

**1:9****Treatment Ratio**

1 part TS-90 to 9 parts finished gear oil
≈ 10% treatment · slightly
higher/lower acceptable

TECHNICAL SPECIFICATIONS

Base Fluids	Polymers
Solid Lubricant	MoS₂
Moly Particle Size	0.3-0.6 microns
Pour Point	45°F
Flash Point	380°F
Kinematic Viscosity @ 100°F	574.7 cSt
Timken Test (oil with TS-90)	Min. 60 lb
Treatment Ratio	1:9 / 10%
Pack Size	5 Gal Pail
Shelf Life	3 years
Country of Origin	Made in U.S.A.

PSC RECOMMENDED EQUIPMENT

Mud Pumps Gear Box	TS-90
Jacking System – Primary Gear Box	TS-90 / TS-19
Top Drive	TS-90

PRODUCT OVERVIEW

TS-90 Moly Gear Concentrate is a high-performance Molybdenum Disulfide additive from **T.S. Moly Lubricants, Inc.** (Houston, TX) designed to upgrade finished enclosed gear oils. Mixed at approximately **10% treatment** (1 part TS-90 to 9 parts gear oil), it coats gear and bearing surfaces with a tough, slippery moly-polymer film that helps reduce friction, operating temperature, gear noise, and wear. It is especially useful for **Triplex Mud Pump gearboxes**, newly machined gear sets, initial wear-in periods, and heavily loaded enclosed gear systems. Recommended by National Oilwell Varco for use with mud pump oil during initial running-in and when corrective pitting is observed. Available through **PSC Group** in India, Dubai, and Houston.

KEY FEATURES & BENEFITS**0.3-0.6 Micron MoS₂ Particles**

Ultra-fine moly particles penetrate micro-surface irregularities on gear teeth, forming a durable boundary film that protects under extreme load.

Timken Load ≥60 lbs

Gear oil treated with TS-90 achieves a minimum Timken OK load of 60 lbs – confirming excellent extreme pressure load-carrying capability.

Initial Wear-In Support

Helps polish gear tooth surfaces and reduce initial pitting during the wear-in phase of newly machined Triplex Mud Pump gears.

NOV-Recommended Application

National Oilwell Varco recommends an MoS₂ additive during initial mud pump running and when early corrective pitting is observed on gear tooth faces.

Reduces Friction & Heat

The moly-polymer film lowers friction between gear tooth surfaces, reducing heat generation and wear under heavy or intermittent load conditions.

Reduces Gear Noise

The protective moly film cushions gear mesh contact, helping reduce gearbox noise and vibration levels during normal and high-load operation.

APPLICATION GUIDANCE

- 1 Ensure the gear oil is clean and in suitable condition for service before adding TS-90.
- 2 Add TS-90 at approximately **10% treatment** – 1 part TS-90 to 9 parts finished enclosed gear oil. A slightly higher or lower ratio is acceptable.
- 3 Circulate the oil sufficiently after addition to allow uniform distribution through the gearbox.
- 4 Monitor gearbox condition, oil condition, operating temperature, gear noise, and visual gear tooth condition during routine inspections.

**IMPORTANT – DO NOT USE IN ENGINE CRANKCASES**

TS-90 Moly Gear Concentrate is an additive for enclosed

INDUSTRIAL GEAR OILS ONLY

. Do

NOT

use in crankcases of internal combustion engines. For industrial and offshore gearbox applications only.

SUPPLIED BY PSC GROUP

EXTENDED PROPERTIES, SAFETY & PSC GROUP OFFICES

1 COMPLETE TECHNICAL SPECIFICATIONS

PARAMETER	VALUE
Product Type	MoS ₂ Gear Oil Additive / Concentrate
Base Fluids	Polymers
Solid Lubricant	Molybdenum Disulfide (MoS ₂)
Moly Particle Size	0.3 to 0.6 microns
Pour Point	45°F
Flash Point	380°F
Kinematic Viscosity @ 100°F	574.7 cSt
Timken Test (oil treated with TS-90)	Minimum 60 lb
Treatment Ratio	1:9 (1 part TS-90 to 9 parts gear oil) ≈ 10%
Pack Size	5 Gallon Pail
SKU / Reference	40-90-201
Shelf Life	3 years
Country of Origin	Made in U.S.A.
Engine Crankcase Use	NOT for use in engine crankcases

3 HANDLING, STORAGE & SAFETY

GHS Warning (from pail label): Causes skin irritation. Wear protective gloves, protective clothing, eye/face protection. Wash contaminated skin thoroughly after handling. Take off contaminated clothing and wash before reuse. Dispose of contents/container in accordance with national regulations.

SKIN / EYES:	Wash contaminated skin thoroughly with water. If skin irritation occurs, get medical advice. Wear protective gloves and eye/face protection.
FLASH POINT:	380°F. Keep away from extreme heat and open flame.
STORAGE:	Store in the original container in a cool, dry area. Keep closed when not in use. Shelf life: 3 years.
DISPOSAL:	Dispose of contents and container in accordance with local and national regulations.
GEAR OIL USE:	For enclosed industrial gear oils only. Do not use in crankcases of internal combustion engines.
SDS:	Full SDS available from T.S. Moly Lubricants, Inc. (www.tsmoly.com) or PSC Group upon request.

5 PSC GROUP - GLOBAL OFFICES



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2 FUNCTION & PERFORMANCE SUMMARY

FUNCTION	BENEFIT
MoS ₂ boundary film	High load-carrying lubrication between gear tooth surfaces
Ultra-fine 0.3-0.6μ particles	Penetrates micro-roughness – forms durable surface film
Wear-in support	Helps polish teeth and reduce initial pitting in new gears
Pitting control	Recommended when early corrective pitting is observed (NOV)
Friction reduction	Lowers gear wear, heat generation and energy losses
Noise reduction	Moly film cushions gear mesh – reduces gearbox noise
Extreme-condition protection	Supports intermittent and severe operating conditions

4 TYPICAL APPLICATION AREAS

- Triplex Mud Pump gearboxes – initial wear-in and corrective pitting treatment
- Top drives – additional boundary lubrication under heavy drilling loads
- Jacking system primary gear boxes – extreme load protection during jacking operations
- Heavily loaded enclosed gearboxes – supplement gear oil film under high contact stress
- Gears showing early tooth-face pitting – moly film helps polish surfaces and slow pitting progression
- Intermittent extreme operating conditions – provides boundary protection during load spikes

PSC Group supplies TS-90 for offshore drilling rigs, triplex mud pumps, jacking systems, top drives, and heavily loaded gearboxes where conventional gear oil may require additional moly-based load-carrying and anti-wear support.