



Gear Shield™

Conoco Gear Shield™ is a black, semi-fluid, adhesive, asphaltic-based lubricant recommended for lubrication and cushioning of open and semi-enclosed gears typically found in mining equipment. It is diluted with a non-chlorinated solvent for ease of application. It is free of lead and carcinogens.

Gear Shield™ is available in three grades: NC, NCW and P. Gear Shield™ NC is recommended for use in warm weather, where pumpability is not an issue. Gear Shield™ NCW has a higher diluent content for improved pumpability in cold weather. Gear Shield™ P is recommended for higher operating temperatures and for equipment operating at higher loads.

Gear Shield™ NC and NCW are formulated with high quality paraffinic base oils, resins and asphaltic compounds. Gear Shield™ P is a blend of petroleum and synthetic hydrocarbons. They are compounded with extreme-pressure additives for extended gear life where heavy gear-teeth loads, high peak loads or intermittent shock loads exist. It adheres well to metal surfaces and will not harden or flake off at low temperatures.

Applications

- Open and semi-enclosed gears found in electric shovels, draglines, dipper sticks swing and pinion gears
- Semi-enclosed industrial gearboxes where heavy tooth loads, high peak loads or intermittent shock loads exist
- Guides and sliding surfaces with large clearances, where asphaltic-type lubricants are desired
- Cables, clamshells, hoists and cable-operated equipment, where surface protection is needed and cable safety clamp devices are not used.

**Non-Chlorinated,
Asphaltic-Type
Open Gear
Lubricant For
Mining Equipment**

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Outstanding Features

- Excellent adhesion to metal surfaces
- Tenacious film provides lubrication and cushioning of gear teeth
- Extreme-pressure and antiwear properties for protection under heavy or shock loads
- Resistant to water washout and corrosion
- May be applied by pressure gun, brush, swab, drip cup or caulking gun
- Non-chlorinated, free of carcinogens and lead
- Choice of three grades

Gear Shield™ Typical Properties

Grade	NC	NCW	P
Color	Black	Black	Black
Appearance	Viscous	Viscous	Viscous
	Semi-Fluid	Semi-Fluid	Semi-Fluid
Specific Gravity @ 60°F (15.6°C)	0.96	0.96	0.92
Density, lb/gal	8.00	8.00	7.67
API Gravity	15.9	15.9	22.3
Diluent Content, wt %	16	23	12
Copper Corrosion, (ASTM D130)	4b	4b	2a
Rust Test, A&B, (ASTM D665)	Pass	Pass	Pass
Flash Point, °F (°C) (ASTM D92)			
With Solvent	>250 (>121)	>200 (>93)	>250 (>121)
Without Solvent	>500(>260)	>500(>260)	>500(>260)
Viscosity Range, (ASTM D445)			
cSt @ 40°C With Solvent	4,000 to 6,000	900 to 1,600	5,400 to 8,700
cSt @ 100°C Without Solvent	1,000 to 2,200	1,000 to 2,200	1,070 to 1,700
SUS @ 100°F With Solvent	20,000 to 30,000	5,000 to 8,000	25,000 to 40,000
SUS @ 210°F Without Solvent	5000 to 10,000	5,000 to 10,000	5,000 to 8,000
Four-Ball Weld, kg (ASTM D2596)	400	400	400
LWI, (ASTM D2596)	77	67	70
FZG Load Stage Pass, (ASTM D5182)	12	12	12
Mobility @ 32°F (0°C), (USS), g/sec	0.03	0.02	0.05
@ 32°F (0°C), psig (Lincoln VE-1)	100	250	300
Operating Temperature Range, °F (°C)	>25 (>-4)	>15 (>-10)	>20 (>-7)

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