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VANDERBILT

Technical Data

Petroleum Department

VANLUBE® 0902

Lubricant Additive

Multifunctional Additive Package for Industrial Gear Oil

Typical Properties

Physical State	Liquid
Density at 25°C, Mg/m ³	1.055
Viscosity at 100°C, mm ² /s	12.0
Flash Point, PMCC, °C	>99
Sulfur Content, %	25.6
Phosphorus Content, %	0.9
Nitrogen Content, %	3.5

VANLUBE 0902 additive is a metal-free additive package recommended for use at 1.5 to 2.25% weight in suitable base stocks to formulate industrial gear oils. Gear oils formulated with **VANLUBE 0902** additive should meet or exceed U. S. Steel 224 and AGMA 9005 requirements. Typical results obtained in ISO 220 paraffinic base fluid are provided below:

	MASS PERCENT				
	VANLUBE 0902 additive	2.0	1.5		
	ISO 220 Blend	98.0	98.5		
				U.S. Steel 224 Requirement	
				AGMA 9005 Requirement	
Timken ASTM D2782 OK load, lb		60	60	60 Min	60 Min
4-Ball EP ASTM D2783					
	Weld Point, kgf	315	315	250 Min	
	Load Wear Index, kgf	60.3	57.9	45 Min	
4-Ball Wear U.S. Steel S-205					
	54°C, 1800 rpm, 20 kgf, 1h Scar diameter, mm	0.29	0.30	0.35 Max	
Copper Strip ASTM D130					
	3h @ 100°C	1b	1b	1b Max	1b Max
	24h @ 100°C	1b	1b		
Rust Test ASTM D665					
	A Distilled Water	Pass	Pass	Pass	
	B Synthetic Sea Water	Pass	Pass	Pass	Pass
Oxidation Stability U.S. Steel S-200					
	121°C, 312h, 10L/h air; Viscosity increase,%	4.58	4.85	6.0 Max	6.0 Max
Demulsibility ASTM D2711 Procedure B					
	Water in Oil, %	0.6	0.5	2 Max	2 Max
	Total Free Water, mL	84	85	80 Min	80 Min
	Emulsion, mL	0.20	0.2	1 Max	2 Max
FZG, Load Stage			12	11 Min	12 Min
Foam Tendency/Stability ASTM D 892*					
	Sequence I @ 24°C, mL/mL	0/0			75/10
	Sequence II @ 93°C, mL/mL	0/0			75/10
	Sequence III @ 24°C, mL/mL	0/0			75/10

* Data is obtained with the addition of 170 ppm of a suitable polymeric defoamer.

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rev07/11

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