



## RC Series R&O/AW Synthetic Gear and Bearing Oil

AMSOIL developed RC Series Oil to fulfill the market need for a high-quality, multi-functional industrial gear, bearing and compressor lubricant. RC Series represents a leap forward in performance over conventional R&O-type oils. Its PAO-based synthetic formulation uses anti-wear and mild-extreme-pressure (EP) additives to deliver longer life and improved hot- and cold-temperature protection. RC Series is designed to withstand severe industrial service and reduce maintenance costs. It delivers remarkable performance for a variety of equipment operating under a wide range of conditions.

### Excellent Wear Protection

AMSOIL RC Series Oil is a rust & oxidation (R&O)-inhibited oil additionally fortified with anti-wear chemistry to provide an extra layer of protection against metal-to-metal contact. It is formulated with high-quality synthetic base oils that provide excellent shear stability, a high viscosity index and increased film strength. Under high temperatures or when exposed to mechanical shear, RC Series helps prevent wear for increased equipment life.

### Excellent Worm Gear Performance

The ISO 460 viscosity of RC Series (RCO) is fully tested and verified for use in yellow-metal-containing worm gear systems. It contains a special friction modifier that reduces friction caused from the sliding action between the worm and wheel interface. In worm gear testing, RCO did an excellent job protecting against wear and corrosion.

### Superior High-Temperature Durability

RC Series withstands high heat for extended periods of time, outperforming conventional and most synthetic R&O oils. By incorporating a saturated molecular base structure with the correct anti-oxidant additives, RC Series (ISO 150-460) passed the stringent ISO-12925-1 (CKT) test, demonstrating its high-temperature performance. To achieve the CKT level of oxidation resistance, the oil must pass the ASTM D2893 oxidation test at an elevated temperature of 302°F (150°C). In contrast, the more common CKD designation requires the test to be run at only 250°F (121°C). RC Series provides strong resistance to thermal/oxidative breakdown, sludge, varnish, viscosity increase and acid formation, helping reduce maintenance costs and increase oil life.

### Outstanding Cold-Temperature Performance

The naturally high viscosity index, low pour point and lack of paraffins (wax) make RC Series ideal for use in cold temperatures. Its excellent cold-flow properties help equipment start easier, improve energy efficiency, protect against lubricant starvation and wear, and reduce the need for sump heaters. RC Series is capable of all-season operation, limiting the need for seasonal change-outs.



- **Formulated** to extend equipment and oil life
- **Excellent** seal compatibility – formulated with conditioners to keep seals soft
- **Highly filterable** with fully dissolved additives and no solids
- **Excellent** demulsibility, eliminating oil/water emulsions
- **Compatible** with most other oils, paints and seals
- **Compatible** with yellow metals (brass, bronze, copper)

### Excellent Gear Protection



Following severe worm gear testing, RC Series protected gear teeth against wear and corrosion for long life.

## TYPICAL TECHNICAL PROPERTIES

### RC Series R&O/AW Synthetic Gear and Bearing Oil

	<b>RCJ</b>	<b>RCI</b>	<b>RCJ</b>	<b>RCK</b>	<b>RCL</b>	<b>RCM</b>	<b>RCN</b>	<b>RCO</b>
	<b>ISO 32</b>	<b>ISO 46</b>	<b>ISO 68</b>	<b>ISO 100</b>	<b>ISO 150</b>	<b>ISO 220</b>	<b>ISO 320</b>	<b>ISO 460</b>
ISO VG (ASTM D2422)	0S	1S	2S	3S	4S	5S	6S	7S
AGMA Synthetic Gear Oil Classification	6.2	7.6	10.3	13.6	21.3	29.3	39.9	52.4
Kinematic Viscosity @ 100°C (ASTM D445)	33.1	43.7	67.8	100.5	156.0	230.1	332.5	470.0
Kinematic Viscosity @ 40°C (ASTM D445)	137	142	138	136	161	167	172	176
Flash Point °C (°F) (ASTM D92)	264 (507)	257 (495)	258 (496)	264 (507)	270 (518)	276 (529)	270 (518)	282 (540)
Fire Point °C (°F) (ASTM D92)	278 (532)	272 (522)	274 (525)	276 (529)	300 (572)	300 (572)	296 (565)	300 (572)
Pour Point °C (°F) (ASTM D97)	-53 (-63)	-50 (-58)	-48 (-54)	-45 (-49)	-42 (-44)	-40 (-40)	-39 (-38)	-36 (-33)
FZG Failure Load Stage [A/8.3/90]	-	-	-	-	>12 (Pass)	>12 (Pass)	>12 (Pass)	>12 (Pass)
Four-Ball Wear Test (ASTM D4172)								
Mod. (@ 40 kg, 1200 rpm, 75°C, 1 hr.)	0.45	0.45	0.45	0.45	0.36	0.36	0.35	0.36
Copper Strip Corrosion Test (ASTM D130)								
Mod. (250°F, 3 hr.)	1A	1A	1A	1A	1A	1A	1A	1A
Rust Tests (ASTM D665A & B)								
(freshwater & synthetic seawater)	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Foam, ml (ASTM D892) Test end and after 10 minutes settling								
Seq. I	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
Seq. II	0/0	0/0	0/0	0/0	20/0	20/0	10/0	10/0
Seq. III	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0

## APPLICATIONS

Use the correct viscosity of AMSOIL RC Series in many applications, including high- and low-speed enclosed gear and/or bearing systems; rotary screw, vane and reciprocating compressors; blowers; single-stage vacuum pumps and hydraulics. It is excellent for high- and low-temperature extremes that exceed conventional-oil capabilities. Example applications include (not limited to) the following:

- Equipment required to run continuously with few opportunities for oil change-outs
- 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 the original equipment manufacturer (OEM) requirements and the operating conditions and temperatures to confirm this product's suitability for your equipment or application.

**Not for use in "breathing air" or refrigeration compressors. Not for use in gas or steam turbines.** While RC Series Oil provides excellent anti-wear/mild-EP performance, it is not fully extreme-pressure (EP) fortified. For high-EP gear oils, use AMSOIL SG Series Gear Oil.

## SPECIFICATIONS

	ISO 32	ISO 46	ISO 68	ISO 100	ISO 150	ISO 220	ISO 320	ISO460**
AGMA 9005-E02 (R&O)	X	X	X	X	X	X	X	X
DIN 51517 Part 3					X	X	X	X
ISO 12925-1 (CKT)					X	X	X	X
Cincinnati Machine* P-39 (worm)								X

\*\*Worm Gear

## COMPATIBILITY

Although AMSOIL lubricants are compatible with mineral-oil-based and most synthetic lubricants, for optimum performance it is recommended the system be thoroughly drained and cleaned, if warranted. Polycarbonate plastic bowls should be metal-covered. Thoroughly flush prior to change-over.

**Not compatible with synthetic silicon or polyglycol (PAG) fluids.**

**Disclaimer:** AMSOIL accepts no liability for any property loss or damage suffered as a result of using this product inconsistent with the applications or specifications stated on this data sheet.

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