



Syncon™ EMGARD® EP Gear Oil

Conoco Syncon™ EMGARD® EP Gear Oil is specifically formulated to protect moderately to heavily loaded industrial gears and bearings. It provides excellent antiwear and load-carrying capability, as well as strong rust inhibition and demulsibility performance. Syncon™ EMGARD® EP Gear Oil meets or exceeds the requirements of the industry standard U.S. Steel 224 and AGMA 9005-EO2 (formerly 250.04) EP Synthetic Gear Lubricant specifications. Syncon™ EMGARD® EP Gear Oil is approved for use in General Atomics' Electrical Wheel Gear Units and is approved for use in GE 772, 776, 791, 788, 787, GDY85 and GEB23 wheelmotors (as per GE Transportation Systems Specification D50E27).

Blended with 100% synthetic base stocks and advanced EP additives, Syncon™ EMGARD® EP Gear Oil provides improved high-temperature stability and cleanliness, low-temperature fluidity and overall lubricity. These characteristics help reduce costs by extending service intervals, eliminating seasonal oil changes, minimizing lubricant use and disposal and reducing power consumption.

Applications

Syncon™ EMGARD® EP Gear Oil is suitable for use in spur, helical, herringbone, bevel and most types of industrial gearing. It also is suitable for ball, roller and other types of antifriction bearings. Syncon™ EMGARD® EP Gear Oil is not recommended for use in worm gears or automotive hypoid gears.

**Premium Synthetic
EP Gear Oil;
Approved for
GE Wheelmotors**

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Note

When converting to Conoco Syncon™ EMGARD® EP Gear Oil, OEM recommendations should be followed when choosing the appropriate viscosity grade. Maximum performance is provided when the equipment is clean and in good condition. Contamination from previous lubricants or their residues should be minimized, since this will tend to compromise the performance enhancements of the synthetic. The synthetic base stocks used in Conoco Syncon™ EMGARD® EP Gear Oil has been blended to provide compatibility with conventional seal materials, such as nitrile, fluorocarbon and polyacrylate, provided the seals are used within the temperature limitations specified by the seal manufacturer.

Outstanding Features

- Approved for use in both GE and General Atomic wheelmotors (check your OEM technical and warranty documents to confirm approval for your motors)
- Low-temperature fluidity – easy startup
- Extreme-pressure properties – excellent load-carrying capacity
- Energy efficient
- Low coefficient of friction
- Excellent lubricity
- Corrosion protection with bronze, copper and steel metallurgy
- Extended lubricant life
- Longer gear life
- Good demulsibility for rapid water separation
- Lower operating temperatures

Due to continual product research and development, the information contained herein is subject to change without notification.

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Table I – Syncon™ EMGARD® EP Gear Oil

Typical Properties				
ISO Grade		320	460	680
AGMA Grade		6EP	7EP	8EP
Viscosity,	ASTM D445			
cSt @ 40°C		320	460	680
cSt @ 100°C		29	37	48
SUS @ 40°C		1480	2130	3150
SUS @ 100°C		138	174	224
Viscosity Index	ASTM D2270	124	124	124
Pour Point,	ASTM D97			
°F		-30	-25	-15
°C		-34	-32	-26
Flash Point,	ASTM D92			
°F		460	460	460
°C		238	238	238
Specific Gravity, 60°F (15.6°C)		0.877	0.881	0.885
Density, lb/gal	ASTM D1298			
60°F		7.30	7.34	7.37
15.6°C		877	881	885
API Gravity, 60°F (15.6°C)	ASTM D287	29.9	29.0	28.4

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Table II – Syncon™ EMGARD® EP Gear Oil Typical Performance Data
Typical Properties

U.S. Steel 224 Specification	Pass
AGMA 250.04 EP Specification	Pass
Timken EP D2782 OK Load, lbs	70+
Four-Ball EP, D2783 Weld Point, kg	250
Load Wear Index, kg	54
FZG Spur Gear Test, Pass Load Stage	12
Four-Ball Wear, D4172, mm	
20 kg, 1800 rpm, 54°C, 1 hr	0.25
40 kg, 1200 rpm, 75°C, 1 hr	0.38
Oxidation Stability, USS S-200	
Viscosity Increase at 210°F, %	<4
Precipitation Number	Trace
Rust Text, D0-665, A&B	Pass
Copper Corrosion, D130, 100°C, 3 hrs	1a
Demulsibility, D2711	
Free Water, ml	83
Emulsion, ml	<1
Water in Oil, %	<1
Demulsibility, D1401, 82°C	42-38-0
Foam Suppression, D892,ml	
Sequence I	<20/0
Sequence II	nil
Sequence III	<20/0

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