



OUR BRANDS



Lubricants Products Data Sheet

HAZARDS IDENTIFICATION:

Our' lubricants products are of low oral and dermal toxicity and under normal conditions of use should present no significant health hazards. Handling precautions should be strictly observed, store in dry place at room temperature. Adequate ventilation in working area may be necessary. The protective measures and storing conditions as usual in the mineral oil industry have to be observed. Lubricants are not classified as dangerous.

FIRST AID:

Eye Contact: Flush eyes with large amounts of water for 10 minutes while holding eyelids open. Always seek medical attention.

Skin Contact: Remove and wash contaminated clothing. Wash exposed portions of the skin with soap and water.

Inhalation: Vapor inhalation under ambient conditions is normally not a problem.

ECOLOGICAL INFORMATION:

In the absence of specific environmental data for this product, this assessment is based on information for general hydrocarbon components found in lubricant mineral oils. Lubricant mineral oils, immediately following a release into the environment, will remain largely on the soil surface, on the water surface and in the water. Based on chemical/physical information from the literature for this product category, no harmful effects to terrestrial or aquatic habitats would be expected. This product is expected to be resistant to biodegradation and to persist in the environment.

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10W-30 / 20W-50

DESCRIPTION:

Super Formula is a distinguished product that provides the ultimate performance for Gasoline and Diesel Engines. It is formulated from Pure Virgin Base Oils (Guaranteed Base Oils Quality, No Recycled oil Spiking). It is blended with highly advanced additives not only to meet the desired performance level rather exceeds it. These additives system contain detergents, dispersants, antioxidants, anticorrosion, antirust, anti-wear and antifoam agents. It is optimized to provide an outstanding protection to all passenger cars and light truck gasoline engines operating under the most severe conditions. Super Formula provides excellent cold starting, high resistance to fouling and possesses low volatility characteristics.

APPLICATIONS:

Super Formula product is multi-grade recommended for Gasoline and Diesel Engines passenger car and light truck four cycles gasoline engines, both naturally aspirated and turbo charged, including those featuring the most recent valve train and emission control technologies. It exceeds the performance requirements of most modern European, Japanese and American car manufacturers. Also, compatible with catalytic converters.

TYPICAL CHARACTERISTICS

Product Code		M1000	M1001
SAE Viscosity Grade		10W-30	20W-50
Specific Gravity:	at 15 °C	0.871	0.896
Viscosity:	at 40 °C, CST	79	190.4
	at 100 °C, CST	11.8	20.5
	at -15 °C, m.Pas	-	9100
	at -25 °C, m.Pas	6600	-
Viscosity Index		144	130
Flash Point, COC		225	242
Pour Point, °C		-27	-24
Color ASTM		2.5	2.5
Sulfated Ash, % Mass		0.78	0.86
TBN, mg KOH/gm		7.1	8.5

BENEFITS:

- Maintains high order of engine cleanliness.
- Better oxidation stability at high temperatures.
- Excellent shear stability, maintaining its viscosity grade.
- Excellent engine protection.
- Eliminates seasonal oil changes.
- Better control of deposit formation.
- Protects against rust, wear and sludge formation

PERFORMANCE:

API SJ/ SL/ CF

HD 30 / HD 40 / HD 50

DESCRIPTION:

HD 40 is a heavy duty product that provides the maximum performance for Gasoline Engines under the most severe conditions. Highly suitable for hot climate. It is formulated from Pure Virgin Base Oils (Guaranteed Base Oils Quality, No Recycled oil Spiking).

APPLICATIONS:

HD is available in several mono-grades oils. It is recommended for use in gasoline engines where oil is meeting the API Service Category API SJ.

TYPICAL CHARACTERISTICS

Product Code		M1002	M1003	M1004
SAE Viscosity Grade		30	40	50
Specific Gravity:	at 15 °C	0.893	0.898	0.901
Viscosity:	at 40 °C, CST	92	157	203
	at 100 °C, CST	11.5	15.5	19
Viscosity Index		105	103	104
Flash Point, COC		242	250	274
Pour Point, °C		-21	-21	-18
Color ASTM		3	2.5	3.5
Sulfated Ash, % Mass		0.73	0.75	0.78
TBN, mg KOH/gm		7.0	7.0	7.0

BENEFITS:

- Keeps engine clean.
- Protects against wear, corrosion and sludge.
- Has good oxidation stability.
- Protects against rust.
- Extend Engine Life under severe condition

PERFORMANCE:

API SJ

10W40 CI4 / 15W40 CI4 / 15W40 CH4 / 15W40 CF4 / 15W40 CF

DESCRIPTION:

Super Formula is a new generation of superb oil that are formulated with Pure Virgin Base Oils (Guaranteed Base Oils Quality, No Recycled Oil Spiking). Is one of the latest top quality multi-grade heavy-duty diesel engine oils developed from advanced concepts in lubrication technology. It exceeds the most severe performance requirements of naturally aspirated, supercharged, and turbo - charged high output diesel engines. These oils meet the API CF and CF4 classification, for severe performance of diesel engine oil.

APPLICATIONS:

Super Formula is a new generation of Diesel engine oil that is suitable for speed diesel engines in heavy duty and are particularly suited for on-highway, heavy duty truck applications. Caterpillar specifically recommends them for use in most of their direct injection diesel engines.

TYPICAL CHARACTERISTICS

Product Code		S1200	M1201	M1202	M1203	M1204
SAE Viscosity Grade		10W40 CI4	15W40 CI4	15W40 CH4	15W40 CF4	15W40 CF
Specific Gravity:	at 15 °C	0.866	0.890	0.890	0.890	0.890
Viscosity:	at 40 °C, CST	101.6	116	116	118	118.3
	at 100 °C, CST	14.72	15.5	15.5	15.6	15.5
	at -15 °C, m.Pas	-	-	-	-	-
	at -25 °C, m.Pas	6930	6840	6840	6840	6840
Viscosity Index		150	141	141	142	139
Flash Point, COC		240	230	230	240	240
Pour Point, °C		-30	-30	-30	-27	-24
Color ASTM		4.5	2.5	2.5	2.5	2.5
Sulfated Ash, % Mass		1.5	1.5	0.98	1.16	1.47
TBN, mg KOH/gm		12.7	12	11.5	11	10.5

BENEFITS:

- Can be used year round and excellent cold starting, all season lubricant and mixed fleet operation.
- Maintains engine cleanliness.
- Control deposit formations.
- High oxidation stability.
- Prolong engine life.
- Superior shear stability.

PERFORMANCE:

API CI-4, CH4,CF4,CF

(1) Industry standard TBN of 10 -12 is targeted, yet high TBN of 15 and 20 can be produced upon customer demand.

HD 30 / HD 40 / HD 50

DESCRIPTION:

HD 40 is a heavy duty product that provides the maximum performance for Diesel Engines under the most severe conditions. Highly suitable for hot climate. It is formulated from Pure Virgin Base Oils (Guaranteed Base Oils Quality, No Recycled oil Spiking). HD Classified as Mono-grade Diesel Engine Oils for both naturally aspirated and supercharged engine, providing good performance in high speed high load, high temperature operation of automotive, construction, and industrial diesel engines requiring API CF performance level oils.

APPLICATIONS:

HD is available in several mono-grades oils. It is recommended for use in high-output diesel engines fitted in automotive, industrial and construction equipment, operating where relatively high sulphur fuel is used and other severe operating conditions are expected

TYPICAL CHARACTERISTICS

Product Code		M1205	M1206	M1207
SAE Viscosity Grade		30	40	50
Specific Gravity:	at 15 °C	0.893	0.9025	0.901
Viscosity:	at 40 °C, CST	92.2	157	239
	at 100 °C, CST	11.5	15.5	20
Viscosity Index		103	100	100
Flash Point, COC		240	254	255
Pour Point, °C		-24	-18	-18
Color ASTM		2.5	3	3
Sulfated Ash, % Mass		0.78	1.01	0.82
TBN, mg KOH/gm		10	10	9.5

BENEFITS:

- Controls high temperature deposits.
- Improves fuel economy.
- Controls low temperature sludge development.
- Reduces oil consumption.
- Improves high temperature varnish.
- Provides protection against rust and oxidation.

PERFORMANCE:

API CF

90 / 140 / 80W90 / 85W90 / 85W140

DESCRIPTION:

XHP Gear is an extreme-pressure automotive gear lubricants formulated from pure virgin base oils and containing special sulfur phosphorous additives to produce a superior gear lubricant with extreme pressure characteristics and thermal stability for automotive applications over a wide range of temperatures.

APPLICATIONS:

Super Gear is recommended for the type of service characteristics of gears particularly hypoid gears in passenger cars and other automotive equipment, and low-speed /high-torque conditions, where loading is severe and maximum gear protection is required.

TYPICAL CHARACTERISTICS

Product Code		M3000	M3001	M3002	M3003	M3004
SAE Viscosity Grade		90	140	80W90	85W90	85W140
Specific Gravity:	at 15 °C	0.901	0.917	0.899	0.897	0.905
Viscosity:	at 40 °C, CST	225	415	229	182	390
	at 100 °C, CST	19	28.8	19.5	18.5	28.34
Viscosity Index		99	101	98	98	100
Flash Point, COC		235	265	232	230	230
Pour Point, °C		-15	-11	-21	-21	-18
Color ASTM		3.5	3.5	3.5	3.5	3.5

BENEFITS:

- Excellent protection against wearing and scuffing produced by high speed and heavy Loads.
- Suitable for a wide variety of applications and Service conditions.
- Superior protection against rusting, staining and Corrosion.
- Excellent load carrying capability and foam Resistance.
- Compatible with seals and gaskets.
- Protects against corrosion of ferrous Components.
- Provides long service life by resisting oxidation & oil thickening.

PERFORMANCE:

API GL5

90 / 140 / 80W90 / 85W90

DESCRIPTION:

Super Max Gear is high quality gearbox lubricants blended from pure virgin base oil and special chemical additives which enhances shear stability to provide excellent protection for gears operating under wide range of temperatures.

APPLICATIONS:

Are recommended for hypoid gear, passenger cars and other automotive equipment operating under high speed/low torque and low speed /high torque conditions, many tractor and agricultural gear sets, oil lubricated track rollers of crawler tractors and many industrial applications for which API GL-4 lubricants are suitable.

TYPICAL CHARACTERISTICS

Product Code		M3005	M3006	M3007	M3008
SAE Viscosity Grade		90	140	80W90	85W90
Specific Gravity:	at 15 °C	0.901	0.905	0.890	0.897
Viscosity:	at 40 °C, CST	220	450	178	182
	at 100 °C, CST	19	29.5	17.5	18.5
Viscosity Index		96	97	98	98
Flash Point, COC		232	245	229	230
Pour Point, °C		-15	-11	-21	-21
Color ASTM		3.5	3.5	3.5	3.5

BENEFITS:

- Provides excellent lubrication.
- Provides good protection against foaming, wear and rust.
- Suitable for trucks and buses operating under heavy duty conditions in high temperature.
- Mild EP automotive gear lubricant.

PERFORMANCE:

API GL-4

68 / 100 / 150 / 220 / 320 / 460 / 680 / 1000

DESCRIPTION:

Industrial Extreme Pressure Gear Lubricants are formulated from pure virgin base oils and selected additive systems containing agents designed primarily to provide maximum protection against wear, corrosion and rust for gears in critical duty service and extreme pressure conditions. It is suitable for wide operating temperature range and has excellent oxidation stability.

APPLICATIONS:

Extreme Pressure Gear Lubricants are recommended primarily for the lubrication of enclosed industrial gears of the spur, helical and straight and spiral bevel types. It offers excellent protection for gear systems operating under the wear and shock-loading conditions commonly experienced in both light-duty and heavy-duty industrial applications.

TYPICAL CHARACTERISTICS

Product Code	S3009	S3010	S3011	S3012	S3013	S3014	S3015	S3016	TEST METHOD
ISO Grade	68	100	150	220	320	460	680	1000	DIN 51511
AGMA Lubricant Number	2EP	3EP	4EP	5EP	6EP	7EP	8EP	-	-
Specific Gravity: at 15 °C	0.886	0.891	0.896	0.901	0.903	0.908	0.913	0.918	ASTMD-4052
Viscosity: at 40 °C, mm ² /s	68.5	98.8	154	223.6	325.6	450	680	1002	ASTM D-445
at 100 °C, mm ² /s	88.8	11.4	15.3	19.3	24.4	30.4	39.1	55.31	ASTM D-445
Viscosity Index	102	99	100	98	96	97	97	106	ASTM D-2270
Flash Point, COC	246	252	252	254	256	258	262	269	ASTM D-92
Pour Point, °C	-15	-15	-15	-12	-9	-9	-9	-9	ASTM D-97
Color	1.5	L2.0	2.0	L2.5	2.5	3.5	4.0	4.5	ASTM D-1500
Timken OK Load	60	60	60	60	70	70	70	70	-
FZG Test, No. Stage Passed -	12	12	12	12	12	12	12	12	-

BENEFITS:

- Multi-functional Extreme pressure gear product incorporating EP and anti-wear agents together with inhibitors to control oxidation, corrosion of both ferrous and nonferrous metals, foaming and emulsification
- Suitable for use with all common application methods including splash and immersion arrangements, gravity feed, forced-drip, spray systems and the re-circulation systems of enclosed gearboxes
- Displays excellent performance in critical areas, such as load-carrying capacity, wear control, thermal stability, corrosion inhibition

PERFORMANCE:

DIN 51517 Part 3

22 / 32(10W) / 37(AW) / 46 / 68 / 100

DESCRIPTION:

HYDRAULIC OILS are blended from pure virgin base oils and selected additive systems containing anti-wear agents, designed primarily for mobile and stationary equipment. Containing a stabilized zinc additive system that provides outstanding anti-wear characteristics, good thermal and oxidation stability.

APPLICATIONS:

HYDRAULIC OILS are recommended for all hydraulic systems using mineral based fluid, particularly in industrial, construction, mining, logging and marine deck machinery. May be used whenever anti-wear hydraulic fluids are specified by equipment manufacturers. Suitable for industrial circulating systems where a rust and oxidation inhibited product is required, and can be used for enclosed gears operating under moderate load conditions.

TYPICAL CHARACTERISTICS

Product Code		M2000	M2001	M2002	M2003	M2004	M2005
SAE Viscosity Grade		22	32(10W)	37(AW)	46	68	100
Specific Gravity:	at 15 °C	0.864	0.877	0.8803/	0.882	0.888	0.891
Viscosity:	at 40 °C, CST	22	32.4	37.54	46.515	69.5	100
	at 100 °C, CST	4.5	5.6	6	6.812	8.9	11.2
Viscosity Index		101	104	104	103	103	99
Flash Point, COC		209	218	224	230	254	260
Pour Point, °C		-30	-30	-27	-24	-25	-15
Color ASTM		0.5	0.5	1	1	1.5	1.5
Neutralization Mg KOH / gm		0.9	0.9	0.9	0.85	0.73	0.85

BENEFITS:

- Excellent anti-wear performance, Protects against Rust and Corrosion.
- Provides good air release in Hydraulic and circulation systems
- Resists oils thickening & formation of deposits.
- Trouble free performance and good filterability.

PERFORMANCE:

DIN 51524 Part 2 , Part 3

SUPER TECH ATF II / III

DESCRIPTION:

Super Tech ATF is an automatic transmission fluid that is manufactured from Single Pure Virgin Base Oil and high performance additive system. Containing VI improves antioxidants, detergents, anti-wear agents, and additives that control friction and improves lubricity characteristics. It serves as a power transmission fluid in torque converters, as hydraulic fluid in control and servo systems, and as a friction controlling medium for clutches and bands.

APPLICATIONS:

Super Tech ATF meets the requirements of most American, Japanese and European manufacturers. The service level is DEX III that is used in all light duty automatic transmissions, transaxles, and power steering systems in which service fill product is specified as Dexron III. May be used as a wide temperature range anti-wear hydraulic fluid for many mobile, industrial and marine applications.

TYPICAL CHARACTERISTICS

Product Code		S4000	S4001
Specific Gravity:	at 15 °C	0.860	0.860
Viscosity:	at 40 °C, CST	35	34.64
	at 100 °C, CST	7.5	7.18
Viscosity Index		180	178
Flash Point, COC		195	188
Pour Point, °C		-45	-45
Color		RED	RED

شركة تيار الخليج الدولية
Global Gulf Stream Co.

BENEFITS:

- Low temperature fluidity.
- Excellent anti-wear properties.
- Resists foaming and preventing malfunction.
- Long fluid life under severe operating conditions with stable properties.

PERFORMANCE:

General Motors DEXRON III, II-E

SYNTHETIC TRANSFORMER OIL

DESCRIPTION:

Our Synthetic Transformer Oil is high performance synthetic transformer oils specially designed to meet the stringent requirements of most modern electrical systems that are required to be filled with insulating oils. It is formulated with premium quality synthetic fluid based on Linear Alkyl Benzene (LAB) which provides excellent oxidation stability and high dielectric strength. This oil is specifically designed for use as insulating liquid in electrical equipment like transformers, capacitors and hollow core cables. These oils exceed the performance requirement of IEC 867:1993 Class II.

APPLICATIONS:

- In Power transformers of different types, shunt reactors, distribution transformers where LAB based oil are recommended by OEM.
- Insulating liquid in electrical equipment like capacitors and hollow core cables.
- Hydraulic cable (including undersea cables), and High Voltage Cable.

TYPICAL CHARACTERISTICS

Product Code	S6000	
Test Parameters	ASTM	Typical Values
Viscosity:	at 20 °C, CST	D 445 8.72
	at 50 °C, CST	D 445 3.69
	at 80 °C, CST	D 445 1.9
Flash Point (PMCC), °C	D 93	140
Pour Point, °C	D 97	<-70
Density @ 200C, kg/l	D 1298	0.858
Total Acid Number, mg KOH/g	D 664	<0.01
Corrosive Sulphur	D 1275B	Non Corrosive
Rust Test	D 665 A/B	PASS
Copper Corrosion, 1hr @ 100 °C	D 130	1A
Breakdown Voltage, Kv	D 877	80
Dielectric Dissipation Factor (DDF) @ 90 °C	D 924	0.001
DC Volume Resistivity @ 90 °C, Ohm mx1010	D 1169	500
Sulphur, ppm	ICP	<10
Chlorine Content, ppm	-	<20
Water Content, ppm	D 6304	15

BENEFITS:

- Excellent thermo-oxidative stability controls deposits in electrical systems, maintains electrical characteristics of the oil improves oil life resulting in improved equipment reliability, availability and efficiency.
- High dielectric strength.
- Resistance to acid and sludge formation.
- Completely wax free with lower pour point that ensures smooth operation at lower temperatures.
- Compatible with elastomers commonly used in electric systems

PERFORMANCE:

Meets IEC.....867 : 1993 Class II

TRANSFORMER OIL INX

DESCRIPTION:

Our Transformer Oil is an inhibited highly-refined naphthenic oil specifically manufactured for use in electric transformers and switchgears as an insulating and heat transfer medium.

APPLICATIONS:

Our Transformer Oil NGX conforms to B.S. 148/1984 and IEC Specification 60296 (03) and can be used as an insulating and cooling medium where oil of high thermal and oxidation stability is required. It is also suitable where good gas absorbing properties are necessary like transformer oil immersed switchgear, circuit breakers etc. Transformer Oil also meets class I (B) and class II (C) of earlier BS 148 and IEC 296 specification

TYPICAL CHARACTERISTICS

Product Code	S6001		
PROPERTIES	UNITS	VALUE	TEST METHOD
Appearance	-	Clear, free from sediments	Visual
Specific Gravity @ 15 °C	-	0.895	ASTM D-4052
Viscosity @ 40 °C	mm ² /s	8.9	ASTM D-445
Viscosity @ -30 °C	mm ² /s	1080	ASTM D-445
Flash Point, PMCC	°C	146	ASTM D-93
Pour Point	°C	-63	ASTM D-97
Acidity	mg KOH/g	< 0.01	IEC 62021
Corrosive Sulfur	-	Non-corrosive	ASTM D1275B
Sulfur content	% wt.	0.01	ISO 14596
Aromatic content	% wt.	10	IEC 60590
Antioxidant Phenols	% wt.	0.38	IEC 60666
Dielectric Dissipation Factor	@ 90 °C	< 0.001	IEC 247
Interfacial Tension	mN/m	50	ISO 6295
Dielectric Strength: (Break Down Voltage)	Before treatment, KV After treatment, KV	40-60 > 70	IEC 156 IEC 296
Oxidation Stability @ 120 °C 500h Neutralization value	mg KOH/g	0.03	IEC 61125 C -
Sludge DDF/ 90 °C	% wt.	< 0.02	-
Water Content	ppm	< 20	ASTM D1533

BENEFITS:

- High dielectric strength.
- Very low pour point.
- Free from acids and corrosive Sulphur.
- Compatible with transformer construction material.

PERFORMANCE:

Meets IEC.....60296 (03)
BS.....148 (1984)

TRANSFORMER OIL

DESCRIPTION:

Our Transformer Oil is un-inhibited highly-refined naphthenic oil specifically manufactured for use in electric transformers and switchgears as an insulating and heat transfer medium.

APPLICATIONS:

Our Transformer Oil conforms to B.S. 148/1984 and IEC Specification 296 (82) and is also used as an insulating and cooling medium where oil of high thermal and oxidation stability is required. It is also suitable where good gas absorbing properties are necessary like transformer oil immersed switchgear, circuit breakers etc. Transformer Oil meets class I and class II of BS 148 and IEC 296 specification

TYPICAL CHARACTERISTICS

Product Code	S6002		
PROPERTIES	UNITS	VALUE	TEST METHOD
Appearance	-	B & C	Visual
Specific Gravity @ 15 °C	-	0.886	ASTM D-4052
Viscosity @ 40 °C	mm ² /s	9.0	ASTM D-445
Viscosity @ -30 °C	mm ² /s	1180	ASTM D-445
Flash Point, PMCC	°C	130	ASTM D-93
Pour Point	°C	-45	ASTM D-97
Dielectric Dissipation Factor	At 90 °C	< 0.001	IEC 247
Interfacial Tension	mN/m	49	ISO 6295
Dielectric Strength: (Break Down Voltage)	Before treatment, KV	40-60	IEC 156
	After treatment, KV	> 70	IEC 296
Oxidation Stability @ 120 °C 500h Neutralization value	mg KOH/g	0.26	IEC 1125 A ASTM D974
Sludge DDF/ 90 °C	% wt.	0.08	-
Water Content	ppm	<20	ASTM D1533
Gassing tendency		< 0.001	IEC 247
Hydrogen	mm ³ / min	< +5	IEC 628 (A)

BENEFITS:

- High dielectric strength.
- Very low pour point.
- Free from acids and corrosive sulphur.
- Compatible with transformer construction material

PERFORMANCE:

Meets IEC.....60296
Former IEC..... 296 (1982)
BS..... 148 (1984)
Former Class.....II/I

COMPRESSOR OIL

DESCRIPTION:

Our Compressor Oils series has been developed to meet the latest changes in air compressor designs, resulting in increased capacity and efficiency. It is formulated from a high grade base stock with a narrow distillation range, containing specially selected additives, which enhance lubricity, anti-wear properties, and protect compressor parts against rust. It is designed to lubricate both cylinders and crankcases. It minimizes carbon and sludge deposits, thereby extending time between service intervals for cleaning valves, ports and intercoolers

APPLICATIONS:

Our Compressor Oil Series is especially suited for Single-stage reciprocating compressors up to 125 PSI, Two-stage reciprocating compressors up to 300 PSI and Multi-stage reciprocating compressors after break-in with air discharge temperature up to 220°C.

TYPICAL CHARACTERISTICS

Product Code	S5000	S5001	S5002	S5003	
ISO Grade	32	46	68	100	
Specific Gravity:	at 15 °C	0.878	0.879	0.884	0.888
Viscosity:	at 40 °C, CST	32	46	68	100.2
	at 100 °C, CST	5.4	6.76	8.6	11.2
Viscosity Index	102	100	97	97	
Flash Point, COC	210	242	248	255	
Pour Point, °C	-12	-9	-9	-12	
Color	1.0	1.5	2	L2.5	
Rust Test	PASS	PASS	PASS	PASS	
CRC % mass of 20% dist.	0.3	0.3	0.3	0.3	

BENEFITS:

- Longer intervals between cleaning of valves, heat Exchangers ports and piping ensures lower maintenance cost.
- Less carbon and deposit formation reduces fire and explosion hazards.
- Single oil, lubricates cylinders and crankcase.
- Suitable for both large and small compressors

PERFORMANCE:

DIN.....51506 VDL

GREASE MP

DESCRIPTION:

Our Grease MP is multi-purpose covering a wide variety of moderate service applications. It is formulated with a lithium 12-hydroxy stearate soap base and solvent-refined high-viscosity index mineral base oils to act as the lubricant. It contains special chemical additives, which enhanced oxidation resistance and special type of polymer to withstand oil separation

APPLICATIONS:

Our Grease MP is recommended for the lubrication of automotive chassis fittings and bearings and for general industrial lubrication where service conditions are moderate. It may be used in passenger cars, vans, trucks, farm tractors and general industrial equipment, machine tools and home appliances.

TYPICAL CHARACTERISTICS

Product Code		S7000	S7001	
PROPERTIES	UNITS	VALUE		TEST METHOD
NLGI Grade	-	2	3	-
Color	-	Light Brown	Light Brown	Visual
Texture	-	Smooth	Smooth	Visual
Thickener Type	-	Lithium	Lithium	-
Mineral Oil Viscosity @ 40 °C	mm ² /s	200.0	200.0	ASTM D-445
@ 100 °C	mm ² /s	17.5	17.5	ASTM D-445
Dropping Point (min)	°C	190	195	ASTM D-2265
Worked Penetration at 25 °C	mm/10	266/295	220/250	ASTM D-217
Oil Separation, mass % (max)	% mass	5	5	ASTM D-1742
Operating Temp	°C	-10 to 120	-10 to 120	-

BENEFITS:

- Long service life.
- Resistance to water washing in moderate conditions.
- Good dispensing characteristics.

GREASE MP HV LS

DESCRIPTION:

Our Grease MP HV LS is chemically stable and neutral grease to Aluminum, zinc and steel. It is formulated with a lithium 12-hydroxy stearate soap base and solvent-refined high viscosity index mineral base oils to act as the lubricant and to protect the layers of conductor against corrosion for the conductor's entire service life. It contains special chemical additives, which enhance oxidation resistance and contains high percentage of soap while comparing to normal General or multipurpose greases.

APPLICATIONS:

Our Grease MP HV LS is recommended for the lubrication of conductors and wires of following category:

- Hard drawn aluminum wires
- Zinc Coated Steel wires
- Aluminum Clad steel wires
- Aluminum-Magnesium-silicon alloy wires.

TYPICAL CHARACTERISTICS

Product Code	S7002		
PROPERTIES	UNITS	VALUE	TEST METHOD
NLGI Grade	-	3	-
Color	-	Light Brown	Visual
Texture	-	Smooth	Visual
Thickener Type	-	Lithium	-
Mineral Oil Viscosity @ 40 °C	cSt	200.0	ASTM D-445
@ 100 °C	cSt	17.5	ASTM D-445
Acid Number	Mg KOH/gm	Report	ISO 6618
Dropping Point	°C	209	ASTM D-2265
Worked Penetration at 25 °C	mm/10	220/250	ASTM D-217
Oil Separation	Wt. %	0.5 max.	ASTM D-1742

BENEFITS:

- Long service life.
- Resistance to water washing in moderate conditions.
- Good stability to hold oil content.
- Protect surface of the wire and is non-corrosive
- Excellent Drop point stability for a longer usage
- Wide ambient temperature stability (The grease shall remain to have its plasticity down to -20 oC to a very hot ambient temperature as its drop point is > 200 oC)

GREASE MP (BLACK)

DESCRIPTION:

Our Grease MP Black is multi-purpose covering a wide variety of moderate service applications. It is formulated with lithium 12-hydroxy stearate soap base and solvent-refined high viscosity index mineral base oils to act as the lubricant. It contains graphite antioxidants and can withstand oil separation. The graphite provides mild EP characteristics. It also performs under moderate to high loads.

APPLICATIONS:

Our Grease MP Black is recommended for the lubrication of automotive chassis Fittings and bearings and for general industrial lubrication where service conditions are moderate to heavy, It may be used in passenger cars, vans, trucks, farm tractors and general industrial equipment, machine tools and home appliances.

TYPICAL CHARACTERISTICS

Product Code	S7003		
PROPERTIES	UNITS	VALUE	TEST METHOD
NLGI Grade	-	3	-
Color	-	Brown Black	Visual
Texture	-	Smooth	Visual
Thickener Type	-	Lithium	-
Mineral Oil Viscosity @ 40 °C	cSt	200.0	ASTM D-445
@ 100 °C	cSt	17.5	ASTM D-445
Dropping Point	°C	195	ASTM D-2265
Worked Penetration at 25 °C	mm/10	220/250	ASTM D-217
Oil Separation	% mass	5.0	ASTM D-1742
Operating Temp	°C	-10 to 120	-
Graphite	% mass	0.7%	-

BENEFITS:

- Good lubrication under moderate to heavy shock loading
- Long service life
- Resistance to water washing in moderate Conditions.
- Good dispensing characteristics.
- Mild EP characteristics

GREASE GP

DESCRIPTION:

Our GP Grease is lithium soap, general-purpose greases specifically formulated to provide effective oxidation resistance, rust and corrosion protection. The use of Lithium soap in these greases provides excellent structural stability throughout their recommended temperature range. They possess high chemical stability and resistance to thermal breakdown and deterioration. They also resist water washing. They contain special type of polymer to withstand oil separation.

APPLICATIONS:

Our GP Greases is recommended for lubrication of rolling element and needle bearings.

The heavier consistency is preferred for vertical shaft and outer race rotating applications. They are suitable for use under either wet or dry conditions. These products are also recommended for the lubrication of plain bearings, cams, ways and other sliding parts when loads are normal and no shock loads are experienced. They may also be used in moderate automotive wheel bearing and chassis service.

TYPICAL CHARACTERISTICS

Product Code		S7004	S7005	
PROPERTIES	UNITS	VALUE		TEST METHOD
NLGI Grade	-	2	3	-
Color	-	Light Blue	Light Blue	Visual
Texture	-	Smooth	Smooth	Visual
Thickener Type	-	Lithium	Lithium	-
Mineral Oil Viscosity @ 40 °C	mm ² /s	200.0	200.0	ASTM D-445
@ 100 °C	mm ² /s	17.5	17.5	ASTM D-445
Dropping Point (min)	°C	190	195	ASTM D-2265
Worked Penetration at 25 °C	mm/10	266/295	220/250	ASTM D-217
Oil Separation, mass % (max)	% mass	5	5	ASTM D-1742
Operating Temp	°C	-10 to 130	-10 to 130	-

BENEFITS:

- Wide range of usable temperatures.
- Protection against rust and corrosion.
- Resistance to water-washing and wet conditions.
- Good dispensing characteristics.
- General-purpose capability reduces plant inventory of greases.

GREASE GP (Zinc Free)

DESCRIPTION:

Our GP Grease ZF is a Zinc Free with lithium soap base. It is a general-purpose greases specifically formulated to provide effective oxidation resistance, rust and corrosion protection. The use of lithium soap in this grease provides excellent structural stability throughout their recommended temperature range. It possesses high chemical stability and resistance to thermal breakdown and deterioration. It also resists water washing. It contains special type of polymer to withstand oil separation.

APPLICATIONS:

Our GP zinc free Grease is recommended for lubrication of rolling element and needle bearings. The heavier consistency is preferred for vertical shaft and outer race rotating applications. This is suitable for use under either wet or dry conditions. This product is also recommended for the lubrication of plain bearings, cams, ways and other sliding parts when loads are normal and no shock loads are experienced. They may also be used in moderate automotive wheel bearing and chassis service.

TYPICAL CHARACTERISTICS

Product Code	S7006		
PROPERTIES	UNITS	VALUE	TEST METHOD
NLGI Grade	-	3	-
Color	-	Light Blue	Visual
Texture	-	Smooth	Visual
Thickener Type	-	Lithium	-
Mineral Oil Viscosity @ 40 °C	cSt	200.0	ASTM D-445
@ 100 °C	cSt	17.5	ASTM D-445
Dropping Point	°C	200	ASTM D-2265
Worked Penetration at 25 °C	mm/10	220/250	ASTM D-217
Oil Separation	% mass	5.0	ASTM D-1742
Operating Temp	°C	-10 to 120	-
Rust Test	-	Pass	ASTM D-1743

BENEFITS:

- Wide range of usable temperatures.
- Protection against rust and corrosion.
- Resistance to water-washing and wet conditions.
- Good dispensing characteristics.
- General-purpose capability reduces plant inventory of greases.

GREASE – EP

DESCRIPTION:

Our EP Grease series is extreme pressure lithium soap grease, which contains oxidation, rust and corrosion inhibitors and provides excellent EP properties. The use of a lithium soap base ensures effective resistance to softening under severe working conditions, efficient water resistance and a consistency, which remains relatively constant over the recommended range of operating temperatures. Our EP Grease is non-corrosive to both steel and copper. The latter is of importance because of the use of bronze cages in many anti-friction bearings. The grease exhibits effective resistance to bleeding and superior resistance to water washout.

APPLICATIONS:

Our EP Grease is recommended for lubrication of plain and rolling element bearings in normal through heavy-duty industrial applications. It is suitable where loads are high or shock loads are present. It resists water washing and provides rust protection for bearings if water is present. The softer grades are particularly suitable for use in centralized lubrication systems. Can be used for both automotive and industrial applications.

TYPICAL CHARACTERISTICS

Product Code		S7007	S7008	S7009	S7010	S7011	
PROPERTIES	UNITS	VALUE					TEST METHOD
NLGI Grade	-	00	0	1	2	3	-
Color	-	Dark Brown	Visual				
Texture	-	SF	Smooth	Smooth	Smooth	Smooth	Visual
Thickener Type	-	Lithium	Lithium	Lithium	Lithium	Lithium	-
Mineral Oil Viscosity@ 40 °C	mm ² /s	200.0	200.0	200.0	200.0	200.0	ASTM D-445
@ 100 °C	mm ² /s	17.5	17.5	17.5	17.5	17.5	ASTM D-445
Dropping Point (min)	°C	170	180	185	195	195	ASTM D-2265
Worked Penetration at 25 °C	mm/10	400/430	355/385	310/340	265/295	220/250	ASTM D-217
Oil Separation, mass % (max)	% mass	-	-	-	5.0	5.0	ASTM D-1742
Operating Temp	°C	-10 to 130					
Rust Test	-	Pass	Pass	Pass	Pass	Pass	ASTM D-1743

BENEFITS:

- Superior lubrication under heavy and shock loading.
- Excellent load carrying ability.
- Excellent resistance to water washing.
- Effective rust protection and corrosion resistance.

LITHCOMP-EP**DESCRIPTION:**

Our Lithcomp EP is a premium, Lithium Complex industrial and automotive lubricating grease for plain and anti-friction bearings. Available in NLGI grades 2 and 3, Lithcomp EP is shear and oxidation stable, provides protection against rust and oxidation while resisting softening at higher temperatures.

APPLICATIONS:

Our Lithcomp EP Grease is primarily designed for the lubrication of steel roll mill bearings. This grease is ideal for the lubrication of bearings used in industry under high operating temperatures. Operating temperatures can vary between -20 °C to +180 °C. For operating temperatures above 160 °C the grease has to be frequently replenished. Our Lithcomp grease can be used in automotive wheel bearings of vehicles subjected to occasional high temperature as may occur in vehicles with disc brakes.

TYPICAL CHARACTERISTICS

Product Code		S7012	S7013	
PROPERTIES	UNITS	VALUE		TEST METHOD
NLGI Grade	-	2	3	-
Color	-	Light Blue	Light Blue	Visual
Texture	-	SF	Smooth	Visual
Thickener Type	-	Lithium Complex	Lithium Complex	-
Dropping Point (min)	°C	280	285	ASTM D-2265
Timken OK Load	kg	18	18	ASTM D-2509
Worked Penetration at 25 °C	mm/10	265/295	220/250	ASTM D-217
Oil Separation, mass % (max)	% mass	3.0	3.0	ASTM D-1742
Operating Temp	°C	-20 to +180	-20 to +180	-
Rust Test	-	Pass	Pass	ASTM D-1743

BENEFITS:

- Longer life at higher temperatures.
- Shear and oxidation stable.
- Excellent wear protection.
- Resists softening at elevated temperatures.
- Wide application range

MOLY GREASE

DESCRIPTION:

Our Moly Grease is formulated with a lithium 12-hydroxy stearate soap thickener and solvent-refined high-viscosity index mineral base oil to act as the lubricant. It contains special chemical additives, that enhance oxidation resistance and rust protection and provide extreme pressure protection.

Our Moly Grease contains micronized molybdenum disulfide (MoS₂). This grease forms an adhering film on metallic surfaces to provide additional protection against scoring. This makes the grease especially suitable for equipment operating under slow speed-high load conditions. The use of Lithium 12-hydroxy stearate as the soap base ensures effective resistance against softening under severe working conditions, good water resistance and consistency, which remains relatively constant over the recommended operating temperature range.

APPLICATIONS:

Our Moly Grease is recommended for automotive and industrial applications where equipment is highly loaded and operates at slow speed. Good for automotive chassis and bearing applications in cars, vans, trucks, mining and construction vehicles, and tractors, especially those operating in dusty or wet areas.

TYPICAL CHARACTERISTICS

Product Code		S7014	
PROPERTIES	UNITS	VALUE	TEST METHOD
NLGI Grade	-	2	-
Color	-	Grey Black	Visual
Texture	-	Smooth	Visual
Thickener Type	-	Lithium	-
Mineral Oil Viscosity @ 40 °C	mm ² /s	200.0	ASTM D-445
@ 100 °C	mm ² /s	17.5	ASTM D-445
Dropping Point (min)	°C	190	ASTM D-2265
Rust Test	-	Pass	ASTM D-1743
Timken OK Load	kg	18	ASTM D-2509
Worked Penetration at 25 °C	mm/10	220/250	ASTM D-217
Oil Separation, mass % (max)	% mass	5.0	ASTM D-1742
Operating Temp	°C	-10 to 140	-
MoS ₂	% mass	2.0	ASTM D-4954

BENEFITS:

- Excellent wear protection.
- Excellent load carrying ability
- Effective retention under shock load conditions.
- Long service life.
- Resistant to water washing.
- Good dispensing characteristics

HI-TEMP GREASE

DESCRIPTION:

Our Hi-Temp Grease is formulated with an inorganic thickener and highly refined base oil. It contains EP agent and rust inhibitors. Our Hi-Temp Grease possesses resistance to water washing and provides effective protection against rust and corrosion for both ferrous and non-ferrous metals.

APPLICATIONS:

Our Hi-Temp Grease is recommended for applications where continuous high temperatures or intermittent very high temperatures are experienced. The maximum usable temperature for Hi-Temp Grease for extended service is 200 °C.

TYPICAL CHARACTERISTICS

Product Code	S7015		
PROPERTIES	UNITS	VALUE	TEST METHOD
NLGI Grade	-	2	-
Color	-	Grey Black	Visual
Texture	-	Smooth	Visual
Thickener Type	-	Bentonite	-
Mineral Oil Viscosity @ 100 °C	mm ² /s	25.0	ASTM D-445
Dropping Point (min)	°C	> 300	ASTM D-2265
Rust Test	-	Pass	ASTM D-1743
Timken OK Load	kg	> 40	ASTM D-2509
Worked Penetration at 25 °C	mm/10	255/295	ASTM D-217
Oil Separation, mass % (max)	% mass	< 1	ASTM D-1742
Operating Temp	°C	Stationary Sys max 200	-
	°C	Circulation Sys max 275	-
MoS2	% mass	.25	ASTM D-4951

BENEFITS:

- Thickener does not melt, extremely high dropping point.
- Will not soften and leak from bearings exposed to high temperature.
- Resistance to water washing, steam and humid conditions.
- Consistency maintained despite cycling temperature conditions.
- Good pump ability.
- Molybdenum enhanced EP characteristics

SUPER HI-TEMP GREASE**DESCRIPTION:**

Our Super Hi-Temp Grease is formulated with an inorganic thickener and highly refined base oil. It contains EP agent and rust inhibitors. Our Super Hi-Temp Grease possesses resistance to water wash and provides effective protection against rust and corrosion for both ferrous and non-ferrous metals.

APPLICATIONS:

Our Super Hi-Temp Grease is recommended for applications where continuous high temperatures or intermittent very high temperatures are experienced. The maximum usable temperature for Hi-Temp Grease for extended service is 220 °C. Our Super Hi-Temp Grease is recommended for application such as furnace door bearings and kiln car wheel bearings and for general industrial lubrication where non-melting grease is required. It can also be used in ambient temperature applications such as roll neck bearings where high resistance to water washing is needed.

TYPICAL CHARACTERISTICS

Product Code	S7016		
PROPERTIES	UNITS	VALUE	TEST METHOD
NLGI Grade	-	2	-
Color	-	Grey Black	Visual
Texture	-	Smooth	Visual
Thickener Type	-	Bentonite	-
Mineral Oil Viscosity @ 100 °C	mm ² /s	25.0	ASTM D-445
Dropping Point (min)	°C	> 300	ASTM D-2265
Timken OK Load	kg	> 40	ASTM D-2509
Worked Penetration at 25 °C	mm/10	255/295	ASTM D-217
Oil Separation, mass % (max)	% mass	< 1	ASTM D-1742
Operating Temp	°C	Stationary Sys max 200	-
	°C	Circulation Sys max 275	-
MoS ₂	% mass	2.0	ASTM D-4951

BENEFITS:

- Thickener does not melt, extremely high dropping point.
- Will not soften and leak from bearings exposed to high temperature.
- Resistance to water washing, steam and humid conditions.
- Consistency maintained despite cycling temperature conditions.
- Good pump ability.
- Molybdenum enhanced EP characteristics

ANTI-FREEZE COOLANT**DESCRIPTION:**

Our Anti-Freeze Coolant Series is recommended for use in liquid cooling systems of automotive and industrial gasoline and diesel engines. They are available in various concentrations ready for use. The higher boiling points of Our Anti-Freeze coolants are beneficial in hot weather and at high altitudes. Glycol concentrations are given in Table, balance is water with special additives.

APPLICATIONS:

Our Anti-Freeze Coolant Series protects cooling systems of gasoline and diesel engines against rust in all seasons. They provide ideal cooling, effective protection against corrosion and scale deposit formation in the cooling systems year-round, resulting in longer radiator life and lower maintenance cost.

TYPICAL CHARACTERISTICS

Product Code		S8000	S8001	S8002	S8003	S8004	
PROPERTIES	UNITS	VALUE					TEST METHOD
Series	-	100	300	400	500	1000	
Specific Gravity @ 15 °C	-	1.013	1.040	1.055	1.065	1.116	ASTM D-4052
Freezing Point	°C	-3	-15	-25	-37	-13	-
Equilibrium Boiling Point	°C	101	103	105	107	170	-
Glycol Concentration	% approx.	10	30	40	50	95	ASTM D-1298

BENEFITS:

- High boiling point gives better cooling performance in high temperature condition
- Excellent anti-foam properties.
- Withstands freezing at low temperatures.
- Protects the radiator against rust & corrosion.
- Compatible with ordinary summer coolant.
- Protection against excessive evaporation.
- Provides year round cooling and anti-freeze properties.

SAE AXLE AND MANUAL TRANSMISSION

SAE J 306 MARCH 85

SAE Viscosity Grade	Maximum Temp. For Viscosity at 150,000 cP, °C	Viscosity at 100 °C, cSt	
		MIN	MAX
70W	-55	4.1	-
75W	-40	4.1	-
80W-	-26	7.0	-
85W	-12	11.0	-
90	-	13.5	<18.5
110	-	18.5	<24.0
140	-	24.0	<32.5
250	-	41.0	-

LUBRICANT VISCOSITY SYSTEM

INDUSTRIAL FLUID

(ISO 3448, ASTM D 2422, DIN 51519)

ISO VG	Midpoint Viscosity cSt at 40 °C	Limits of Viscosity CSt at 40 °C	
		MIN	MAX
2	2.2	1.98	2.42
3	3.2	2.88	3.52
5	4.6	4.14	5.06
7	6.8	6.12	7.48
10	10	9.0	11.0
15	15	13.5	16.5
22	22	19.8	24.2
32	32	28.8	35.2
46	46	41.4	50.6
68	68	61.2	74.8
100	100	90.0	110
150	150	135	165
220	220	198	242
320	320	288	352
460	460	414	506
680	680	612	748
1000	1000	900	1100
1500	1500	1350	1650

(1) (2) SAE J300 DEC1999

SAE	Low Temperature Viscosities		High-Temperature Viscosities		
	Cranking (3) (cP) Max at temp °C	Cranking (4) (cP) max with no yield stress at temp °C	Kinematic (5) (cSt)at 100°C		High Shear(6) (cP) at 150°C and 10-6s-1min
			min	max	
0W	6200 at – 35	60,000 at – 40	3.8		
5W	6600 at – 30	60,000 at – 35	3.8		
10W	7000 at – 25	60,000 at – 30	4.1		
15W	7000 at – 20	60,000 at – 25	5.6		
20W	9500 at – 15	60,000 at – 20	5.6		
25W	13000 at – 10	60,000 at – 15	9.3		
20			5.6	<9.3	2.6
30			9.3	<12.5	2.9
40			12.5	<16.3	2.9 (0W-40, 5W-40, 10W-40 grades)
40			12.5	<16.3	3.7 (15W-40, 20W-40, 25W-40,40 grades)
50			16.3	<21.9	3.7
60			21.9	<26.1	3.7

Notes:

- cP = 1mPa * s; 1 cSt = 1 mm²/s
- All values are critical specifications as defined by ASTM D3244
- ASTM D5293
- ASTM D4684: Note that the presence of any yield stress detectable by this method constitutes a failure regardless of viscosity.
- ASTM D445
- ASTM D4683, CEC L-36-A-90 (ASTM D4741), or ASTM D5481.

Note: Mandatory compliance June 2001.

In the interim, oil marketers may comply with either APR 97 or DEC 1999 standards.

NLGI LUBRICATING GREASE

CLASSIFICATIONS

NLGI Number	ASTM D217 Worked Presentation At 77 °F (25°C)
000	445 – 475
00	400 – 430
0	355 – 385
1	310 – 340
2	265 – 295
3	220 – 250
4	175 – 205
5	130 – 160
6	85 – 115