Orelube®

technical information

K GEAR OILS ND

SEMI-SYNTHETIC NON-LEAK MOLY INDUSTRIAL EP GEAR OILS

Description

At start-up, conventional gear oil moves to the sides of the gear box by the centrifugal force of the rotating gears. As the gears turn, the splashing action eventually provides lubrication. But at start-up, when metal-to-metal wear is greatest, the gears lack sufficient lubrication.

K Gear Oils ND are different! Immediately when the gears start they adhere to the gear teeth, and by resisting centrifugal force, they coat the gears with protective lubrication at start-up and under all working conditions, even remaining on the gears while the machine is idle.

K Gear Oils ND are tacky! They contain a shear-stable tackifier agent for extra-adhesiveness preventing drip, leak or splatter. Gear box leakage is prevented especially where there are leaky or worn seals thus reducing oil consumption.

K Gear Oils ND contain a stable *colloidal suspension of Molybdenum disulfide*, a lubricant that forms a thin protective layer of solid particles on metal surfaces, filling in the microscopic peaks and valleys (asperities) that are always present, no matter how highly polished or machined the surface is. Then, acting like tiny ball bearings, Moly will *roll the load up to 500,000 psi* preventing metal-to-metal contact thereby reducing friction and wear.

K Gear Oils ND are formulated to resist the formation of acidic by-products that cause soft sludge deposits or hard varnish and lacquer coatings to form on metal surfaces. Deposits lead to friction, increased heat and eventual equipment breakdown -- gears will be kept free from deposits longer.

Benefits

- Blend of highly-refined, hydrotreated, high VI paraffin base oil and synthetic hydrocarbon fluid
- High EP properties -- forms a film by chemical reaction on metal surfaces which has lower shear strength than the base metal preventing welding and seizing of contacting surfaces when oil film is ruptured
- Reduced friction, lower operating temperatures and decreased power consumption especially in heavily-loaded gear sets -- up to 20 F reduction in temperature and a 5% energy efficiency improvement
- Exceptional demulsibility separating readily from water
- Rust and corrosion protection during service and storage conditions
- Non-corrosive to copper, bronze and other non-ferrous parts of gear sets
- Special antifoam agent prevents foam formation and inhibits oil oxidation by allowing entrained air to release quickly from the system

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Applications

Mining, material processing, cement manufacturing, construction, steel and paper mills, tile, insulation, glass and textile manufacturing, farm equipment, printing and binding machinery, elevators, escalators and process industries using reaction vessels.

K Gear Oils ND are designed for enclosed spur, bevel, spiral bevel, herringbone, worm and hypoid gears, oil-lubricated bearings and chains operating under heavy loads and/or shock loads at temperatures up to 210 F. Highly-loaded parts such as reduction or power-transmitting gears are protected. K Gear Oils ND exceed the performance requirements of U.S. STEEL 224 and AGMA 250.04 for industrial gear oils.

Typical Properties	K-30	K-90	K-140	K-250
Color	Black	Black	Black	Black
ISO Grade	100	220	460	1000
AGMA #	3EP	5EP	6EP	8AEP
Viscosity, ASTM D-445				
cSt @ 40 C	98.3	208.1	419.2	975.1
cSt @ 100 C	11.8	19.9	32.2	49.6
Flash Point, F	430	470	495	520
Pour Point, F	-20	-10	0	10
Foam Test, ASTM D-892				
Seq. 1, 2 and 3, ml	0/0	0/0	0/0	0/0
Rust Test, ASTM D-665 A and B	Pass	Pass	Pass	Pass
Copper Corrosion, ASTM D-130				
3 hrs @ 100 C	1a	1a	1a	1a
4-Ball EP, ASTM D-2783				
Weld load, kg	250	250	250	250
Load wear index, kg	55	55	55	55
Timken EP Test, ASTM D-2782				
OK Load, lbs	65	65	65	65
4-Ball Wear Test, ASTM D-4172				
1200 rpm, 40 kg, 167 F, 1 hr				
scar diameter, mm	0.30	0.30	0.30	0.30
FZG Gear Test, 12 stages	Pass	Pass	Pass	Pass
Demulsibility, ASTM D-2711				
water in oil, %	0.3	0.4	0.6	0.9
total free water, ml	85	87	87	87
emulsion, ml	Nil	Nil	Nil	Nil
Oxidation Stability, ASTM D-2893				
viscosity increase, %	2.3	2.3	2.3	2.3
Oxidation, USS S-200				
312 hrs @ 250 F, vis. increase, %	3.5	3.8	4.5	5.0