWN AS LUBRICATING GREASES.

HINDUSTAN PETROLEUM (HP) GREASE ARE THE OUTCOME OF MANY YEARS OF TECHNICAL AND SCIENTIFIC EXPERIENCE. THE PETROLEUM LUBRICATING OILS USED IN THEIR MANUFACTURE ARE CAREFULLY SELECTED TO GIVE EXCELLENT LUBRICATING CHARACTERISTICS. MODERN MANUFACTURING EQUIPMENT, SCIENTIFICALLY DEVELOPED FORMULAE, CAREFUL SUPERVISION, VAST MANUFACTURING EXPERIENCE AND ACCURATE CONTROLS ENSURE VERY HIGH MANUFACTURING STANDARDS RESULTING IN THE PRODUCTION OF COMPLETE RANGE OF GREASES OF PROVEN QUALITIES REQUIRED TO MEET THE SERVICE CONDITIONS PREVAILING IN THE MODERN SOPHISTICATED INDUSTRIAL MACHINES.





HP LITHON 2, 3, M2

LITHIUM SOAP MULTIPURPOSE GREASES. LITHON M2 CONTAINS MOLYBDENUM DISULPHIDE

MEETS SPECIFICATIONS : IS :7623 GRADE 2 &3, IPSS 1-09-006

APPLICATION AREAS:

THE GREASES MEET THE REQUIREMENTS OF ALL INDUSTRIAL APPLICATIONS FOR PLAIN AND ANTIFRICTION BEARINGS. LITHON M2 IS SUITABLE FOR APPLICATIONS WHERE FRETTING CORROSION NEEDS TO BE AVOIDED (EXAMPLE: IN SPLINED SHAFTS)

PHYSIO CHEMICAL PROPERTIES:

PROPERTIES	LITHON 2	LITHON 3	LITHON M2
COLOUR	YELLOWISH	YELLOWISH	BLACK
NLGI NUMBER	2	3	2
WORKED	265-295	220-250	265-295
PENETRATION			
60X, @ 25 deg C			
DROP POINT,	180	180	180
deg C, MIN			
SOAP TYPE	LITHIUM	LITHIUM	LITHIUM

PERFORMANCE BENEFITS: EXCELLENT WATER RESISTANCE HIGH OXIDATION STABILITY MAXIMUM STRUCTURAL STABILITY SUPERIOR ANTI-RUST AND ANTI-CORROSION PROPERTIES

CONT...



HP LITHON EP1, EP2



LITHIUM SOAP MULTIPURPOSE EXTREME PRESSURE GREASES FORTIFIED WITH EP ADDITIVES WITH HIGHER LOAD CARRYING ABILITY

MEETS SPECIFICATIONS: IS : 7623 GRADE 2&3 EP TYPE, IPSS 1-09-005

<u>APPLICATION AREAS</u>:

THE GREASES MEET THE REQUIREMENTS OF ALL INDUSTRIAL GREASES APPLICATIONS FOR PLAIN AND ANTIFRICTION BEARINGS WHERE HIGHER LOAD BEARING ABILITY AND EXTREME PRESSURE PERFORMANCE ARE REQUIRED

PHYSIO CHEMICAL CHARACTERISTICS:

PROPERTIES	LITHON EP1	LITHON EP2
COLOUR	YELLOWISH	YELLOWISH
NLGI NUMBER	1	2
WORKED	310-340	265-295
PENETRATION 60 X, @25		
deg C		
WORKED	+OR-30 OF 60X	+OR-30 OF 60X
PENETRATION 1,00000 X,		
@25 deg C		
DROP POINT, deg C, MIN	180	180
TIMKEN OK, lbs(Kg)	45(20.4)	45(20.4)
SOAP TYPE	LITHIUM	LITHIUM
HEAT STABILITY, 100deg	6	5
C,30 HRS,LOSS % WT		
MAX		
FREE ALKALINITY,AS	0.1	0.1
LiOH,%WT MAX		

PERFORMANCE BENEFITS :

EXCELLENT WATER RESISTANCE HIGH OXIDATION STABILITY MAXIMUM STRUCTURAL STABILITY SUPERIOR ANTI-RUST AND ANTI-CORROSION PROPERTIES EXCELLENT EP PERFORMANCE

CONT...



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HP LITHOPLEX 1,2,3

LITHIUM BASE COMPLEX GREASES ESPECIALLY SUOTABLE FOR BALL& ROLLER BEARING LUBRICATION WHERE LONG LIFE AND TROUBLE FREE PERFORMANCE ARE REQUIRED

MEETS SPECIFICATONS; NLGI 1, 2, 3 RESPECTIVELY

APPLICATION AREAS :

IN BALL AND ROLLER BEARINGS WHERE HIGHER LIFE AND SUPERIOR RESISTANCE TO OIL LEAKAGE & THROW -OFF ARE PRE-REQUISITES

PHYSIOCHEMICAL CHARACTERISTICS:

THOROTEIMICAE ONARAOTERIO HOO.				
LITHOPLEX 1	LITHOPLEX 2	LITHOPLEX 3		
GREEN	GREEN	GREEN		
1	2	3		
310-340	290-305	230-250		
+OR-30 OF 60X	+OR-50 OF 60X	+OR-50 OF 60X		
250	260	260		
-	-	LITHIUM		
COMPLEX	COMPLEX	COMPLEX		
5	5	5		
0.1				
	LITHOPLEX 1 GREEN 1 310-340 +OR-30 OF 60X 250 LITHIUM COMPLEX 5	LITHOPLEX 1LITHOPLEX 2GREENGREEN12310-340290-305+OR-30 OF 60X+OR-50 OF 60X250260LITHIUM COMPLEXLITHIUM COMPLEX55		

PERFORMANCE BENEFITS :

EXCELLENT WATER RESISTANCE OUTSTANDING OXIDATION AND MECHANICAL STABILITY HIGH DROPPING POINT SUPERIOR RESISTANCE TO LEAKAGE AND THROW OFF AT ELEVATED TEMPERATURES





HP Lubricants - Product Data Sheet <u>HP PLUTEK 1, 2</u>



EXTREME PRESSURE GREASES FOR HEAVY DUTY INDUSTRIAL APPLICATIONS DESIGNED FOR HEAVILY LOADED PLAIN AND ANTIFRICTION BEARINGS

MEETS SPECIFICATIONS: NLGI 1, 2 RESPECTIVELY

<u>APPLICATION AREAS</u> :

FOR ALL PLAIN AND ANTIFRICTION HEAVILY LOADED BEARINGS OPERATING AT MODERATE SPEEDS OF 2000 RPM AND TEMPERATURES UPTO 70 DEG C

PHYSIO CHEMICAL PROPERTIES

PROPERTIES	PLUTEK 1	PLUTEK 2
COLOUR	BROWN	BROWN
NLGI NUMBER	1	2
WORKED	310-340	265-295
PENETRATION 60 X,		
@25 deg C		
DROP POINT,deg C,	88	88
MIN		
SOAP TYPE	CALCIUM	CALCIUM
TIMKEN OK LOAD	45(20.4)	45(20.4)
lbs(Kg)		
APPEARANCE	SMOOTH AND	SMOOTH AND
	TACKY	ТАСКУ

PERFORMANCE BENEFITS:

EXCELLENT EP PROPERTIES EXCELLENT ADHESION PROPERTIES SUPERIOR WATER RESISTANCE

CONT...



HP Lubricants - Product Data Sheet LIMAPLEX 0,1,2



THESE ARE CALCIUM COMPLEX GREASES HAVING INHERENT EXTREME PRESSURE ANTI-WEAR, ANTI-FRETTING AND LUBRICITY PROPERTIES DESIGNED TO COVER NEARLY ALL GREASES APPLICATION REQUIREMENTS.THEY ARE SUITABLE FOR USE UNDER BOTH DRY AND WET CONDITIONS AND DUE TO HIGH DROPPING POINT, THEY HAVE LESS TENDENCY TO SOFTEN WITH INCREASING TEMPERATURES.

DRAFTLUBE 1,2

FLUID GREASES HAVING ADHESIVE PROPERTIES WHICH MAKE THEM IDEAL LUBRICANTS FOR FLUTED ROLLER NECKS WEIGHT HOOKS, LOOSE BOSS ARBORS AND OTHER PUROSES IN TEXTILE MILLS

PROPERTIES	LIMAPLEX		DRAFT LUBE		
	0	1	2	1	2
COLOUR	YELLOWISH		AMBER	AMBER	
WORK PENETRATION @25	355-385	310-340	265-295		
DEG C,60 X					
DROP POINT, deg C	260	260	260		
TYPE OF SOAP	CALCI	UM COMPL	EX		
CONSISTENCY				25-35	6-14
MOBILOMETER, SECS.)				(30 gms	(25 gms
				load)	load)





NON-SOAP GREASES

TISON 2

A CLAY THICKENED GREASE HAVING GOOD OXIDATION RESISTANCE AND THERMAL STABILITY FOR USE IN BOTH PLAIN AND ANTI-FRICTION BEARINGS. IT CAN LUBRICATE SATISFACTORILY AT TEMPERATURE UP TO 230°C AND WILL NOT MELT OR SOFTEN APPRECIABLY EVEN AT HIGHER TEMPERATURE.

TISONA M2

ACLAY THICKENED GREASE WITH MOLYBDENUM DISULPHIDE ADDED TO IT TO REDUCE FRICTION AT HIGH TEMPERATURES. FURTHER FORTIFIED WITH ANTI-OXIDATION, ANTI-CORROSION AND ANTIWEAR ADDTITIVES.

TISONAM M2 MEETS IS : 12790-1989 GRADE 3 AND IPSS : 1-09-008

PROPETIES	TISO	NA
	2	M2
COLOUR	BROWN	BLACK
WORKED PENETRATION	260/290	280/310
AT 25°C		
DROP POINT,°C , MIN	250	280

THESE ARE RECOMMENDED FOR THE LUBRICATION OF MACHINE ELEMENTS, PLAIN BEARINGS, ANTI-FRICTION BEARINGS OPERATING AT HIGH TEMPERATURE.

> PRESS TO RETURN



METAL CUTTING FLUIDS

THERE HAVE BEEN GREAT STRIDES IN MACHINE TOOL DESIGN AND CUTTING TOOL MATERIALS DUE TO NEW INDUSTRIAL MATERIALS DEVELOPED, HIGHER PRODUCTION DEMANDS AND THE EVER-SMALLER TOLERANCES TO WHICH COMPONENTS HAVE TO BE MACHINED. THIS HAS LED TO CORRESPONDING ADVANCES IN CUTTING FLUID TECHNOLOGY. CUTTING FLUIDS PLAY AN IMPORTANT ROLE IN SPEEDING UP PRODUCTION BY ENABLING INCREASED RATES OF METAL REMOVAL TO BE USED, AND BY REDUCING OR EVEN ELIMINATING PROBLEMS ASSOCIATED WITH SEVERE AND HAZARDOUS MACHINING OPERATIONS.

HPCL HAS DEVELOPED A NUMBER OF CUTTING FLUIDS, EACH GRADE SELECTIVELY FORMULATED TO GIVE OPTIMUM PERFORMANCE ON A WIDE RANGE OF METALS. **HPCL** CUTTING FLUIDS HAVE THE FOLLOWING CHARACTERISTICS.

- THESE CAUSE NO RUSTING OR CORROSION OF MACHINE ,WORK PIECE OR TOOL.
- THESE CAUSE NO DISCOLORATION OR STAINING.
- THESE DO NOT SMOKE OR FOG IN USE.
- THESE DO NOT HAVE OBJECTIONABLE ODOUR.
- THESE DO NOT DECOMPOSE CHEMICALLY IN USE.
- THESE RETAIN THEIR PHYSICAL PROPERTY IN USE.
- THESE DO NOT CONTAIN INGREDIENTS HARMFUL TO THE OPERATOR.

WATER – MIX CUTTING FLUIDS

THESE PRODUCTS ARE EMULSIFIABLE IN WATER AND ARE A BLEND OF REFINED MINERAL OIL BASE STOCKS, EMULSIFIERS, ADDITIVES AND SUITABLE BACTERICIDES. <u>NOTE:</u> SOLUBLE CUTTING OILS ARE NOT RECOMMENDED TO BE USED FOR MACHINING OF MAGNESIUM AND ITS ALLOYS.

CONT...



METAL CUTTING FLUIDS

PREPARATION OF SOLUBLE OIL EMULSION

IN PREPARING THE EMULSION OF SOLUBLE OILS WITH WATER, THE PRODUCT IS ALWAYS ADDED TO THE WATER AND NOT VICE VERSA TO PREVENT INVERSION OF THE EMULSION. THE REQUISITE QUANTITY OF PRODUCT IS ADDED TO TWO OR THREE PARTS OF WATER TO FORM A CONCENTRATED EMULSION, WHICH IS SUBSEQUENTLY DILUTED WITH THE REQUISITE QUANTITY OF WATER. THE EMULSION IS APPLIED COPIOUSLY TO FLOOD THE WORK AND THE TOOL AT THE MACHINING AREA. THIS ENSURES SATISFACTORY PERFORMANCE.

CHECKING OIL CONCENTRATION

THE OIL CONCENTRATION IN AN EMULSION WITH HYDROCHLORIC ACID OR SATURATED SALT SOLUTION SUCH AS EPSOM SLAT. BY NOTING THE OIL QUANTITY THAT HAS SEPARATED, THE VOLUME OF OIL OR WATER TO BE ADDED IN EMULSION CAN BE DETERMINED.

CONTROL OF OFFENSIVE ODOUR IN SOLUBLE OIL EMULSION.

OFFENSIVE ODOUR SOMETIMES DEVELOPS DURING THE USE OF SOLUBLE OILS. IN SOME INSTANCES, THIS HAS BEEN ACCOMPANIED BY A CHANGE OF THE COLOUR OF THE EMULSION. THESE CONDITIONS ARE DEVELOPED IN MOST CASES DUE TO THE PRESENCE OF BACTERIA IN WATER / EMULSIONS. THE SOURCE OF THESE ORGANISMS ARE MANY SUCH AS SWEEPING FROM THE SHOP FLOORS, THE SOURCE OF WATER AND ITS QUALITY, AND UNHYGIENIC PRACTICES IN THE SHOP SUCH AS SPITTING.

CONT...





METAL CUTTING FLUIDS

THE UNDER MENTIONED PREVENTIVE MEASURES ARE HELPFUL FOR CONTROL OF OFFENSIVE ODOUR

- PRE-TREATMENT OF WATER USED IN PREPARING EMULSION
- AVOIDING OIL BLANKET ON THE SURFACE OF EMULSION IN THE SUMP
- AERATION OF EMULSION.
- FREQUENT REMOVAL OF CHIPS AND FINES FROM THE SUMP.
- PERIODIC CLEANING OF THE COOLANT RESERVOIR AND SYSTEM

WATER HARDNESS

HARDNESS IN WATER IS EXPRESSED AS GRAINS OF CALCIUM CARBONATE PER GALLON OR PARTS OF CALCIUM CARBONATE PER MILLION PARTS OF WATER.

PRACTICAL GUIDE FOR CLASSIFYING WATER HARDNESS		
VERY SOFT WATER	LESS THAN 15 PPM	
	(ONE GRAIN PER GALLON)	
SOFT WATER	15 - 50 PPM	
	(1 TO 3 GRAIN PER GALLON)	
MEDIUM HARD WATER	50 - 100 PPM	
	(3 TO 6 GRAIN PER GALLON)	
HARD WATER	100 - 200 PPM	
	(6 TO 12 GRAIN PER GALLON)	
VERY HARD WATER	OVER 200 PPM	
	(ONE 12 GRAINS PER	
	GALLON)	

BETTER EMULSIFICATION SOLUBLE OILS WITH HARD WATER IS OBTAINED BY SOFTENING THE WATER PRIOR TO ITS USE.

CONT...



HP Lubricants - Product Data Sheet HP KOOLKUT 40



THIS IS GENERAL-PURPOSE EMULSIFIABLE OIL AND FORMS MILKY WHITE EMULSION.

<u>MEETS SPECIFICATIONS</u>: IS : 1115 AND ZX OF INDIAN DEFENCE

<u>APPLICATION AREAS</u>:

SUITABLE FOR ALL METALS FOR MACHINING OPERATIONS WHERE EMULSIFIABLE OIL ARE NORMALLY USED. THE RECOMMENDED CONCENTRATION IS BETWEEN 5 TO 10 PERCENT DEPENDING ON THE SEVERITY OF MACHINING.SOMETIMES USED SUCCESSFULLY FOR EVEN GRINDING OPERATIONS

PHYSIOCHEMICAL PROPERTIES

PROPERTIES	KOOLKUT 40
COLOUR, AFTER EMULSIFICATION	MILKY WHITE
KINEMATIC VISCOSITY@40 deg C, MIN,cSt	20
FLASH POINT,COC deg C MIN	150
COPPER CORROSION @100 deg C, MIN	1
CAST IRON CORROSION TEST, 20:1 EMULSION WITH 400	0/1-1
PPM HARD WATER MAX	
EMULSION TEST : 400 PPM HARD WATER,5:1 AND 20:1	0.1ML OF OIL
RATIO	AND 0.2 ML
	CREAM MAX
	PERMITTED

PERFORMANE BENEFITS: GOOD SURFACE FINISH BUILT IN PROTECTION AGAINST BACTERIAL GROWTH EXCELLENT EMULSION STABILITY GOOD HEAT REMOVAL PROPERTIES

CONT...



HP KOOLKUT 60

GENERAL PURPOSE EMULSIFIABLE CUTTING OIL FORMING A TRANSLUCENT EMULSION. THE ULTRA FINE DISPERSION OF THE OIL GLOBULES REDUCES GRINDING WHEEL CLOGGING AND LOW OIL CONTENT EMULSION MAY BE USED SAFELY WITHOUT LOSS OF NON-CORROSIVE PROPERTIES.

MEETS SPECIFICATIONS: IS: 9611–1980

<u>APPLICATION AREAS</u>:

SUITABLE FOR ALL METALS FOR MACHINING OPERATIONS WHERE EMULSIFIABLE OILS ARE NORMALLY USED THE RECOMMENDED CONCENTRATION IS BETWEEN 5 TO 10 PERCENT DEPENDING **SEVERITY** ON THE OF MACHINING.PARTICULARLY **USEFUL** FOR ALL APPLICATIONS WHERE SIGHT OF THE WORK PIECE IS **IMPORTANT**

PHYSICO CHEMICAL CHARECTERISTICS

PROPERTIES	KOOLKUT 60
COLOUR, AFTER	TRANSLUSCENT
EMULSIFICATION	
POUR POINT OF OIL deg C, MAX	18
FLASH POINT,COC deg C MIN	150
COPPER CORROSION @100 deg	1
C, MIN	
CAST IRON CORROSION TEST,	0/1-1
WITH 5:1 AND 20:1 EMULSION	
MAX	
EMULSION TEST : A-EP	PASSES
METHOD AND RATIOS	
B-5:1 AND 20:1 AS PER IS STD	
1115:1986	



CONT...



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HP KOOLKUT EP 66

GENERAL PURPOSE EMULSIFIABLE CUTTING OIL FORMING A YELLOWISH EMULSION WITH EP CHARACTERISTICS FOR MODERATE TO HEAVY DUTY APPLICATIONS

<u>APPLICATION AREAS</u> :

ITS MAIN APPLICATION IS WITH HIGH-SPEED STEEL TOOLS IN PRACTICALLY ALL MAJOR CUTTING PROCESSES AND ON MOST METALS, INCLUDING DIFFICULT ALLOY STEEL. IT IS MORE EFFECTIVE THAN ORDINARY EMULSIFIABLE OILS IN EXTENDING TOOL LIFE. RECOMMENDED CONCENTRATION IS 5 TO 10 PERCENT DEPENDING ON THE SEVERITY OF MACHINING.

PHYSIOCHEMICAL PROPERTIES :

PROPERTIES	KOOLKUT EP 66
COLOUR OF THE OIL , ASTM,	8
MAX	
COLOUR AFTER	YELLOWISH
EMULSIFICATION	
FOUR BALL EP VALUE WELD	200
LOAD, Kg MIN	
COPPER CORROSION @ 100deg C,	2
3 HRS	
EMULSION STABILITY	0.5
WITH D : WATER(ML,CREAM)	
MAX	
	PASSES
WITH S : WATER & H: WATER	

PERFORMANCE BENEFITS: GOOD SURFACE FINISH BUILT IN PROTECTION AGAINST BACTERIAL GROWTH EXCELLENT EMULSION STABILITY GOOD HEAT REMOVAL PROPERTIES MARKED INCREASE IN TOOL LIFE

CONT...



HP Lubricants - Product Data Sheet <u>HP KOOLKUT 70</u>



METAL WORKING FLUID CONTAINING NO OIL BUT CONSISTING OF SPECIAL CORROSION PREVENTIVE ADDITIVES IN WATER. THIS PRODUCT IS SUPPLIED AS CONCENTRATE

<u>APPLICATION AREAS</u>:

RUST PREVENTIVE TYPE OF COOLANT SPECIFICALLY DESIGNED FOR GRINDING AND HIGH SPEED MACHINING. RECOMMENDED DILUTION RATIO WITH WATER IS 2-4 PERCENT

PHYSICOCHEMICAL PROPERTIES:

PROPERTIES	KOOLKUT 70
COLOUR AFTER DILUTION	FLOUROSCENT GREENISH
	YELLOW
COPPER CORROSION @ 100deg C,	1
3HRS, MAX	
pH OF 1:50 SOLUTION IN	9
DISTILLED WATER MAX	
CORROSION RATING 40:1	0
EMULSION IN DISTILLED	
WATER MAX	

PERFORMANCE BENEFITS:

SUPERIOR COOLING PROPERTIES EXCELLENT RUST PREVENTIVE PROPERTIES LOW GRINDING WHEEL CLOGGING

CONT...



HP KOOLKUT 80

SUPERIOR EMULSIFIABLE CUTTING OIL FORMING A WHITE MILKY EMULSION HAVING LONGER LIFE. THE PRODUCT FORMS BIOSTABLE EMULSIONS FACILITATING EASIER HANDLING AND DISPOSAL *MEETS SPECIFICATIONS:* IS: 1115-1993

APPLICATION AREAS:

SUITABLE FOR ALL METALS FOR MACHINING OPERATIONS WHERE EMULSIFIABLE OILS ARE NORMALLY USED.THE RECOMMENDED CONCENTRATION IS BETWEEN 3 TO 5% DEPENDING ON THE SEVERITY OF MACHINING. PRODUCT CAN BE USED SUCCESSFULLY EVEN FOR GRINDING OPERATIONS.

PHYSIO CHEMICAL PROPERTIES:

PROPERTIES	KOOLKUT 80	
COLOUR AFTER EMULSIFICATION	MILKY WHITE	
KINEMATIC VISCOSITY@ 40deg C, MIN,cSt	20	
FLASH POINT, COC, deg C, MIN	150	
COPPER CORROSION@ 100deg C, 3HRS, MAX	1	
CAST IRON CORROSION TEST, 20:1	0/1-1	
EMULSION WITH 400 PPM HARD WATER		
MAX		
EMULSION TEST : 400 PPM HARD WATER,5:1	0.1ML OF OIL AND 0.2 ML	
AND 20:1 RATIO	CREAM MAX PERMITTED	

PERFORMANCE BENEFITS: GOOD SURFACE FINISH BUILT IN PROTECTION AGAINST BACTERIAL GROWTH EXCEPTIONAL EMULSION STABILITY GOOD HEAT REMOVAL PROPERTIES LONG LIFE AND pH STABILITY

CONT...



HP Lubricants - Product Data Sheet SYNTHKOOL 100, 101

SEMI-SYNTHETIC CUTTING FLUID CONSISTING OF CAREFULLY SELECTED RUST PREVENTIVE ADDITIVES AND OTHER PERFORMANCE IMPROVERS, SUPPLIED IN SOLUTION FORM.

<u>APPLICATION AREAS</u>:

RECOMMENDED CONCENTRATION IN THE RATIO OF 2-4% IN WATER. THE RESULTANT SOLUTION PROVIDES EXCEPTIONAL ANTI-RUST & COOLING PROPERTIES WHEN USED IN GRINDING AND OTHER HIGH SPEED MACHINING OPERATIONS. IT IS HIGHLY RESISTANT TO BACTERIAL ATTACK AND PROVIDES LONG LIFE IN USE.

PROPERTIES	SYNTHKOOL 100	SYNTHKOOL 101
APPEARANCE	FLUOROSCENT	FLUOROSCENT YELLOW
	YELLOW	
COPPER STRIP	1	1
CORROSION 3HR @		
100 C, MAX		
CAST IRON		
CORROSION TEST		
1:40 IN DISTILLED		
WATER	0/1-1	
1:40 IN HARD WATER-	0/1-1	
200 PPM		
pH OF 1:40 SOLUTUIN	8-8.5	
IN DISTIILED WATER		

PERFORMANCE BENEFITS: EXTRAORDINARY SURFACE FINISH GOOD HEAT REMOVAL PROPERTIES EXCELLENT RUST PREVENTIVE PROPERTIES LOW CONSUMPTION

CONT...



HP Lubricants - Product Data Sheet HP TRIMOFIN 14, 15,16,18



OILINESS TYPE STRAIGHT CUTTING OILS. BLENDS OF **REFINED MINERAL OILS AND ADDITIVES WITH IMPROVED** WETTING CHARACTERISTICS. THESE OILS ARE OF NON **STAINING TYPE MEETS SPECIFICATIONS:**

TRIMOFIN 18 MEETS IS 3065 TYPE 1 GRADE 2

APPLICATION AREAS:

THESE OILS ARE SUITABLE FOR MACHINING NON FERROUS METALS AND LIGHT MACHINING AND FREE CUTTING OF STEELS. TRIMOFIN 14&15 ARE LIGHT COLOURED LOW VISCOSITY OILS RECOMMENDED FOR MACHINING OF ALL METALS EXCEPT TITANIUM. THESE OILS ARE SPECIALLY **DESIGNED FOR HONING APPLICATIONS. TRIMOFIN 16 & 18** HAVE HIGHER VISCOSITY AND SUPERIOR WETTABILITY. TRIMOFIN 18 IS ACCEPTABLE FOR DRAWING OF NON FERROUS RODS AND TUBING AS WELL.

PROPERTIES		TRIMO	FIN	
	14	15	16	18
KINEMATIC VISCOSITY, CST@	2.2 - 8.4	3.0 - 9.0	20.1 - 24.8	20.1 - 24.8
40 [°] C				
FLASH POINT, COC, C,	110	110	160	150
MIN				(PMCC)
COPPER STRIP CORROSION 3				
HR @ 100 C,	1	1	1	1
(ASTM), MAX				
SAPONIFICATION NUMBER	6.0 – 8.5	6.0 – 8.5	9.0 – 10.5	18 – 21
MG KOH/GM				
ACIDITY ORGANIC,mgKOH /gm	-	-	0.1	0.2
OIL, MAX				
PERFORMANCE BENEF	<u>ITS</u> :			
EXCELLENT COOLING				
EXCELLENT CHIP FLUS	HING PRO	PERTIES		
HIGH WETTABILITY TO PROVIDE MAXIMUM LUBRICITY				
INCREASED TOOL LIFE				
CONT			T	
FOR FURTHER INFORMATION PLEASE CONTACT OUR NEAREST				

REGIONAL OFFICE



HP TRIMOFIN 20



NON STAINING TYPE STRAIGHT CUTTING OIL TREATED WITH CHLORINATED EP ADDITIVE. THIS OIL HAS LOW VISCOSITY AND IS LIGHT IN COLOUR.

<u>APPLICATION AREAS</u> :

PRODUCT IS RECOMMENDED FOR USE IN AUTOMOBILE, BEARING AND WATCH INDUSTRIES FOR HONING, LAPPING AND SUPER FINISHING OPERATIONS OF FERROUS AND NON-FERROUS METALS.

PROPERTIES	HP TRIMOFIN 20
KINEMATIC VISCOSITY @ 40 deg	4-8.4
C,cSt	
FLASH POINT deg C, COC, MIN	110
COPPER CORROSION 3HRS,@100	1
deg C, MAX	
FOUR BALL OK LOAD, Kg, MIN	240

PERFORMANCE BENEFITS:

EXCELLENT FINISH EXCELLENT CHIP FLUSHING PROPERTIES INCREASED TOOL LIFE

CONT...



HP Lubricants - Product Data Sheet <u>HP TRIMOFIN 21</u>



NON STAINING TYPE STRAIGHT CUTTING OIL TREATED WITH CHLORINATED EP ADDITIVE AND FORTIFIED WITH OILINESS ADDITIVES. SUITABLE FOR LIGHT AND MEDIUM CONDITIONS.

<u>MEETS SPECIFICATIONS</u> : IS 3065 TYPE1 GRADE 2

<u>APPLICATION AREAS</u> :

SUITABLE FOR MACHINING OPERATION IN MILD STEELS, CARBON STEELS, NICKEL STEELS AND MANGANESE STEELS. THE PRODUCT IS ALSO SUITABLE FOR COPPER AND ALUMINIUM AND THEIR ALLOYS.

PROPERTIES	HP TRIMOFIN 21
KINEMATIC VISCOSITY @ 40 deg	20-30
C,cSt	
FLASH POINT deg C, COC, MIN	160
COPPER CORROSION 3HRS,@100	3
deg C, MAX	
SAPONIFICATION VALUE mg	9.0-19.0
KOH/gm	
COLOUR, ASTM, MAX	6
CONTAINS	
INACTIVE SULPHUR	NO
ACTIVE SULPHUR	NO
CHLORINE	YES

PERFORMANCE BENEFITS:

GOOD WETTABILITY EXCELLENT EP PROPERTIES SUPERIOR COOLING OF TOOL GOOD CHIP FLUSHING

CONT...



NON STAINING TYPE STRAIGHT CUTTING OIL TREATED WITH EP ADDITIVES AND FORTIFIED WITH OILINESS ADDITIVES. SUITABLE FOR USE IN HIGH SPEED AUTOMATIC MACHINE TOOLS.

MEETS SPECIFICATIONS : IS 3065: 1970 TYPE 2 GRADE 2

<u>APPLICATION AREAS</u> :

SUITABLE FOR USE IN HIGH SPEED AUTOMATIC MACHINE TOOLS STEELS.THE PRODUCT IS SUITABLE FOR FERROUS AND NON FERROUS METALS.

PROPERTIES	HP TRIMOFIN 23	
KINEMATIC VISCOSITY @ 40 deg	27-42	
C,cSt		
FLASH POINT deg C, COC, MIN	160	
COPPER CORROSION 3HRS,@100 deg	2	
C, MAX		
SAPONIFICATION VALUE mg	9	
KOH/gm MIN		
COLOUR, ASTM, DILUTE, MAX	6	
CONTAINS		
INACTIVE SULPHUR	YES	
ACTIVE SULPHUR	NO	
CHLORINE	NO	

PERFORMANCE BENEFITS:

GOOD WETTABILITY EXCELLENT EP PROPERTIES EXCELLENT CHIP FLUSHING AND PENETRATION

CONT...





NON STAINING EP TYPE STRAIGHT CUTTING OIL CONTAINING CHLORINE AND INACTIVE SULPHUR FORTIFIED WITH OILINESS ADDITIVES.

<u>APPLICATION AREAS</u> :

SUITABLE FOR USE IN HIGH SPEED AUTOMATIC MACHINE TOOLS STEELS.THE PRODUCT IS SUITABLE FOR FERROUS AND NON FERROUS METALS.

PROPERTIES	HP TRIMOFIN 26
KINEMATIC VISCOSITY @ 40 deg	23-36
C,cSt	
FLASH POINT deg C, COC, MIN	160
COPPER CORROSION	3
3HRS,@100 deg C, MAX	
COLOUR, ASTM, DILUTE, MAX	8
CONTAINS	
INACTIVE SULPHUR	YES
ACTIVE SULPHUR	NO
CHLORINE	YES

PERFORMANCE BENEFITS:

GOOD WETTABILITY MILD EP PROPERTIES EXCELLENT CHIP FLUSHING AND PENETRATION

CONT...





NON STAINING EP TYPE STRAIGHT CUTTING OIL CONTAINING CHLORINE AND INACTIVE SULPHUR FORTIFIED WITH OILINESS ADDITIVES.

<u>APPLICATION AREAS</u> :

SUITABLE FOR USAGE IN DRILLING TYPE OF OPERATIONS AND IS FOUND TO BE PARTICULARLY USEFUL ON PULL HONING OPERATIONS.

PROPERTIES	HP TRIMOFIN 27
KINEMATIC VISCOSITY @ 40 deg	8.0-17.0
C,cSt	
FLASH POINT deg C, COC, MIN	145
COPPER CORROSION 3HRS,@100	3
deg C, MAX	
COLOUR, ASTM, DILUTE, MAX	6
CONTAINS	
INACTIVE SULPHUR	YES
ACTIVE SULPHUR	NO
CHLORINE	YES

PERFORMANCE BENEFITS:

GOOD WETTABILITY MILD EP PROPERTIES EXCELLENT CHIP FLUSHING PROPERTIES REMARKABLE COOLING PROPERTIES

CONT...



HP Lubricants - Product Data Sheet HP TRIMOFIN 54



STAINING EP TYPE STRAIGHT CUTTING OIL CONTAINING ACTIVE AND INACTIVE SULPHUR FORTIFIED WITH OILINESS ADDITIVES.

<u>MEETS SPECIFICATIONS</u> : IS 3065 TYPE III

<u>APPLICATION AREAS</u> :

LOW VISCOSITY OILS SPECIALLY DEVELOPED FOR DEEP HOLE DRILLING AND PRECISION GRINDING OF ALL KINDS OF STEEL. IT IS ALSO SUITABLE FOR USAGE IN APPLICATIONS LIKE THREAD ROLLING AND OTHER MEDIUM AND HEAVY DUTY FERROUS METAL MACHINING.

PROPERTIES	HP TRIMOFIN 54
KINEMATIC VISCOSITY @ 40 deg	12.7-23.2
C,cSt	
FLASH POINT deg C, COC, MIN	135
SAPONIFICATION VALUE, mg	3
KOH/gm	
COLOUR, ASTM, DILUTE, MAX	7
CONTAINS	
INACTIVE SULPHUR	YES
ACTIVE SULPHUR	YES
CHLORINE	NO

PERFORMANCE BENEFITS : GOOD CHIP FLUSHING PROPERTIES EXCELLENT EP PROPERTIES

CONT...



STAINING EP TYPE STRAIGHT CUTTING OIL CONTAINING ACTIVE SULPHUR AND CHLORINE FORTIFIED WITH OILINESS ADDITIVES POSSESSING MEDIUM VISCOSITY.

<u>APPLICATION AREAS</u> :

MEDIUM VISCOSITY OIL SPECIALLY DEVELOPED FOR HEAVY DUTY APPLICATIONS LIKE GEAR HOBBING, THREAD CUTTING ETC. THE OIL IS ALSO SUITABLE FOR ALL MACHINING OPERATIONS ON HIGH TENSILE STEELS AND FOR LESS SEVERE OPERATIONS ON STAINLESS AND SHEAR RESISTANT ALLOYS.

PROPERTIES	HP TRIMOFIN 55
KINEMATIC VISCOSITY @ 40 deg	32-42
C,cSt	
FLASH POINT deg C, COC, MIN	160
SAPONIFICATION VALUE, mg	-
KOH/gm	
COLOUR, ASTM, DILUTE, MAX	8
CONTAINS	
INACTIVE SULPHUR	NO
ACTIVE SULPHUR	YES
CHLORINE	YES

PERFORMANCE BENEFITS : EXCELLENT HEAT REMOVAL PROPERTIES EXCELLENT EP PROPERTIES SUPERIOR WETTABILITY

CONT...



STAINING EP TYPE STRAIGHT CUTTING OIL CONTAINING ACTIVE SULPHUR AND CHLORINE FORTIFIED WITH OILINESS ADDITIVES POSSESSING MEDIUM VISCOSITY WITH HIGHLY POTENT EP ADDITIVE PACKAGE.

<u>APPLICATION AREAS</u> :

MEDIUM VISCOSITY OIL SUITABLE FOR HEAVY DUTY APPLICATIONS SUCH AS THREADING, BROACHING, TAPPING ETC ON FERROUS METALS.

PROPERTIES	HP TRIMOFIN 56
KINEMATIC VISCOSITY @ 40 deg	32-45
C,cSt	
FLASH POINT deg C, COC, MIN	160
SAPONIFICATION VALUE, mg	-
KOH/gm	
COLOUR, ASTM, DILUTE, MAX	8
CONTAINS	
INACTIVE SULPHUR	YES
ACTIVE SULPHUR	YES
CHLORINE	YES

PERFORMANCE BENEFITS : EXCELLENT HEAT REMOVAL PROPERTIES EXCELLENT EP PROPERTIES SUPERIOR WETTABILITY IMPROVED FINISH INCREASED TOOL LIFE

CONT...





HP TRIMOFIN 58

STAINING EP TYPE STRAIGHT CUTTING OIL CONTAINING INACTIVE SULPHUR POSSESSING MEDIUM VISCOSITY. THE PRODUCT IS DARK IN COLOUR.

<u>APPLICATION AREAS</u> :

MEDIUM VISCOSITY OIL SUITABLE FOR HEAVY DUTY APPLICATIONS SUCH AS THREADING, BROACHING, TAPPING ETC ON FERROUS METALS.

PROPERTIES	HP TRIMOFIN 58
KINEMATIC VISCOSITY @ 40 deg	29-39
C,cSt	
FLASH POINT deg C, COC, MIN	160
CONTAINS	
INACTIVE SULPHUR	YES
ACTIVE SULPHUR	NO
CHLORINE	YES

<u>PERFORMANCE BENEFITS</u> : EXCELLENT HEAT REMOVAL PROPERTIES EXCELLENT EP PROPERTIES SUPERIOR WETTABILITY IMPROVED FINISH INCREASED TOOL LIFE

CONT...





HP TRIMOL 225

NEW GENERATION METAL WORKING PRODUCT BLENDED WITH LOW VISCOSITY REFINED MINERAL OIL AND POTENT CHLORINATED ADDITIVE.

APPLICATION AREAS:

RECOMMENDED FOR ALL MACHINING OPERATIONS INVOLVING HIGH SPEEDS AND LOW TO MODERATE SEVERITY.

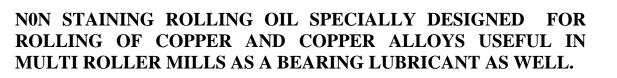
PROPERTIES	HP TRIMOL 225
COLOUR, VISUAL	RED
KINEMATIC VISCOSITY @ 40 deg	2.0-7.0
C, cSt	
FLASH POINT deg C, COC, MIN	90
COPPER CORROSION 3HRS,@100	1
deg C, MAX	
CONTAINS	
INACTIVE SULPHUR	NO
ACTIVE SULPHUR	NO
CHLORINE	YES
INACTIVE SULPHUR ACTIVE SULPHUR	NO

PERFORMANCE BENEFITS : EXCELLENT LUBRICITY SUPERIOR CHIP FLUSHING EFFECTIVE COOLING GREATER PENETRATION





HP ROLMET N34



<u>APPLICATION AREAS</u> :

ROLLING OF COPPER AND ITS ALLOYS SUCH AS BRASS AND GERMAN SILVER. THE OIL CAN BE USED FOR ROLLING IN MULTI ROLLER MILLS SUCH AS SENDZIMER AND SUNDWIG. CAN ALSO BE USED FOR CARBON STEEL AND STAINLESS STEEL STRIPS.

PROPERTIES	HP ROLMET N 34
COLOUR ASTM, MAX	2
KINEMATIC VISCOSITY @ 40 deg	10
C,cSt	
FLASH POINT deg C, COC, MIN	140
COPPER CORROSION 3HRS,@100	1
deg C, MAX	
POUR POINT deg C	0
SAPONIFICATION VALUE,	3
mg/KOH/gm, MAX	

<u>PERFORMANCE BENEFITS</u> : EXCELLENT NON STAINING PERFORMANCE EFFECTIVE COOLING SUPERIOR ROLL LIFE

CONT...



HP ROLMET 40

ROLLING OIL SPECIALLY DESIGNED FOR ROLLING OF BOTH FERROUS AND NON FERROUS METALS SUITABLE FOR USAGE IN SENDZIMER MILLS.

APPLICATION AREAS:

USEFUL FOR ROLLING OF BOTH FERROUS AND NON FERROUS METALS. THIS PRODUCT WILL ALSO ACT AS A LUBRICANT FOR THE PRECISION ROLL SUPPORT BEARING.

PROPERTIES	HP ROLMET 40
COLOUR ASTM, MAX	4
KINEMATIC VISCOSITY @ 40 deg	18-28
C,cSt	
FLASH POINT deg C, COC, MIN	160
COPPER CORROSION 3HRS,@100	1
deg C, MAX	
SAPONIFICATION VALUE,	2.8-4.5
mg/KOH/gm, MAX	

<u>PERFORMANCE BENEFITS</u> : GOOD CORROSION PROTECTION PROPERTIES EFFECTIVE COOLING SUPERIOR ROLL LIFE

CONT...









HP ROLMET V 45, V55

HP ROLMET V45 IS COMPOUNDED ROLLING OIL SPECIALLY DESIGNED FOR ROLLING OF BOTH FERROUS AND NON FERROUS METALS. PARTICULARLY USEFUL FOR COLD ROLLING OF CARBON AND ALLOY STEEL, BRASS AND COPPER.

HP ROLMET V55 IS A HIGHER VISCOSITY OIL FOR ROLLING OF BOTH FERROUS AND NON FERROUS METALS.

APPLICATION AREAS :

USEFUL FOR ROLLING OF BOTH FERROUS AND NON FERROUS METALS.

PROPERTIES	HP ROLMET V	HP ROLMET V 55	
	45		
COLOUR ASTM, MAX	5	6	
KINEMATIC VISCOSITY @ 40	17-28	104-110	
deg C,cSt			
FLASH POINT deg C, COC, MIN	160	190	
COPPER CORROSION	1	1	
3HRS,@100 deg C, MAX			
SAPONIFICATION VALUE,	8-10		
mg/KOH/gm, MAX			
POUR POINT, deg C, MAX	10	10	
NEUTRALISATION NUMBER,	0.5	0.1	
mg/KOH/gm, MAX			
			1

<u>PERFORMANCE BENEFITS</u> : GOOD CORROSION PROTECTION PROPERTIES EFFECTIVE COOLING SUPERIOR ROLL LIFE EXCELLENT WETTING CHARACTERISTICS

> PRESS TO RETURN



QUENCHING OILS

THE TERM QUENCHING NORMALLY REFERS TO THE CONTROLLED COOLING OF STEEL COMPONENTS IN A FLUID TO GIVE SPECIFIED PROPETIES. THE HARDNESS AND THE OTHER PHYSICAL PROPERTIES OBTAINED DEPEND UP ON THE COMPOSITION OF THE STEEL, THE DIMENSION OF THE COMPONENT, THE TIME AND TEMPARATURE OF THE HEAT TREATMENT AND THE SPEED AND DURATION OF THE QUENCHING PROCESS.

A NUMBER OF QUENCHING MEDIUMS SUCH AS MOLTEN SALTS, BRINE SOLUTIONS AND SYNTHETIC QUENCHANTS CAB BE USED, BUT PETROLEUM BASED QUENCHING MEDIA FIND THE WIDEST APPLICATION DUE TO THE FOLLOWING ADVANTAGE.

- THEY ARE EASIER TO CONTROL AND GIVE UNIFORM HARDNESS.
- SUITABLE FOR LARGE SCALE AUTOMATION
- THESE ARE NON-CORROSIVE AND NON TOXIC.

METAQUENCH GRADES HAVE BEEN SPECIALLY FORMULATED FROM HIGHLY REFINED PETROLEUM OILS WITH ADDITIVES AND HAVE THE FOLLOWING CHARACTERISTICS.

- GOOD THERMAL PROPERTIES
- GOOD CHEMICAL AND OXIDATION STABILITY
- HIGH BOILING POINTS AND LOW VOLATILITY
- HIGH FLASH AND FIRE POINTS

CONT...





HP METAQUENCH 39,40

THESE ARE BLENDS OF REFINED BASE OILS AND CONTAIN NO ADDITIVES. METAQUENCH 39 IS RECOMENDED FOR GENERAL PURPOSE QUENCHING OF COMPONENTS AND IS PARTICULARLY SUITABLE FOR QUENCHING OF CYANDIED PARTS. METAQUENCH 40 IS SUITABLE IN SITUATIONS WHEN LOWER QUENCHING SPEED IS DESIRED.

MEETING SPECIFICATIONS :

IS:2664-1980(RE-AFFRMEND IN 1987) STRAIGHT MINERAL TYPE GRADE MEDIUM AND HEAVY RESPECTIVELY.

APPLICATION AREAS: METAQUENCH 39 IS A GENERAL PURPOSE QUENCHING OIL OF ALL COMPONENTS INCLUDING CYANIDED PARTS METAQUENCH 40 IS A GENERAL PURPOSE QUENCHING OIL OF ALL COMPONENTS.

PHYSIO CHEMICAL PROPERTIES :

DDODEDTIE			-
PROPERTIES	HP METAQUENCH 39	HP METAQUENCH 40	
COLOUR ASTM, MAX	2	6	
KINEMATIC VISCOSITY @ 40	23-33	58-73	
deg C,cSt			
FLASH POINT deg C, COC, MIN	190	220	
COPPER CORROSION	1	1	
3HRS,@100 deg C, MAX			
VISCOSITY INDEX, MIN	90	90	
POUR POINT, deg C, MAX	0	0	

PERFORMANCE BENEFITS : GOOD THERMAL CONDUCTIVITY GOOD OXIDATION STABILITY LOW VOLATILITY

CONT...



HP METAQUENCH 42

GENERAL PURPOSE COMPOUNDED QUENCHING OIL SUITABLE FOR QUENCHING OF COMPONENTS FOR CONDITIONS WHEN HIGHER QUENCHING SPEEDS ARE REQUIRED.

MEETING SPECIFICATIONS :

IS:2664-1980(RE-AFFRMEND IN 1987) STRAIGHT MINERAL TYPE GRADE COMPOUNDED.

APPLICATION AREAS:

GENERAL PURPOSE QUENCHING OIL OF ALL COMPONENTS. HOWEVER THIS OIL IS NOT SUITABLE FOR QUENCHING CYANIDED PARTS.

PHYSIO CHEMICAL PROPERTIES :

PROPERTIES	HP METAQUENCH 42
COLOUR ASTM, MAX	2
KINEMATIC VISCOSITY @ 40 deg C,cSt	20-33
	100
FLASH POINT deg C, COC, MIN	190
COPPER CORROSION	1
3HRS,@100 deg C, MAX	
VISCOSITY INDEX, MIN	90
POUR POINT, deg C, MAX	0
SAPONIFICATION	5-15
VALUE,mg KOH/gm, MAX	

PERFORMANCE BENEFITS : GOOD THERMAL CONDUCTIVITY GOOD OXIDATION STABILITY LOW VOLATILITY EXCELLENT WETTING CHARACTERISTICS

CONT...



HP Lubricants - Product Data Sheet <u>HP METAQUENCH 43</u>



QUENCHING OIL WITH EXCELLENT DISPERSANT PROPERTIES. THE OIL IS FORTIFIED WITH CAREFULLY SELECTED DISPERSANT TO PROVIDE MINIMUM QUENCH DISTORTION. <u>MEETING SPECIFICATIONS</u>: IS:2664-1980) ADDITIVE TYPE.

<u>APPLICATION AREAS</u>:GENERAL PURPOSE QUENCHING OIL OF ALL COMPONENTS.SUITABLEFORAPPLICATIONSWHEREDIRTACCUMULATION ON THE METAL IS A BANE.

PHYSIO CHEMICAL PROPERTIES :

PROPERTIES	HP METAQUENCH 43
COLOUR ASTM, MAX	2
KINEMATIC	20-33
VISCOSITY @ 40 deg	
C,cSt	
FLASH POINT deg C,	190
COC, MIN	
COPPER CORROSION	1
3HRS,@100 deg C,	
MAX	
VISCOSITY INDEX,	90
MIN	
POUR POINT, deg C,	0
MAX	

PERFORMANCE BENEFITS : GOOD THERMAL CONDUCTIVITY GOOD OXIDATION STABILITY LOW VOLATILITY MINIMUM QUENCH DISTORTION EXTREMELY LOW SOILING OF METALS BY DIRT

CONT...



HP METAQUENCH 44

QUENCHING OIL WITH EXCELLENT DISPERSANT PROPERTIES. THE OIL IS FORTIFIED WITH CAREFULLY SELECTED DISPERSANT TO PROVIDE MINIMUM QUENCH DISTORTION.COOLING RATES ARE MARKEDLY FASTER ENABLING ACHIEVEMENT OF HIGHER SURFACE HARDNESS <u>MEETING SPECIFICATIONS</u>: IS:2664-1980) ADDITIVE TYPE.

<u>APPLICATION AREAS</u>:

GENERAL PURPOSE QUENCHING OIL OF ALL COMPONENTS.SUITABLEFORAPPLICATIONSWHEREDIRTACCUMULATION ON THE METAL IS A BANEAND WHEREHIGHER SURFACE HARDNESS IS REQUIRED.Note: State S

PHYSIO CHEMICAL PROPERTIES :

PROPERTIES	HP METAQUENCH 44
COLOUR ASTM, MAX	4
KINEMATIC VISCOSITY @ 40	20-33
deg C,cSt	
FLASH POINT deg C, COC,	170
MIN	
COPPER CORROSION	1
3HRS,@100 deg C, MAX	
VISCOSITY INDEX, MIN	90
POUR POINT, deg C, MAX	0

PERFORMANCE BENEFITS : GOOD THERMAL CONDUCTIVITY GOOD OXIDATION STABILITY LOW VOLATILITY MINIMUM QUENCH DISTORTION EXTREMELY LOW SOILING OF METALS BY DIRT SUPERIOR SURFACE HARDNESS OF QUENCHED PARTS

CONT...



HP Lubricants - Product Data Sheet <u>HP METAQUENCH 85</u>



MARQUENCHING OIL SUITABLE FOR USAGE FOR BATH TEMPERATURES 150 TO 220 DEG C. RECOMMENDED FOR ALL MARQUENCHING OPERATIONS WHICH DO NOT REQUIRE A HIGH QUENCH SPEED OIL. <u>MEETING SPECIFICATIONS</u> : IS:4543-1977.

APPLICATION AREAS: SUITABLE FOR MASS PRODUCTION OF HIGH PRECISION, HIGH QUALITY PRODUCTS SUCH AS BEARING RACES GEARS AND OTHER COMPONENTS.

PHYSIO CHEMICAL PROPERTIES :

PROPERTIES	HP METAQUENCH 85
COLOUR ASTM, MAX	2
KINEMATIC	13-18
VISCOSITY @ 100 deg	
C, cSt	
FLASH POINT deg C,	230
COC, MIN	
COPPER CORROSION	1
3HRS,@100 deg C,	
MAX	
VISCOSITY INDEX,	88
MIN	
POUR POINT, deg C,	0
MAX	

PERFORMANCE BENEFITS : GOOD THERMAL CONDUCTIVITY GOOD OXIDATION STABILITY LOW VOLATILITY LOW PREDICTABLE QUENCH DISTORTION HIGH CORE HARDNESS TO QUENCHED PARTS

CONT...



HP Lubricants - Product Data Sheet <u>HP METAQUENCH 86</u>



MARQUENCHING OIL SUITABLE FOR USAGE FOR BATH TEMPERATURES 150 TO 220 DEG C. RECOMMENDED FOR ALL MARQUENCHING OPERATIONS WHICH REQUIRE A HIGH QUENCH SPEED OIL. <u>MEETING SPECIFICATIONS</u>: IS:4543-1977.

APPLICATION AREAS: SUITABLE FOR MASS PRODUCTION OF HIGH PRECISION, HIGH QUALITY PRODUCTS SUCH AS BEARING RACES GEARS AND SHAFTS.

PHYSIO CHEMICAL PROPERTIES :

PROPERTIES	HP METAQUENCH 86
COLOUR ASTM, MAX	6
KINEMATIC VISCOSITY @	14-18
100 deg C, cSt	
FLASH POINT deg C, COC,	230
MIN	
COPPER CORROSION	1
3HRS,@100 deg C, MAX	
VISCOSITY INDEX, MIN	80
POUR POINT, deg C, MAX	0

PERFORMANCE BENEFITS : GOOD THERMAL CONDUCTIVITY GOOD OXIDATION STABILITY LOW VOLATILITY LOW PREDICTABLE QUENCH DISTORTION HIGH CORE HARDNESS TO QUENCHED PARTS HIGH QUENCH SPEEDS







RUBBER PROCESS OILS

RUBBER PROCESS OILS CAN BE BROADLY CLASSIFIED INTO THREE BASIC GROUPS DEPENDING ON THE PHYSICAL ARRANGEMENT OF THE CARBON ATOMS NAMELY, PARAFINICS, NAPTHENICS AND AROMATICS. ALL PETROLEUM OILS ARE MIXTURES OF VARIOUS

ALL PETROLEUM OILS ARE MIXTURES OF VARIOUS HYDROCARBON GROUPS AND THEIR CLASSIFICATION IS ARBITRARY AND IS BASED ON THE PREDOMINANCE OF A PARTICULAR HYDROCARBON GROUP.

<u>HP ELASTO 165, 245,255</u>

PREDOMINANTLY PARAFFINIC RUBBER PROCESS OILS SUITABLE FOR USE AS PLASTICISERS. ELASTO 165 AND 255 ARE HIGHLY PARAFFINIC.

APPLICATION AREAS:

ELASTO 165 IS SUITABLE FOR USE IN EPDM RUBBERS. ELASTO 245 IS PARTICULARY SUITABLE FOR USE IN BUTYL AND EHTYLENE PROPYLENE RUBBERS AND LIGHT COLOURED RUBBERS. ELASTO 255 IS SPECIALLY DEVELOPED FOR SHOE SOLE APPLICATIONS. <u>PHYSIOCHEMICAL PROPERTIES</u>:

	HP ELASTO 165	HP ELASTO 245	HP ELASTO 255	
KINEMATIC VISCOSITY@ 40 deg C, cSt	85-107	31-35	14-18	
ANILINE POINT, deg C MIN	107	98		
FLASH POINT, deg C, COC, WIN	225	190	230	
COPPER CORROSION@ 100 deg C,3HRS, MAX		1	1	
CLAY GEL ANALYSIS ASPHALTENES, % WT POLAR COMPOUNDS, % WT AROMATICS, % WT SATURATES, % WT		NIL 0.6 20.3 79.1		

<u>PERFORMANCE BENEFITS</u> : ADEQUATE MISCIBILITY

CONT...





RUBBER PROCESS OILS

HP ELASTO 541, 590

ELASTO 541 IS NAPTHENIC TYPE OF RUBBER PROCESS OIL SUITABLE AS GENERAL PURPOSE RUBBER OIL. ELASTO 590 IS AROMATIC RUBBER PROCESS OIL

<u>APPLICATION AREAS</u>:

ELASTO 541 IS SUITABLE AS GENERAL PURPOSE OIL IN MANUFACTURE OF FOOTWEAR, MOULDED AND EXTRUDED RUBBER GOODS. ELASTO 590 IS USED TO MAKE THE FABRIC COATING COMPOUND, USED IN COATING NYLON TYRE CORDS OF PASSENGER VEHICLE TYRES.

PHYSIO CHEMICAL PROPERIES :

PROPERTIES	HP ELASTO	HP ELASTO
	541	590
KINEMATIC VISCOSITY@ 40 deg	18-23	100-182 @ 54.5C
C, cSt		
ANILINE POINT, deg C MIN	78	74-96
FLASH POINT, deg C, COC, MIN	160	221
COPPER CORROSION@ 100 deg	1	
C,3HRS, MAX		
CLAY GEL ANALYSIS		
ASPHALTENES, % WT	NIL	0.3
POLAR COMPOUNDS, % WT	2.3	6
AROMATICS, % WT	46.7	-
SATURATES, % WT	51	35-65

PERFORMANCE BENEFITS:

ADEQUATE MISCIBILITY

> EXCELLENT PLASTICISING PROPERTIES

CONT...



RUBBER PROCESS OILS

HP ELASTO 710, 715

ELASTO 710 IS AROMATIC TYPE OF RUBBER PROCESS OIL WITH GOOD SOLVENCY.THE OIL IS DARK IN COLOUR AND HAS GOOD SOLVENCY.IT IS COMPATIBLE WITH MOST RUBBER POLYMERS.

ELASTO 715 IS ALSO AN AROMATIC PROCESS OIL WITH HIGHER VISCOCITY AND IS SPECIFICALLY DEVELOPED FOR USE AS AN EXTENDER OIL IN THE MANUFACTURE OF STYRENE BUTADIENE RUBBER.

<u>APPLICATION AREAS</u> :

SUITABLE FOR USE IN MANUFACTURE OF AUTOMOBILE RUBBER TYRES, BELTING, BATTERY CASE ETC. WHERE COLOUR IS NOT AN IMPORTANT PARAMETER. ELASTO 715 WAS SPECIALLY DEVELOPED FOR USE IN SBS RUBBER. PHYSICO CHEMICAL PROPERTIES :

<u>I III SICO CHEMICAL I KOI EKTIES</u> .		
PROPERTIES	HP ELASTO	
	710	715
VISCOCITY, CST @ 100 deg C	21.25-25	26-47
FLASH POINT COC, C	218	220
ANILINE POINT, C	40-50	32.2-51.6
POUR POINT C MAX	32	26
REFRACTIVE INDEX @ 60 deg C	1.54-1.58	1.562-1.574 @20
		deg C
CLAY GEL ANALYSIS ASTM D 2007		
ASPHALTENES WT %	LESS	-
	THAN 0.1	
POLAR COMPOUNDS WT %	9.2	-
AROMATICS WT%	66.5	-
SATURATES WT %	24.3	-

<u>PERFORMANCE BENEFITS</u> : ADEQUATE MISCIBILITY EXCELLENT PLASTICISING PROPERTIES

RETURN FOR FURTHER INFORMATION PLEASE CONTACT OUR NEAREST

PRESS TO

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RUST PREVENTIVES

RUST AND CORROSION ARE FACTORS OF MAJOR ECONOMIC IMPORTANCE COSTING INDUSTRY AND CONSUMERS ABNORMAL EXPENSES. THIS UNWANTED EXPENDITURE CAN BE CURTAILED/ELIMINATED MARKEDLY THROUGH THE USE OF PETROLEUM BASED TEMPORARY RUST AND CORROSION PREVENTIVES.

VARIOUS PROTECTIVE MEASURES LIKE ALLOYING, PLATING, PAINTING, ETC ARE USED BY THE ENGINEERING INDUSTRY TO PREVENT METALS FROM THE EFFECTS OF CORROSION. WHILE THE MEASURES INDICATED ABOVE ARE OF A PERMANENT / SEMI PERMANENT NATURE, PETROLEUM BASED RUST PREVENTIES FIND WIDE APPLICATION FOR TEMPORARY CORROSION PROTECTION DURING STORAGE AND TRANSPORTATION.

RUSTOP GRADES HAVE BEEN SELECTIVELY FORMULATED FOR VARIOUS APPLICATIONS AND OFFER THE FOLLOWING ADVANTAGES.

- THESE ARE NON STAINING

- THESE ARE COMPATIABLE WITH LUBRICATING OILS AND HENCE THE SURFACE FILM NEED NOT BE REMOVED.
- THESE ARE EASILY APPLIED BY BRUSH, SPRAY OR SWAB.
- THESE ARE EASILY REMOVABLE BY SOLVENT
- THESE ARE ECONOMICAL

CONT...



RUST PREVENTIVES

HP RUSTOP 173, 184

SOLVENT CUT BACK TYPE RUST PREVENTIVE USEFUL UNDER MODERATE CONDITIONS AND FOR INTERIM PROTECTION FROM RUSTING.RUSTOP 173 POSSESSES FINGER PRINT NEUTRALISATION AND WATER DISPLACEMENT CHARACTERISTICS. RUSTOP 184 IS A LIGHT MODERATE DUTY RUST PREVENTIVE GIVING NON DRYING FILM.

<u>APPLICATION AREAS</u> :

RUST PREVENTIVE SPECIALLY DESIGNED FOR APPLICATIONON WIDE RANGE OF SINGLE ITEMS, ON INTERIOR SURFACESWHEREELABORATEPROTECTIONISUNNECESSARY.HOWEVER THESE GRADES SHOULD NOT BEUSED WHERE SMALL ORIFICED CAVITIES OCCUR.

PHYSIOCHEMICAL PROPERIES:

PROPERTIES HP RUSTOP			
	173	184	
APPEARANCE	DULL	DULL	
FLASH POINT,COC deg C	32	32	
,MIN			
NON VOLATILES % WT	19-24	45-50	
COPPER STRIP	1	1	
CORROSION			
AT 3Hrs. 100C ,			
(ASTM),MAX			
WATER DISPLACEMENT	PASS	-	
TEST			
PERFORMANCE BEN	<u>EFITS</u> :		
EASY APPLICATION			
EASILY REMOVABLE	E BY SOLVENT		
LUBRICANT COMPA	ΓIBLE		
WIDE COVERAGE		CONT	
FOR FURTHER INFORMATION PLEASE CONTACT OUR NEAREST REGIONAL OFFICE			





HP Lubricants - Product Data Sheet <u>RUST PREVENTIVES</u>

HP RUSTOP 274, 276

PREMIUM QUALITY SOLVENT CUT BACK TYPE RUST PREVENTIVES USEFUL UNDER MODERATE TO EXTREME CONDITIONS CAPABLE RUST INHIBITION FOR EXTENDED PERIODS. THE PRODUCT CAN BE USED AFTER DILUTION OR AS SUPPLIED

<u>APPLICATION AREAS</u> :

THE PRODUCT IS WIDELY USED AS A FINAL RUST PREVENTIVE IN BALL BEARINGS AND FOR ALLOY STEELS. THE PRODUCT IS COMPATIBLE WITH LUBRICANTS. THE PRODUCT IS USED IN FINAL PACKING STAGE IN MANY CRITICAL APPLICATIONS. RUSTOP 276 IS CAPABLE OF RUST PREVENTION ON EVEN SEVERE SALTY AND HUMID ATMOSPHERES. THE PRODUCTS CAN BE APPLIED BY SPRAY OR SWABS.

PHYSIO CHEMICAL PROPERTIES :

274 DULL NO ACTION	276 DULL NO ACTION
NO ACTION	-
	NO ACTION
10.00	
18-28	20-30
19-24	45-50
1	1
PASS	PASS
8	8
PASS	PASS
_	1 PASS 8

<u>PERFORMANCE BENEFITS</u> : EASY APPLICATION EASILY REMOVABLE BY SOLVENT LUBRICANT COMPATIBLE WIDE COVERAGE SEVERE DUTY RUST PREVENTION

CONT...





HP Lubricants - Product Data Sheet RUST PREVENTIVES

HP RUSTOP 285,286,287,S



PREMIUM QUALITY OIL FILM TYPE RUST PREVENTIVES.THEY ARE LUBRICATING OILS CONTAINING SOLUBLE CORROSION INHIBHITORS. RUSTOP 285 POSSESSES MODERATE WATER DISPLACEMENT CHARACTERISTICS. RUSTOP 286 IS OIL TYPE NON DRYING COMBINATION LUBRICANT CUM RUST PREVENTIVE.

<u>APPLICATION AREAS</u> :

PRODUCTS ARE SUITABLE FOR INTERNAL PROTECTION OF GEAR BOXES, BACK AXLES, ASSEMBLIES, OIL AND FUEL TANKS, IC ENGINES ETC. RUSTOP S IS MOST SUITABLE FOR COLD ROLLED STEEL COMPONENTS. RUSTOP S CAN PROVIDE RUST PREVENTION EVEN IN HUMID AND SALINE ATMOSPHERES.

PHYSIO CHEMICAL PROPERTIES :

	•				
PROPERTIES	HP RUSTOP		HP	HP	
			RUSTOP	RUSTOP	
	285	286	287	S	
APPEARANCE	SLIGHTLY	CLEAR	CLEAR	CLEAR	
	HAZY				
FLASH POINT,COC deg C ,MIN	190	190	216	160	
KINEMATIC VISCOSITY@ 40 deg	25.3-33.2	167-175	253-272	18-24	
C,cSt					
COPPER STRIP CORROSION	1	1	1	1	
AT 3Hrs. 100C , (ASTM), MAX					
SAPONIFICATION VALUE	5.0-7.0	4.4-5.0	4.0-6.0		
mgKOH/gm					

<u>PERFORMANCE BENEFITS</u> : EASY APPLICATION CAN DOUBLE UP AS LUBRICANTS LUBRICANT COMPATIBLE WIDE COVERAGE

CONT...



RUST PREVENTIVES

GREASY FILM TYPE RUST PREVENTIVES.THESE PRODUCTS DO NOT COTAIN ANY SOLVENTS BUT CONTAIN RUST PREVENTING ADDITIVES. APPLICATION OF THESE RUST PREVENTIVES IS BY HOT DIPPING. THEY ARE SOFT WAXY SOLIDS AT ROOM TEMPERATURES.

APPLICATION AREAS:

THESE OILS ARE SPECIALLY DEVELOPED FOR USAGE IN PISTON ASSEBLIES, OIL SEALS TRANSMISSIONS AND TIMER CHAINS. THEY ARE ALSO USED FOR RUST PREVENTION IN ITEMS SUC AS MILLING CUTTERS, PLAIN BEARING INSERTS AND HIGHLY FINISHED GUAGES. <u>PHYSIO CHEMICAL</u> <u>PROPERTIES</u>:

PROPERTIES	HP RUSTOP		
	387	388	
APPEARANCE		LIGHT BROWN	
FLASH POINT,COC deg C ,MIN	218		
KINEMATIC VISCOSITY@ 100		13-24	
deg C,cSt			
COPPER STRIP CORROSION	1	1	
AT 3Hrs. 100C , (ASTM),			
MAX			
PENETRATION , 0.1 mm UNITS UNWORKED	220-270	185-255	

<u>PERFORMANCE BENEFITS</u> : **HEAVY DUTY RUST PROTECTION**





METAL DRAWING COMPOUNDS

A VERY IMPORTANT SEGMENT OF THE METAL WORKING INDUSTRY IS METAL FORMING. IN THIS PROCESS THE METAL INSTEAD OF BEING CUT OR MACHINED, IS FORCED TO FLOW TO ACQUIRE THE DESIRED DIMENSIONS BY THE USE OF THE SUITABLE MECHANICAL EQUIPMENT. METAL FORMING PROCESS INCLUDES OPERATIONS LIKE PRESSING, STAMPING, DEEP DRAWING, WIRE DRAWING, TUBE DRAWING AND FORGING. DURING THESE OPERATIONS CONSIDERABLE AMOUNT OF HEAT AND STRESS ARE GENERATED. HP DRAWMET GRADES ARE TAILOR MADE TO SATISFY THE VARIOUS REQUIREMENTS INCLUDED IN METAL DRAWING / FORGING OPERATIONS.

HP DRAWMET 15, 15S

WIRE DRAWING OIL FORTIFIED WITH HIGH PERFORMANCE WETTING AGENTS. THIS OIL IS SPECIALLY SUITED FOR DEEP DRAWING OF ALUMINIUM

APPLICATION AREAS :

THE PRODUCT HAS BEEN SPECIALLY DEVELOPED FOR ALUMINIUM WIRE DRAWING APPLICATIONS. THIS PRODUCT ENSURES NIL WIRE BREAKAGE AND SCOURING.DRAWMET 15 S IS RECOMMENDED FOR HIGH SPEED DRAWING

PHYSIO-CHEMICAL PROPERTIES :

PROPERTIES	HP DRAWMET 15	HP DRAWMET 15 S
APPEARANCE	CLEAR	CLEAR
FLASH POINT,COC deg C ,MIN	254	200
KINEMATIC VISCOSITY@ 40 deg C,cSt	295	295
NEUTRALISATION NUMBER,mgKOH/mg MAX	0.4	0.4
SAPONIFICATION VALUE mgKOH/gm	17-21	12-19

PERFORMANCE BENEFITS : EXCELLENT COOLING ABILITY SUPERIOR WETTABILITY

CONT...





METAL DRAWING COMPOUNDS

HP DRAWMET 22

GENERAL PURPOSE COMPOUND USED FOR WIRE/TUBE DRAWING OF CARBON STEELS AND DIFFICULT NON FERROUS ALLOYS. THE CREAM COLOURED PASTE CONSISTS OF INERT FILLERS TO IMPART THE REQUISITE FILM STRENTH.

<u>APPLICATION AREAS</u>:

SUITABLE FOR USE AS A COOLANT IN WIRE / TUBE DRAWING OF STEEL AND OTHER DIFFICULT NON FERROUS DRAWS. THIS PRODUCT IS ALSO SUITABLE FOR USE IN PRESSING OPERATIONS.

PHYSIO-CHEMICAL PROPERTIES :

PROPERTIES	HP DRAWMET 22
APPEARANCE	HOMOGENEUS PASTE
COLOUR	WHITISH /CREAM
TOTAL FATTY MATTER % WT	17-20

PERFORMANCE BENEFITS : EXCELLENT COOLING ABILITY EXCELLENT FILM STRENGTH

CONT...



HP Lubricants - Product Data Sheet METAL DRAWING COMPOUNDS

HP DRAWMET 44

NON STAINING, WATER-SOLUBLE CREAM COLOURED PASTE FOR "DRY ON " OR EMULSION APPLICATION. IT IS MANUFACTURED WITH SPECIALLY BALANCED MIXTURE OF SOAP AND FAT. THE RECOMMENDED DILUTION RATIO WITH WATER IS BETWEEN I TO 5 PERCENT DEPENDING UPON THE GAUGE OF WIRE TO BE DRAWN.

APPLICATION AREAS:

THE PRODUCT CAN BE USED FOR DEEP DRAWING OF WIRES,TUBE DRAWING, FORMING, SPINNING AND OTHER SIMILIAR MEDIUM TO HEAVY DUTY OPERATIONS OF CARBON STEELS AND NON FERROUS METALS.

<u>PHYSIO-CHEMICAL PROPERTIES</u> :

PROPERTIES	HP DRAWMET 44
APPEARANCE	HOMOGENEUS PASTE
COLOUR	WHITISH /CREAM
TOTAL FATTY MATTER % VOL/	53
WT	
COPPER STRIP CORROSION AT	1
R.T.ON 10 % SOLUTION 12 HRS	
PENETRATION,0.1 mm UNITS :	320
UNWORKED MAX	
pH OF 10% EMULSION	9-10

<u>PERFORMANCE BENEFITS</u> : EXCELLENT COOLING ABILITY EXCELLENT FILM STRENGTH

CONT...



METAL DRAWING COMPOUNDS

HP DRAWMET 66

LUBRICANT SPECIALLY DEVELOPED FOR OPERATIONS LIKE DIE FORGING WITH MARKED ABILITY TO WITHSTAND HIGH TEMPERATURES DUE TO FORTIFICATION WITH SPECIAL ADDITIVES.

APPLICATION AREAS:

THE PRODUCT CAN BE USED FOR DEEP DRAWING OF WIRES,TUBE DRAWING, FORMING, SPINNING AND OTHER SIMILIAR MEDIUM TO HEAVY DUTY OPERATIONS OF CARBON STEELS AND NON FERROUS METALS.

PHYSIO-CHEMICAL PROPERTIES :

PROPERTIES	HP DRAWMET 66
APPEARANCE	DARK OILY LIQUID
FLASH POINT,COC deg C MIN	182
KINEMATIC VISCOSITY @ 40 deg	215-240
C cSt	
COPPER STRIP CORROSION AT	1
R.T.ON 10 % SOLUTION 12 HRS	
MAX	
SAPONIFICATION NUMBER,mg	2-4
KOH/gm	

PERFORMANCE BENEFITS: EXCELLENT COOLING ABILITY EXCELLENT FILM STRENGTH HIGH TEMPERATURE RESISTANCE





HEAT TRANSFER FLUIDS

HP HYTHERM 500, 600

HYTHERM 500 AND HYTHERM 600 ARE THERMIC FLUIDS DESIGNED TO COVER A BROAD RANGE OF HEAT TRANSFER APPLICATIONS. HYTHERM 500 IS RECOMMENDED IN SERVICES INVOLVING MAXIMUM BULK TEMPARATURES UPTO 285°C. HYTHERM 600 IS RECOMMENDED IN SERVICES WHERE BULK OPERATING TEMPARTURES GO UPTO 305°C EVEN REPLACING SOME SYNTHETIC PRODUCTS.

APPLICATION AREAS :

ALL TYPES OF HEAT TRANSFER APPLICATIONS.THE PRODUCT FINDS EXTENSIVE APPLICATION IN TEXTILE, PHARMACEUTICALS, CHEMICAL AND PROCESSING INDUSTRIES.

PHYSIO-CHEMICAL PROPERTIES :

PROPERTIES	HP HYTHERM 500	HP HYTHERM 600
KINEMATIC VISCOSITY @ 40 C, cSt	27-35	27-38
FLASH POINT COC, C, MIN	194	194
VISCOSITY INDEX	95	100
POWER POINT C MAX	0	0
COPPER STRIP CORROSION 3HR @ 100 C	1	1
(ASTM), MAX		
NEUTRALISATION NUMBER MG KOH/GM, MAX	0.15	0.15
SPECIFIC HEAT KCAL/KG C AT		
260C	0.731	0.741
280C	0.751	0.761
300C	0.772	0.791
THERMAL CONDUCTIVITY, KCAL/HR-MT C AT		
260C	0.097	0.100
280C	0.096	0.099
300C	0.095	0.097

PERFORMANCE BENEFITS:

- **EXCELLENT OXIDATION & CHEMICAL STABILITY.**
- > LOW VOLATILITY, LOW VAPOUR PRESSURE
- > NON CORROSIVE & NON TOXIC
- > EXCELLENT THERMAL CONDUCTIVITY

PRESS TO RETURN





OTHER PRODUCTS



HP UNIPRO 36

SPECIAL RAYON CONING OIL FORTIFIED WITH CAREFULLY SELECTED EMULSIFIER ENABLING EASY REMOVAL FROM RAYON YARN.

<u>APPLICATION AREAS</u>: RAYON CONING OIL USED AS EMULSION

<u>PHYSIO-CHEMICAL PROPERTIES</u> :

PROPERTIES	HP UNIPRO 36
EMULSION TEST	PASS
LOW TEMPARATURE EMULSION	PASS
STABILITY TEST	
KINEMATIC VISCOSITY, cSt, @40C	23
EMULSION STABILITY 3gm/litre(IN SOFT	SHOULD BE
WATER)	STABLE
	EMULSION
PH OF EMULSION,3 gm/litre(IN SOFT	6.8-8.2
WATER)	

PERFORMANCE BENEFITS: GOOD LUBRICITY OXIDATION STABILITY ACCEPTABLE ODOUR EASY REMOVABILITY

CONT...





OTHER PRODUCTS

HP UNIPRO 37

LIGHT COLOURED FINISHING OIL, FORMING A MILKY WHITE EMULSION WITH WATER. THE EMULSION READILY MIXES WITH ALMOST ALL KINDS OF CONVENTIONAL SIZING INGREDIENTS.

APPLICATION AREAS:

ALLKINDS OF TEXTILE FABRICS AS SOFTENING AND FINISHING OIL.

PHYSIO-CHEMICAL PROPERTIES :

PROPERTIES	HP UNIPRO 37
EMULSION TEST	PASS
LOW TEMPARATURE EMULSION	PASS
STABILITY TEST	
KINEMATIC VISCOSITY, cSt, @40C	23
HEAT STABILITY @70 deg C, 2HRS	PASSES
pH OF EMULSION,3 gm/litre(IN SOFT	6.8-8.2
WATER)	

PERFORMANCE BENEFITS: GOOD LUBRICITY OXIDATION STABILITY ACCEPTABLE ODOUR EASY REMOVABILITY EXCELLENTSOFTENING PROPERTIES

CONT...



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OTHER PRODUCTS

HP UNIPRO 38

LIGHT COLOURED FINISHING OIL, FORMING A MILKY WHITE EMULSION WITH WATER. THIS PRODUCT IS SPECIALLY DESIGNED FOR WOOL BATCHING RENDERING IT SOFT AND PLIABLE.

APPLICATION AREAS :

ALLKINDS OF WOOL AS SOFTENING AND FINISHING AGENT. NORMALLY USED AS EMULSION AT 2-5 % CONCENTRATION. IN CERTAIN CASS NEAT OILS ARE USED.

PHYSIO-CHEMICAL PROPERTIES :

PROPERTIES	HP UNIPRO 38
EMULSION TEST	PASS
LOW TEMPARATURE EMULSION	PASS
STABILITY TEST	
KINEMATIC VISCOSITY, cSt, @40C	23
HEAT STABILITY @70 deg C, 2HRS	PASSES
pH OF EMULSION,3 gm/litre(IN SOFT	6.8-8.2
WATER)	

PERFORMANCE BENEFITS: GOOD LUBRICITY OXIDATION STABILITY ACCEPTABLE ODOUR EASY REMOVABILITY EXCELLENTSOFTENING PROPERTIES

CONT...



OTHER PRODUCTS



HP CONKOTE

THIS IS A WATER – SOLUBLE SEMI- SOLID, GREASE LIKE PRODUCT AND HAS BEEN SPECIALLY FORMULATED FOR USE ON CONVEYOR CHAINS IN BOTTLING PLANTS.

APPLICATION AREAS :

THIS PRODUCT IS USED IN THE LPG, SOFT DRINK. MILK BOTTLING PLANTS ETC

PHYSIO-CHEMICAL PROPERTIES :

PROPERTIES	HP CONKOTE
APPEARANCE	BROWN, HOMOGENEOUS
	SEMITRANSPARENT
	GREASE LIKE MASS FREE
	FROM GRAIN PASS
ALKALINITY AS KOH,% WT	1.5
MAX	
pH OF 2% SOLUTION	10
SOLUBILITY 5% SOFT WATER	SHOULD BE
	COMPLETELY SOLUBLE

PERFORMANCE BENEFITS: REDUCE FRICTION PREVENT CORROSION OF CHAINS KEEPS THE DIRT AND OTHER CONTAMINANTS IN SUSPENSION

CONT...





OTHER PRODUCTS

HP SPRAY OIL E

EMULSIFIABLE SPRAY OIL HAVING EXCELLENT WETTNG CHARACTERISTICS. THE PRODUCT IS NOT PHYTOTOXIC AND IS COMPATIABLE WITH MOST INSECTISIDES. THE PRODUCT IS TO BE USED IN DOSAGE OF 2 TO 3 % EMULSION WITH WATER.

APPLICATION AREAS :

RECOMMENDED FOR USAGE IN ORCHARDS, ESPECIALLY APPLE ORCHARDS TO CONTROL SAN JOSE SCALES, MUSSEL SCALES, BROWN AND OLIVE SCALES AND OTHER PESTS

<u>PHYSIO-CHEMICAL PROPERTIES</u> :

PROPERTIES	HP SPRAY OIL 'E'
APPEARANCE	CLEAR
COLOUR, ASTM	6
EMULSION TEST	PASSES
FREEZE TEST	PASSES
POUR POINT, C MAX	0
KINEMATIC VISCOSITY, cSt, @ 40	19
С	

PERFORMANCE BENEFITS:

BIO DEGRADABLE

CONT...





OTHER PRODUCTS

HP GLAMOL 40

GLASS MOULD RELEASE AGENT WHICH DOES NOT LEAVE ANY RESIDUE ON THE GLASS EVEN AT HIGH OPERATING TEMPEATURES. CAN BE USED IN CERTAIN TYPES OF CERAMIC INDUSTRY AS WELL.

APPLICATION AREAS:

MOULD LUBRICANT USED FOR PREPARATION OF ALL TYPES OF GLASS ARTICLES. APPLICATION CAN BE DONE BY MECHANICAL/AUTOMATIC SPRAYING OR WITH SWAB. <u>PHYSIO-CHEMICAL PROPERTIES</u> :

PROPERTIES	HP GLAMOL 40
APPEARANCE	CLEAR
COPPER STRIP CORROSSION @ 100	1
deg C , 3HRS MAX	
COLOUR ASTM MAX	3
KINEMATIC VISCOSITY @ 40 deg C,	21-25
cSt	
FLASH POINT COC deg C MIN	180
NEUTRALISATION NUMBER,mg	0.1
KOH/gm MAX	
PERFORMANCE BENEFITS:	

NO RESIDUE ON THE ARTICLE

EASY APPLICATION

CONT...



OTHER PRODUCTS

HP CEMOL 35, N35

EFFECTIVE MOULD RELEASING AGENT FOR METALIC MOULDS IN CONCRETE CONSTRUCTION WORKS. THE PRODUCT IS A CAREFUL BLEND OF RESINS, PLASTICISERS AND OILS IN SELECTED SOLVENT.

<u>APPLICATION AREAS</u> : ALL TYPES OF CONCRETE MOULDS WITH NORMAL AS WELL AS INTRICATE SURFACES INCLUDING HUME PIPES

PHYSIO-CHEMICAL PROPERTIES :

PROPERTIES	HP CEMOL 35	HP CEMOL N 35
APPEARANCE	SLIGHTLY	CLEAR
	HAZY	
SAPONIFICATION VALUE,		0.55-0.65
mg KOH/gm		
COLOUR ASTM MAX	2.5	3
KINEMATIC VISCOSITY @	1	18-21
40 deg C, cSt		
FLASH POINT TAG deg C	32	165(COC)
MIN		
POUR POINT deg C MAX	0	-3

PERFORMANCE BENEFITS:

EASY APPLICATION WIDE COVERAGE EXTREMELY EASY RELEASES OF CURED CONCRETE NO STAINING OF THE SURFACES.

FOR FURTHER INFORMATION PLEASE CONTACT OUR NEAREST REGIONAL OFFICE

PRESS TO RETURN





LUBRICATION FREQUENCY

PERIODIC LUBRICATION HOLDS WELL IN CASE OF 'ONCE THROUGH' LUBRICATION OR 'TOPPING UP'. IN THE ABSENCE OF THE MACHINERY MANFACTURER'S RECOMMENDATIONS ABOUT THE FREQUENCY OF LUBRICATION, YOU MAY CONSULT THE FOLLOWING LUBRICATION FREQUENCY TABLE THAT IS BASED ON OUR EXPERIENCE WITH OUR LUBRICANTS USED IN VARIOUS TYPES OF MACHINE PARTS. IT MAY SERVE AS A GENERAL GUIDELINE FOR YOUR PLANT.

LUBRICATION POINTS LU	JBRICATION FREQUENCY
GREASE NIPPLE, CUP AND AUTOMATIC	18 TO 24 MONTHS
GREASE LUBRICANTION,	
OPEN GEARS	15 DAY OF 8 HOURS / DAY
	WORKING.
BEARINGS (PLAIN AND ANTIFRICTION)	24 MONTHS
ENCLOSED GEARS (SPUR, WORM BEVEL &	3000 HOURS
HELICAL)	
RING OIL BEARINGS	1500 HOURS
COUPLING (GEARED)	1500 TO 2000 HOURS
HYDRAULIC SYSTEM	9 MONTHS OF 8 HOURS/DAY
	WORKING
COMPRESSORS	6 MONTHS OF 8 HOURS/DAY
	WORKING





HP GREEN ENGINE OIL 15W 40 & 20W 50



PRESS TO RETURN

SPECIAL FEATURES:

CONTROLLED ASH, LOW PHOSPHORUS, SUPERIOR QUALITY ENGINE OIL FOR ENGINES RUNNING ON CNG. SPECIALLY FORMULATED TO MEET THE REQUIREMENTS OF MOBILE ENGINES RUNNING ON CNG.

SPECIFICATIONS:

MEETS THE REQUIREMENTS OF CUMMINS CES 20074 & API CF

APPLICATION AREAS:

HEAVY VEHICLES RUNNING ON CNG.

PROPERTIES	HP GREEN ENGINE OIL 15W 40	HP GREEN ENGINE OIL 20W 50
KINEMATIC VISCOSITY @	14 – 16	18 – 20
100°C, CST		
KINEMATIC VISCOSITY @	120	160
40°C, CST		
VISCOSITY INDEX, MIN	120	118
POUR POINT °C, MAX	-21	-18
SULPHATED ASH % WT MAX	0.6	0.6
TBN MG KOH/G, MIN	4.6	4.6
COLOUR	GREEN	GREEN

PERFORMANCE BENEFITS:

- **GOOD CONTROL ON OXIDATION & NITRATION**
- **>** EXCEPTIONAL CONTROL ON DEPOSITS & WEAR
- > ENSURES ENGINE DURABILITY



HP DIESEL PLUS



APPLICATION AREAS

RECOMMENDED FOR USE WITH DIESEL FUEL IN ALL TYPES OF DIESEL VEHICLES

FUNCTIONS

➢ KEEPS FUEL INJECTORS CLEAN

SPECIAL FEATURES

- > REDUCED EXHAUST EMISSIONS
- > IMPROVED FUEL ECONOMY
- > IMPROVED FUEL STABILITY DURING STORAGE
- > IMPROVED LUBRICITY PARTICULARLY IN LOW SULPHUR DIESELS
- > CORROSION PROTECTION
- > EASY WATER SEPARABILITY FROM FUEL.

SPECIFICATIONS

KINEMATIC VISCOSITY,CST	
@40°C	37.5
DENSITY @ 29.5°C,GM/CC	0.8906
FLASH POINT (PMCC)°C,MIN	56
APPEARANCE	CLEAR

RECOMMENDED DOSAGE 0.5 ML PER LTR OF DIESEL

PACKAGES 100 ML & 200 ML







HP Lubricants - Product Data Sheet <u>HP CRUISE 15W-40</u>

APPLICATION AREAS

ENGINE OIL FOR ALL PASSENGER CARS

SPECIAL FEATURES

A PREMIUM QUALITY MULTIGRADE ENGINE OIL WHICH PROVIDES OUTSTANDING PERFORMANCE IN ALL PETROL ENGINE PASSENGER CARS

SPECIFICATIONS

API SG/CD, MIL-L-46152D & E-PL3/E-DL2 OF 13656-1993

PERFORMANCE BENEFITS

- > OUTSTANDING ENGINE CLEANLINESS & ENHANCED ENGINE LIFE
- > EXCELLENT LUBRICATION OVER A WIDE TEMPERATURE RANGE
- > IMPROVED FUEL ECONOMY
- > COMPATIBLE WITH CATALYTIC CONVERTER
- > NOISE FREE OPERATION

KINEMATIC VISCOSITY,CST	
@100°C	14 – 16
VISCOSITY INDEX,MIN	120
FLASH POINT (COC)°C,MIN	200
POUR POINT°C, MAX	-24
COLOUR,VISUAL	ORANGE
SULPHATED ASH, % WT,MAX	1.03
TBN,MG KOH/G,MIN	6.5

PACKAGES 500 ML, 4 LT & 210 LT







HP GASENOL 20W 50

APPLICATIONS

A HEAVY DUTY MULTIPURPOSE ENGINE OIL SPECIALLY DESIGNED FOR NEW GENERATION ENGINES RUNNING ON CNG & LPG

<u>SPECIAL FEATURES</u>

CONTROLLED ASH FOR BETTER ENGINE HEALTH AND COMPATIBILITY WITH CATALYTIC CONVERTERS.

SPECIFICATIONS

API SF/CC, E-PL2/E-DL 1 of BIS 13656 & MIL-L-46152 B

PARAMETER	20W 50
KINEMATIC VISCOSITY @ 100 DEG C	18-20
KINEMATIC VISCOSITY @ 40 DEG C	160
VISCOSITY INDEX,MIN	110
POUR POINT	-18
SULPHATED ASH % WT MAX	1
TBN MGKOH/GM , MIN	4.94

PERFORMANCE BENEFITS

- **>** EXCELLENT CONTROL ON OXIDATION AND NITRATION
- **EXCEPTIONAL CONTROL ON DEPOSIT AND WEAR**
- > ENSURES ENGINE DURABILITY

RECOMMNEDED FOR USAGE IN ALL LPG & CNG ENGINES







HP MILCY POWER 15W 40

<u>DESCRIPTION</u> PREMIUM MULTIGRADE DIESEL ENGINE OIL

SPECIFICATIONS

HP MILCY POWER HAS BEEN ACCREDITATED WITH API CF-4 DONUT BY API .IT ALSO MEETS MB 228.1 ,CCMC D-4/G-4/PD-2, MIL-L-2104E & ALLISON C-4



<u>APPHCATION AREAS</u> FOR ALL NATURALLY ASPIRATED AS WELL AS TURBO CHARGED DIESEL ENGINES IN COMMERCIAL VEHICLES, UTILITY VEHICLES, CARS & JEEPS, EARTH MOVING & CONSTRUCTION EQUIPMENTS, DG SETS.

KINEMATIC VISCOSITY,CST	
@100°C	14.0 - 15.2
VISCOSITY INDEX,MIN	120
FLASH POINT (COC)°C,MIN	190
POUR POINT°C,MAX	-21
SULPHATED ASH, % WT,MAX	1.52
TBN,MG KOH/G,MIN	9

SPECIAL FEATURES

- LONG DRAIN
- > EXTENDED TBN QUALITY RESERVE
- REDUCED OIL CONSUMPTION & BETTER FUEL ECONOMY
- > EXCELLENT SOOT & SLUDGE CONTROL
- > PROLONGED ENGINE LIFE

PACKAGES 1 LTR, 5 LTR, 20 LTR & 210 LTR DRUMS







HP MILCY TOOFAN 15W 40

SPECIAL FEATURES:

A PREMIUM MULTIGRADE ENGINE OIL DESIGNED TO MEET THE DEMANDING LUBRICATION REQUIRMENTS OF ALL MODERN DIESEL ENGINES

SPECIFICATIONS:

HP MILCY TOOFAN MEETS API CF-4, MACK T-7 / T-8A, E-DL 4 OF IS: 13656: 1993 ENGINE TEST REQUIREMENTS.

APPLICATION AREAS:

- > HEAVY COMMERCIAL VEHICLES, LIGHT COMMERCIAL VEHICLES, TRACTORS, DIESEL PASSENGER CARS AND JEEPS OF LEADING MANUFACTURERS.
- > THE OILS ARE SUITABLE FOR USE IN SUPER CHARGED AND TURBO CHARGED DIESEL ENGINES

PHYSIOCHEMICAL PROPERTIES:

PARAMETER	15W 40
KINEMATIC VISCOSITY @ 100 DEG C	14-16
KINEMATIC VISCOSITY @ 40 DEG C	118
VISCOSITY INDEX,MIN	120
POUR POINT	-21
SULPHATED ASH % WT MAX	1.31
TBN MGKOH/GM , MIN	7.5

PERFORMANCE BENEFITS :

- > REDUCED OIL THICKENING
- > ENHANCED OIL LIFE
- > EASIER COLD STARTING
- > PROLONGED ENGINE LIFE
- > FUEL EFFICIENT ENGINE OIL

PACKAGES:

1 LT, 5 LT., 10 LT, 20 LT. & 210 LT.







HP PETROL PLUS

DESCRIPTION

PREMIUM MULTIFUNCTIONAL ADDITIVE FOR PETROL APPLICATION AREAS

RECOMMENDED FOR ALL GRADES OF PETROL USED AS FUEL IN

- > OLD AS WELL AS NEW VEHICLES
- > VEHICLES WITH OR WITHOUT CATALYTIC CONVERTORS
- > VEHICLES WITH FUEL INJECTION SYSTEM AS WELL AS CARBURETTORS.

SPECIFICATIONS

KINEMATIC VISCOSITY,CST	
@40°C	12
DENSITY @ 29.5°C,GM/CC	0.8615
FLASH POINT (PMCC)°C,MIN	36
APPEARANCE	CLEAR

FUNCTIONS

- KEEPS FUEL INJECTORS AND CARBURETTORS FREE OF GUM AND CARBON DEPOSITS
- KEEPS THE INTAKE VALVES, SPARK PLUGS, FUEL PUMP AND OTHER FUEL SYSTEM COMPONENTS FREE OF ANY DEPOSITS.
- CLEANS UP THE EXISTING DEPOSITS FROM THE ENGINE

> MAINTAINS ACCURATE INJECTION SPRAY PATTERN.

SPECIAL FEATURES

- > EXCELLENT EMISSION CONTROL
- > IMPROVED FUEL ECONOMY
- > IMPROVED POWER & PICK UP
- > IMPROVED DURABILITY & DRIVEABILITY
- > SUPERIOR RUST AND CORROSION CONTROL.

RECOMMENDED DOSAGE: 1 ML PER LTR OF PETROL

PACKAGES:100 ML & 200 ML

PRESS TO RETURN







HP RAIL ROAD OIL 817M

<u>SPECIAL FEATURES</u> GENERATION-V, ZINC-FREE MULTIGRADE CRANKCASE OIL FOR ALL EMD LOCOMOTIVES

<u>SPECIFICATIONS</u> MEETS API CF & LMOA GENERATION-V

<u>APPLICATIONS</u> RECOMMENDED FOR USE IN EMD LOCOMOTIVES OPERATING IN INDIAN RAILWAYS.

PHYSIO-CHEMICAL PROPERTIES :

KINEMATIC VISCOSITY,CST	
@40°C	140
@100°C	15.5-16.3
VISCOSITY INDEX,MIN	110
FLASH POINT (COC)°C,MIN	200
POUR POINT°C,MAX	-21
SULPHATED ASH, % WT,MAX	1.63
TBN,MG KOH/G,MIN	17
ZINC,PPM,MAX	10

PERFORMANCE BENEFITS

- ➢ FUEL ECONOMY
- > **REDUCED LUBE OIL CONSUMPTION**
- > CLEANER ENGINES & LESSER WEAR.

PACKAGES 210 LTR DRUMS





HP Lubricants - Product Data Sheet HP HYLUBE X-3 10 W(KB), 30(KB)

HP HYLUBE X3- 10 W (KB), 30 (KB) ARE PREMIUM QUALITY LUBRICATING OILS FORMULATED ESPECIALLY FOR BEML-KOMATSU. HYLUBE X3- 10W (KB) CAN BE USED AS A HYDRAULIC FLUID AS WELL. THE OILS OFFER EXCELLENT THERMAL AND OXIDATION STABILITY EXCELLENT PERFORMANCE UNDER SEVERE CONDITIONS

MEET API CD/CF, E-DL-2 OF BIS 13656 AND MIL-L-45199B AND BEML-KOMATSU

PROPERTIES	10W(KB)	30(KB)
KINEMATIC VISCOSITY cst @	5.6	9-13
100deg C		
KINEMATIC VISCOSITY cst @	32-39	80-120
40 deg C		
VISCOSITY INDEX,MIN	95	90
POUR POINT, C, MAX	-27	-12
SULPHATED ASH,%WT,MAX	1.85	1.85
TBN ,mgKOH/g,MIN	10.5	10.5
FOAMING		
TENDENCY/STABILITY ml		
SEQ 1	50/10	50/10
SEQ 2	50/10	50/10
SEQ 3	50/10	50/10

APPROVED BY BEML FOR BEML- KOMATSU EQUIPMENT





HP Lubricants - Product Data Sheet HP MILCY EUROL 15W 40



HEAVY DUTY MULTIPURPOSE DIESEL ENGINE OIL SPECIALLY DESIGNED FOR NEW GENERATION HEAVY DUTY DIESEL ENGINES FITTED WITH EMISSION CONTROL DEVICES. THE PRODUCT CARRIES THE ACCREDITION OF API CG-4 MEETS SPECIFICATIONS API CG-4,ACEA E-96 ISSUE 3/B 3-98,ACEA A3-98,VOLVO VDS 2 MB 228.2/3,MAN 270/271 THE OILS ARE SUITABLE FOR USE IN SUPER CHARGED AND TURBOCHAGED DIESEL ENGINES

PROPERTIES	HP MILCY EUROL 15W 40
KINEMATIC VISCOSITY cst @	14-16
100deg C	
KINEMATIC VISCOSITY cst @	110
40 deg C	
VISCOSITY INDEX,MIN	130
POUR POINT, C , MAX	-21
SULPHATED ASH,%WT,MAX	1.62
TBN ,mgKOH/g,MIN	9.0

APPROVED BY LEADING DIESEL ENGINE/VEHICLE MANUFACTURERS LIKE ASHOK LEYLAND





HP Lubricants - Product Data Sheet <u>HP HYLUBE LL 15 W 40</u>



HEAVY DUTY MULTIPURPOSE OIL DESIGNED FOR NEW GENERATION HEAVY DUTY DIESEL ENGINES

MEETS SPECIFICATIONS API CF-4 THE OILS ARE SUITABLE FOR USE IN SUPER CHARGED AND TURBOCHARGED DIESEL ENGINES

PROPERTIES	HP HYLUBE LL 15 W 40
KINEMATIC VISCOSITY cst @ 100deg C	14-15.5
KINEMATIC VISCOSITY cst @ 40 deg C	116
VISCOSITY INDEX,MIN	120
POUR POINT, C , MAX	-21
SULPHATED ASH,%WT,MAX	1.56
TBN ,mgKOH/g,MIN	10.5

RECOMMENDED FOR USAGE AGAINST API CF-4 SPECIFICATION





HP Lubricants - Product Data Sheet <u>HP MAXIMILE 30 FF</u>



HEAVY DUTY MULTIPURPOSE OIL DESIGNED FOR NEW GENERATION HEAVY DUTY DIESEL ENGINES

MEETS SPECIFICATIONS API CD/SF+ MACK T7, E-DL 3/ E-PL2 OF BIS 13656 AND MIL-L-2104 C

THE OILS ARE SUITABLE FOR USE IN SUPER CHARGED AND TURBOCHARGED DIESEL ENGINES

PROPERTIES	HP MAXIMILE 30 FF
KINEMATIC VISCOSITY cst @	11-12.5
100deg C	
KINEMATIC VISCOSITY cst @ 40	105
deg C	
VISCOSITY INDEX,MIN	95
POUR POINT, C , MAX	-6
SULPHATED ASH,%WT,MAX	1.5
TBN ,mgKOH/g,MIN	10

APPROVED BY MAHINDRA & MAHINDRA FOR THEIR FACTORY FILL APPLICATION





HP Lubricants - Product Data Sheet HP LALGHODA PLUS 20 W 40

HEAVY DUTY MULTIPURPOSE DIESEL ENGINE OIL DESIGNED FOR DIESEL ENGINES

MEETS SPECIFICATIONS API CF

THE OILS ARE SUITABLE FOR USE IN SUPER CHARGED AND TURBOCHARGED DIESEL ENGINES

PROPERTIES	HP LALGHODA PLUS 20 W 40
KINEMATIC VISCOSITY cst @ 100deg C	14-16
KINEMATIC VISCOSITY cst @ 40 deg C	110
VISCOSITY INDEX,MIN	110
POUR POINT, C , MAX	-21
SULPHATED ASH,%WT,MAX	1.3
TBN ,mgKOH/g,MIN	7.85

PRODUCT IN THE ECONOMY RANGE

PRESS TO RETURN