



# MARINE HYDRAULIC OIL

*HIGH PERFORMANCE SYNTHETIC BLEND HYDRAULIC OIL  
ZINC FREE, ASHLESS FORMULA*

## **BEYOND SYNTHETIC®**

Royal Purple's Marine Hydraulic Oil is an inherently biodegradable, ashless, environmentally responsible, high performance hydraulic oil formulated for those users that need a high-performance oil to protect their equipment yet are concerned about the environment.

Marine Hydraulic Oil meets the U.S. Fish and Wildlife Department's and the EPA's toxicity test requirements for marine life. Marine Hydraulic Oil is an excellent, high-performance, hydraulic oil for use in sensitive environments such as on off-shore platforms and other marine related services.

The long life and high film strength of Marine Hydraulic Oil greatly increases equipment reliability. Marine Hydraulic Oil also provides excellent protection in highly corrosive environments. It gains its performance advantage over competing oils through its superior blend of base oils plus Royal Purple's proprietary Synerlec additive technology. This unique, synthetic additive technology is proven to make bearings and equipment run smoother, cooler, quieter, longer and more efficiently.

## **SYNERLEC® ADDITIVE TECHNOLOGY MAKES THE DIFFERENCE!**

Synthetic oils enable Royal Purple to make superior lubricants, but it is Royal Purple's advanced Synerlec additive technology that gives its lubricants their amazing performance advantages. Synerlec additive technology truly is beyond synthetic.

Synerlec additive technology forms a tough, slippery, synthetic film on all metal surfaces. This proprietary film significantly improves lubrication: first, by increasing the oil film's thickness, and second, by increasing the oil film's toughness, both of which help to prevent metal-to-metal contact. It displaces moisture from metal surfaces and protects all metals against rust and corrosion. It also fortifies the oil against the detrimental effects of heat, which causes oil to oxidize.

## **PERFORMANCE ADVANTAGES**

### **High Film Strength**

Marine Hydraulic Oil with Synerlec additive technology protects hydraulic components beyond the ability of other environmentally friendly hydraulic oils.

### **Longer Oil Life**

Marine Hydraulic Oil has outstanding oxidation stability and keeps equipment clean.

### **Excellent Corrosion Protection**

Marine Hydraulic Oil with Synerlec additive technology's tough oil film forms an ionic bond on metal surfaces. This film not only protects during operation and acts as a preservative oil during shutdown, but it also provides instant lubrication upon startup to prevent wear.

### **Improved System Performance**

Marine Hydraulic Oil frequently lowers operating temperatures and restores smooth, consistent performance to erratically operating hydraulic systems.

### **Rapidly Separates from Water**

Marine Hydraulic Oil rapidly and completely separates from water, which can easily be drained from the bottom of oil reservoir to keep the oil dry.

### **Synthetic Solvency**

Marine Hydraulic Oil's natural solvency cleans up dirty equipment and keeps it clean.

### **Compatible with Seals**

Marine Hydraulic Oil has excellent seal compatibility.



### Environmentally Responsible

The components of Marine Hydraulic Oil are TSCA listed and meet EPA, RCRA and OSHA requirements. It is inherently biodegradable, meets the U.S. Fish and Wildlife Department's toxicity requirements and has passed the EPA/600/4-90-027F\* toxicity test requirement. It extends oil drain intervals due to longer oil service life, eliminates premature oil changes due to oil / water emulsions, greatly reduces oil purchases and disposal costs and conserves energy.

**Marine Hydraulic Oil meets or exceeds the requirements of these manufacturers:**

- Cincinnati Milacron P-68, 69, 70
- Denison P-46; T-5D; HF- 0, 1 & 2
- Vickers 104C Vane; 35VQ-25
- Sperry Vickers I-286-S; M-2950-S
- Lee Norse 100-1
- Jeffery No. 87
- Ford M-6C32
- U.S. Steel 127, 136
- B.F. Goodrich 0152
- General Motors LH-04-1, 06-1, 15-1

Typical Properties*	Method	ISO GRADE				
		15	22	32	46	68
Density @ g/cm <sup>3</sup>	D4052	0.8594	0.8660	0.8635	0.8823	0.8898
Viscosity	D445					
cSt @ 40°C		15	22	32	46	68
cSt @ 100°C		3.4	4.2	5.56	7.0	8.8
Viscosity Index	D2270	95	100	105	100	95
Flash Point, °F/°C	D92	360/182	494/257	424/218	440/227	440/227
Pour Point, °F/°C	D97	-60/-51	-54/-48	-49/-45	-44/-42	-54/-48
Copper Corrosion Test	D130	1A	1A	1A	1A	1A
Steel Corrosion Test	D665B	No Rust	No Rust	No Rust	No Rust	No Rust
Demulsibility Test	D1401	41/38/1(5)	40/40/0(5)	40/40/0(10)	40/39/1(10)	42/38/0(10)
FZG Gear Test, A/8.3/90	DIN ISO		>12	>12	>12	>12
Biodegradability	OECD 301B	20-60%	20-60%	20-60%	20-60%	20-60%

*\*Properties are typical and may vary.*