TEC-GUARD

DEFEND

# SYNTHETIC INDUSTRIAL GEAR & CIRCULATING OIL

**Tec-Guard Defend Synthetic Industrial Gear & Circulating Oil** delivers better protection and performance than conventional R&O oils. Its combination of PAO synthetic base oils and anti-wear additives provides excellent wear protection and performance in hot and cold temperature extremes. It is designed to withstand severe industrial service, helping reduce maintenance in a range of applications that operate in adverse conditions. **Tec-Guard Defend Synthetic Industrial Gear & Circulating Oil** is fortified with potent anti-wear additives and rust & oxidation (R&O) inhibitors that guard against wear. Its synthetic base oils naturally resist viscosity loss due to shear to deliver excellent protection for long component life. This oil features a high viscosity index and superior antioxidant additives, which translates into excellent film strength and stability in extreme heat. Its low pour point allows it to flow readily in cold temperatures for easier starts, improved energy efficiency and maximum wear protection. **Tec-Guard Defend Synthetic Industrial Gear & Circulating Oil**'s all-season capability reduces the need for sump heaters and seasonal changes.

## FEATURES

**PAO synthetic base oils:** Maximum protection. Improved oxidation resistance and extreme-temperature performance. Helps extend equipment and oil life.
**R&O inhibitors:** Protects against rust and oxidation for dependable protection and long oil life.
**Excellent compatibility:** Protects yellow metals (brass, bronze, copper). Conditions seals to help prevent leaks. Compatible with most other oils and paints.
**Outstanding demulsibility:** Eliminates oil/water emulsions. Inhibits rust and corrosion.
**Highly filterable:** Fully dissolved additives and solids-free chemistry improve filterability for long oil life.

## APPLICATIONS

Use the correct viscosity of **Tec-Guard Defend Synthetic Industrial Gear & Circulating Oil** in high-speed enclosed gear or bearing systems; vane and reciprocating compressors; blowers and single-stage vacuum pumps. It is excellent for high- and low-temperature extremes that exceed conventional-oil capabilities. Examples include the following:

- Equipment required to run continuously with few opportunities for oil changes
- Remotely located equipment where regular maintenance is difficult
- Equipment requiring seasonal change-outs due to temperature variability
- High-value assets that need premium lubrication
- Where viscosity consolidation is desired, which reduces inventory and misapplication

Always review operating conditions, operating temperatures and original equipment manufacturer (OEM) requirements to confirm this product's suitability for your application. Not for use in "breathing air" or refrigeration compressors. Not for use in gas or steam turbines.

**Tec-Guard 400 S 14 Ave • Eldridge, IA 52748 • 800-522-1150 • www.tec-guard.com**

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## CHARACTERISTICS

| SPECIFICATIONS | ISO68 | ISO100 | ISO150 | ISO220 | ISO320 | ISO460 | ISO680 |
|---|---|---|---|---|---|---|---|
| AGMA 9005-E02 (R&O) | X | X | X | X | X | X | X |
| ISO 12925-1 (CKT) | - | - | X | X | X | X | X |
| Cincinnati Machine P-39 (worm) | - | - | - | - | - | X | X |
| **PROPERTIES** | | | | | | | |
| ISO Viscosity Grade (ASTM D2422) | 68 | 100 | 150 | 220 | 320 | 460 | 680 |
| AGMA Synthetic Gear Oil Classification | 2S | 3S | 4S | 5S | 6S | 7S | 8S |
| Kinematic VIscosity @ 100°C, cSt (ASTM D445) | 10.1 | 13.6 | 21.2 | 29.0 | 39.8 | 52.1 | 70.8 |
| Kinematic Viscosity @ 40°C, cSt (ASTM D445) | 66.7 | 100.5 | 156.9 | 230.2 | 333.0 | 471.1 | 689.0 |
| Viscosity Indes (ASTM D2770) | 136 | 136 | 159 | 165 | 172 | 174 | 178 |
| Flash Point °C (°F) (ASTM D92) | 256 (493) | 264 (507) | 274 (525) | 280 (536) | 272 (522) | 284 (543) | 290 (554) |
| Pour Point °C (°F) (ASTM D97) | -36 (-33) | -45 (-49) | -42 (-44) | -40 (-40) | -39 (-38) | -37 (-35) | -36 (-33) |
| FZG Failure Load Stage [A/8.3/90] | - | - | >12 (Pass) | >12 (Pass) | >12 (Pass) | >12 (Pass) | >12 (Pass) |
| Four-Ball Wear Test, mm (ASTM D4172) | 0.42 | 0.45 | 0.36 | 0.36 | 0.36 | 0.36 | 0.36 |
| Copper Strip Corrosion Test (ASTM D130) Mod. (250°F, 3hr) | 1A | 1A | 1A | 1A | 1A | 1A | 1A |
| Rust Tests (ASTM D665A&B) (Freshwater & Synthetic Seawater) | Pass | Pass | Pass | Pass | Pass | Pass | Pass |
| Foam, ml (ASTM D892) Test end and after 10 minutes settling | | | | | | | |
| Seq. 1 | 0/0 | 0/0 | 0/0 | 0/0 | 0/0 | 0/0 | 0/0 |
| Seq. 2 | 0/0 | 0/0 | 15/0 | 15/0 | 10/0 | 15/0 | 10/0 |
| Seq. 3 | 0/0 | 0/0 | 0/0 | 0/0 | 0/0 | 0/0 | 0/0 |

## COMPATIBILITY

Although Tec-Guard Industrial lubricants are compatible with conventional and most synthetic lubricants, for optimum performance we recommend thoroughly cleaning and draining the system. Polycarbonate plastic bowls should be metal-covered. Thoroughly flush prior to changeover. Not compatible with synthetic silicon or polyglycol (PAG) fluids. For best results, consult your Tec-Guard sales representative for additional support.

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