



221

COPPER SEAL II

Tool Joint & Drill Collar Compound

- GEAR OILS
- MOTOR OILS
- HYDRAULIC OILS
- PIPE COATINGS
- THREAD SEALANTS
- BEARING GREASES
- SPECIALTY GREASES
- THREAD COMPOUNDS
- SUCKER ROD COATINGS
- OUTSIDE PRESERVATIVES
- WIRELINE GREASE SEALS
- CLEANERS & DEGREASERS
- PIPE STORAGE COMPOUNDS
- RUST & CORROSION INHIBITORS
- THREAD LOCKING COMPOUNDS
- VALVE LUBRICANTS & SEALANTS
- TOOL JOINT & DRILL COLLAR COMPOUNDS

PRODUCT DESCRIPTION

221 Copper Seal II is a lead free, zinc free, quality lubricating compound that handles high temperatures and provides anti-seize performance required for breaking in new tool joints and lubricating drill collars. It is used in all drilling and anti-seize applications in the petroleum industry including refineries, petrochemical plants, and the water well industry. 221 Copper Seal II is recommended for use on all rotary shouldered connections and provides protection against galling and seizing or damage to threads on drill collars and tool joints, even under the most demanding conditions, including the deepest, hottest wells. It eliminates the need for wire brushing of threads to remove buildup often experienced with compounds that contain lead or zinc.

221 Copper Seal II assures constant makeup torque, is effective when used on downhole production tools or pumping equipment, and is recommended for use in areas of high temperatures.

BENEFITS

- Provides a tough protective coating
- Resists corrosion and contamination
- Prevents galling & seizing
- High temperature performance
- Lead and Zinc-Free
- Friction Factor of 1.2
- Consistent makeup
- Will not buildup in thread roots
- Increases tool joint thread life
- Will not build up on threads

APPLICATION

221 COPPER SEAL II is recommended for drill collars, drill pipe, tool joints, rotary-shouldered connections, tubing, casing, and fishing tools. 221 COPPER SEAL II is also recommended for application to stainless steel connections as well as threaded and flanged connections in steam injection, primary recovery, and fire flood wells.

TYPICAL OBSERVATIONS

Color	Copper
Texture	Smooth
Density, lb/gal@ 77°F (25°C)	10.25
Specific Gravity @ 77°F (25°C)	1.23
Dropping Point, ASTM D-2265	500°F (260°C)
Flash Point, ASTM D-92	>400°F (>204°C)
Penetration, ASTM D-217 @ 77°F (25°C)	310-330
Base Oil Viscosity	
cSt @ 40°C (104°C)	360
cSt @ 100°C (212°F)	21
Evaporation Loss,	
ASTM D-972 @ 210°F (98°C)	0.2%
Oil Separation, ASTM D-1742 @ 77°F (25°C)	Nil
4-Ball, Weld Point, Kg (ASTM D-2596)	620 Typical
Salt Spray Test, ASTM B-117	500+ hours
Temperature Range	10°F to 450°F (-12°C to 225°C)
Friction Factor, API RP 5A3 Annex I	1.2
Brushable To	15°F (-9°C)
Shelf Life (unopened container)	Two years

RELATED PRODUCTS

- 220 Copper Seal Premium Tool Joint and Drill Collar Compound
- 217 Copper Seal Supreme Premium Drill Collar Compound



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