



401 ALMASOL®

Pure Mineral Gear Lubricant

For exceptional wear reduction and long service life in all applications requiring a "pure" or "straight" mineral gear lubricant.

Almasol Pure Mineral Gear Lubricant (401) is a balanced formulation of natural high VI paraffinic base oils, rust and oxidation inhibitors, wear-reducing agents and other additives which provide the highest level of wear reduction possible without the use of a chemically active EP agent. It also contains Almasol, LE's exclusive wear-reducing additive.

Some manufacturers of transmissions and gearboxes specify a "pure" or "straight" mineral oil gear lubricant. This means that this type of gear lubricant should not contain chemically active EP additives. These terms do not mean that the lubricant may not contain various other highly desirable additives.

USER BENEFITS:

LONGER GEAR LIFE

- **Reduced wear** is achieved with the Almasol wear-reducing agent and the inherent tough film strength and natural lubricity of paraffinic base oils. With Almasol's ability to reduce friction, field experience shows lower running temperatures with Almasol than with ordinary gear oils.
- **Clingability.** With excellent adhesive qualities, 401 climbs gears immediately at startup, assuring immediate lubrication during the most critical wear time. Even after the equipment remains idle for extended periods, all metal surfaces remain coated and protected against rusting.

LOWER LUBRICANT CONSUMPTION

- **Anti-Foaming Ability** is assured with a powerful anti-foam agent which breaks up foam. Foam is a

poor lubricant and can result in higher temperatures and accelerated oxidation.

- **High Oxidation Resistance** insures longer effective oil life. In addition to the superior oxidation resistance provided by the highly refined base oils, 401 is fortified with rust and oxidation inhibitors. This gives the lubricant the ability to withstand higher temperatures without oxidizing rapidly and forming sludge. LE's 401 resists the formation of rust and corrosive acids which can result from moisture in a gearbox.

LOWER OPERATING COSTS

- Longer gear life and lower lubricant consumption saves money in reduced downtime and reduced labor and parts expense.

AVAILABLE GRADE

- ISO 220 - SAE 90

TYPICAL APPLICATIONS:

- Transmissions requiring a GL-1 Gear Oil
- Gearboxes requiring a Pure Mineral Oil

WHAT IS ALMASOL®?

Almasol is LE's exclusive wear-reducing additive which has an affinity for metal similar to polar attraction. It attaches itself to working surfaces in a single microscopic layer, yet it will not build on itself or affect clearances. This microscopic layer possesses tremendous load-carrying capacity, is impervious to acid attack and minimizes metal-to-metal contact and the resulting friction and wear. When added to LE lubricants, it gives an extra dimension of protection available in no other lubricant.



LUBRICATION ENGINEERS, Inc.
LEADERS IN LUBRICANTS

LE operates under an ISO 9001
Certified Quality System

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TECHNICAL DATA BULLETIN

**401
Almasol®
Pure Mineral Gear Lubricant**

DESCRIPTION:

A high quality R & O (rust and oxidation) inhibited SAE 90, ISO 220 pure mineral gear lubricant. Contains no active EP (extreme pressure) additives.

Contains Almasol®, LE's proprietary wear-reducing additive. Almasol has an affinity for metal, does not affect tolerances, is chemically inert and is unaffected by temperatures up to 1900°F.

PHYSICAL CHARACTERISTICS – TYPICAL:

ISO Grade	220
SAE Grade	90
AGMA	5 R&O
Gravity, °API	28.6
Viscosity	
SUS @ 100°F	1257
SUS @ 210°F	104.3
cSt @ 40°C	239.0
cSt @ 100°C	20.8
Viscosity Index	95
Pour Point, °F (°C)	0 (-18)
Flash Point, °F (°C)	536 (280)
Color	Purple

PERFORMANCE TEST RESULTS:

Rust Test, ASTM D655B 24 hrs, Sea Water	Pass
Evaporation Loss @ 100°C ASTM D972, wt. %	0.6

SPECIFICATIONS EXCEEDED:

API GL-1 AGMA 9005-D94 (5) USDA H2

APPLICATION:

Use in all transmissions and gearboxes requiring a pure mineral oil. Can be used in place of SAE 50 engine oil in transmissions, final drives, etc.

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RECOMMENDATIONS:

Not for use in automatic transmissions, hydraulic or semi-automatic transmissions or in common sump systems combining gear lubricant, hydraulic oil and power steering fluid.

Not for use in gear units requiring an EP (extreme pressure) lubricant.

BENEFICIAL QUALITIES:

The Almasol[®] additive imparts wear-reducing properties to gear oil. Field experience in severe service shows lower running temperatures with Almasol than with ordinary gear oils.

Almasol's affinity for metal tends to seal metal surfaces and offers protection against rusting and corrosion. This "seal coat" is one layer thick and does not appreciably change tolerances. It allows metal surfaces to slide over one another with less resistance.

Reduces wear.

Very best rust protection because of special additive, which sets up barrier between metal and moisture.

Good for high temperatures because of exceptional oxidation inhibition built into lubricant.

Nonfoaming.

Does not affect seals

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