



# TECHNICAL DATA SHEET

## GearMate® MULTI-SERVICE LUBRICANT

Whitmore's GearMate® Multi-Service Lubricant meets the EPA Toxicity Characteristic Leaching Procedure (TCLP) and is characterized as TCLP-SAFE.

GearMate® was developed in response to environmental and worker safety issues, while protecting the user from the potentially high cost of disposal. GearMate® combines high performance and year-round operating utility with an environmentally safe performance system, free of solvents and TCLP heavy metals.

GearMate® generates a tough, durable film on metal surfaces which resists pound-out and sling off. GearMate® also contains graphite and MoS<sub>2</sub> to help protect expensive parts during boundary lubrication conditions.

Lubrication and maintenance of draglines, mining shovels, track drills and other mining machinery can be simplified by the use of GearMate®. Open gears and many bearings can benefit from the use of GearMate®, allowing lubricant inventories to be reduced.

### BENEFITS:

- **TCLP-SAFE** - passes EPA Toxicity Characteristic Leaching Procedure which reduces disposal costs.
- **LOWERS OPERATING TEMPERATURES** - extends gear life, reduces operating expenses.
- **CONTAINS SOLID FILM LUBRICANTS** - (MoS<sub>2</sub> and graphite) durable film prevents metal-to-metal contact and reduces wear.
- **-45°F (-43°C) PUMPABILITY** - one product for year-round use simplifies lubrication.

### APPLICATIONS:

GearMate® is ideal for exposed parts on mining equipment such as open gears, swing racks, house rails and rollers, shovel dipper sticks, drum laggings, as well as mobile equipment pins and bushings. It is suitable for many heavily loaded bushings and bearings operating at or below 150,000 DN.

To calculate the DN factor of a bearing, use the following:

$$DN = dm \times RPM$$

$$\text{Where } dm = (I.D + O.D) \div 2$$

ASTM #		TYPICAL CHARACTERISTICS		
		Light	Medium	Heavy
<b>D-3-2983</b>	<b>Viscosity (Brookfield Viscometer)</b> Spindle 6 @ 100 rpm @ 50°F (10°C), cps Spindle 6 @ 5 rpm @ 50°F (10°C), cps Spindle 7 @ 5 rpm @ 50°F (10°C), cps	2,500	60,000	250,000
<b>Gardner Method D-92</b>	<b>Density, lb/gal @ 60°F (15.5°C)</b> <b>Specific Gravity, g/cc @ 60°F (15.5°C)</b> <b>Flash Point, °F (°C)</b> Cleveland Open Cup (Base Oils) <b>Timken Step Test, lb</b>	8.37 1.005 >230 (>110) >81	8.08 0.970 >230 (>110) >81	8.26 0.992 >230 (>110) >81
<b>D-2509 (Modified) D-2596</b>	<b>Four Ball EP</b> Weld Point, kg	500	500	500
<b>D-4048 (Modified) OEM Standard</b>	<b>Copper Strip Corrosion</b> 212°F (100°C) @ 3 hr <b>Low Temperature Pumpability,</b> Lincoln Ventmeter @ 400 psi, °F (°C) <b>Operating Range, °F</b>	1B -45 (-43) -45 (-43) to 265 (129) Graphite/MoS <sub>2</sub>	1B 0 (-18) 0 (-18) to 280 (138) Graphite/MoS <sub>2</sub>	1B 15 (-9) 15 (-9) to 280 (138) Graphite/MoS <sub>2</sub>
<b>US Steel Grease Mobility Test</b>	<b>Solid Lubricants</b> <b>Grease Mobility</b> 150 psi @ °F, g/min.	56.5	37.0	1.7

\* GearMate® Medium & Heavy are not recommended for use in enclosed gear cases.

The above are average values. Minor variations which do not affect product performance are to be expected in normal manufacturing.

### PACKAGING

Shuttle Tanks	Drums	Kegs	Pails
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### THE WHITMORE MANUFACTURING COMPANY

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