

# ANDEROL PRODUCT DATA SHEET

## **ROYCO® 555**

SYNTHETIC HELICOPTER TRANSMISSION  
AND TURBINE ENGINE OIL

## **Product Bulletin**

DoD-PRF-85734

### **GENERAL INFORMATION**

ROYCO 555 is an advanced 5 centistoke synthetic lubricating oil for gas turbine engines and helicopter transmissions. The product is a blend of "hindered" polyol esters and a finely balanced modern technology additive package resulting in enhanced load carrying performance, antiwear, corrosion protection, and excellent thermal - oxidative stability.

### **APPLICATIONS**

ROYCO 555 was specifically developed for use in high performance gas turbine engines developed during the mid 1960's for the SST and Concorde. These advanced engines required a lubricant having good high temperature stability as well as extreme pressure load carrying capability. ROYCO 555 was developed for the demands of increasingly higher power output engines that subsequently develop higher operating temperatures and loads. It was also designed to give improved performance in current engines.

ROYCO 555 was also formulated to meet the requirements of helicopter gearbox and transmission systems. A high load carrying oil such as ROYCO 555 is necessary to meet the load requirements and reliability demands of those systems. More recently with the need to transmit more power and higher loads through helicopter gearbox and transmission systems, extensive evaluation by helicopter airframe manufacturers has demonstrated this improved load carrying ability which has resulted in improved reliability - particularly by increased time between overhaul (TBO.) This oil should only be used in applications where synthetic oils have been specified or in systems expressly designed for synthetic lubricants.

NOTE: ROYCO 555 should not be used with silicone-based elastomers.

### **PACKAGING:**

ROYCO 555 is available in 55 gallon drums, 5 gallon pails, and 1 quart cans packed twenty-four to a carton.

### **SPECIFICATIONS:**

ROYCO 555 meets the requirements of and is qualified under U.S. Military specification: DoD-PRF-85734 as well as meeting the requirements of:

- U.K. DERD.2497 ▪ XAS-2354 ▪ British DEF STAN 91-100 ▪ NATO Code O-160
- UK Joint Service Designation OX-26

ROYCO 555 is approved commercially for use in aircraft transmissions, gearboxes, and gas turbine engines manufactured by Pratt & Whitney (521C Type II), Pratt & Whitney Canada, IAE, CFM International, General Electric (D-50 TF 1), RR Allison (EMS-53 (Obsolete)), Rolls Royce, Garrett, Motorlet, and Turbomeca, as well as Garrett and Sunstrand accessories. A detailed application list is available upon request.

ROYCO 555 is also approved for use in Eurocopter/Aerospatiale, Boeing Vertol, Bell Helicopter Textron, Agusta, Hughes/McDonnell Douglas, MBB, Sikorsky, and Westland helicopter transmissions.

**For more information please refer to the relevant Material Safety Data Sheet accompanying each product.**

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**ROYCO 555**

PROPERTY	SPECIFICATION	TYPICAL
Viscosity, cSt		
@210°F	5.0-5.5	5.40
@100°F	25 min.	29.5
@-40°F	13,000 max.	10,300
Flash Point, °F (C.O.C.)	475 min.	508
Fire Point, °F		555
Pour Point, °F	-65 max.	-75
Neutralization No.	0.5 max	0.3
Synthetic Rubber		
Swell "H" (72 hrs/158°F),%	5.0-25.0	12.5
Swell "F" (72 hrs/400 °F), %	5.0-25.0	14.7
Thermal Stability (96 hrs/525 °F)		
Viscosity; @ 100 °F, % Change	5.0 max.	1.3
Acid Number Change, mg KOH/g	6.0 max.	1.75
Metal Weight Change, mg/cm <sup>2</sup>	± 4.0 max.	0.40
Oxidation and Corrosion Stability (72 hrs/400 °F)		
<u>Corrosion</u>		
Steel, wt. change, mg/cm <sup>2</sup>	± 0.2max.	0.02
Silver, wt. change, mg/cm <sup>2</sup>	± 0.2 max.	0.02
Aluminum, wt. change, mg/cm <sup>2</sup>	± 0.2 max.	0.01
Magnesium, wt. change, mg/cm <sup>2</sup>	± 0.2 max.	0.03
Copper, wt. change, mg/cm <sup>2</sup>	± 0.2 max.	0.05
<u>Oxidation</u>		
Viscosity Change @ 100°F, %	-5 to +25	12.5
Total Acid Number Change	3.0 max.	0.6
Contamination, mg/100 ml	50.0 max.	0.9
Load Carrying Capacity, Ryder Gear @ 165°F		
Scuff Rating, lb/in <sup>2</sup>	Typical	3835
Relative Rating, %	Typical	155
Sediment, 1.2 micron filter, mg/L	10 max.	2.0
Foaming, ml initial/ml final		
Seq I @ 77°F	25/0	nil
Seq II @ 200°F	25/0	nil
Seq III @ 77°F	25/0	nil
Specific Heat, Cp		
@ 37.8 °C	Typical	0.466
@ 260°C	Typical	0.618
Dynamic Rust Test, synthetic sea water		
Degree of rusting, 60°C, 24 hrs	None	PASS
API Gravity		10.89

ROYCO 555: 07/15/05LFwas



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