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Technical Data

VANLUBE® 972M

Extreme Pressure Additive Corrosion Inhibitor

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VANLUBE® 972M

Extreme Pressure Additive

Corrosion Inhibitor

Typical Properties

Physical State:	Liquid
Density at 25°C, Mg/m ³ :	1.2
Viscosity at 100°C, mm ² /s:	6.0
Flash Point, PMCC, °C	110
Sulfur Content, %:	23.0
Nitrogen Content, %:	8.0

VANLUBE 972M, a thiadiazole derivative in polyalkylene glycol, is an ashless extreme pressure additive recommended for use in grease, some polyalkylene glycols (PAG) and some synthetic esters. The advantages this product offers are:

- **VANLUBE 972M** is biodegradable.
- **VANLUBE 972M** is an easily handled liquid.
- **VANLUBE 972M** is a cost-effective alternative to other EP additives.
- **VANLUBE 972M** does not have the strong sulfur odor that is typical of many other sulfur EP additives.

VANLUBE 972M is not soluble in mineral oils.

Table 1: Comparison with Antimony Dialkyldithiocarbamate (SDDC)

	Mass Percent					
	1.5	1.5	1.5			
VANLUBE® 972M						
SDDC				3.0	3.0	3.0
Lithium Grease, NLGI 2	98.5			97.0		
Lithium Complex, NLGI 2		98.5			97.0	
Aluminum Complex			98.5			97.0
Timken OK Load (ASTM D 2509) lb	60	60	70	20	20	20
4-Ball Wear (ASTM D 2266), 1200 rpm, 75 °C, 40 kgf, mm	0.57	0.61	0.74	0.75	0.58	0.78
4-Ball EP (ASTM D 2596), Weld Point, kgf	400	315	315	250	400	400
Copper Corrosion (ASTM D 4048), 24 h at 100 °C	2e	2e	2e	4b	4b	4b

Table 2: **VANLUBE® 972M** as EP Booster/ Corrosion Inhibitor

	Mass Percent					
	3.0	3.0				
SDDC						
VANLUBE® 73 Super Plus			3.0	2.75	2.25	2.00
VANLUBE® 972M	0.25	0.25			0.25	0.25
Lithium Grease, NLGI 2	96.75					
Lithium Complex, NLGI 2		96.75	97.25	97.00	97.50	97.75
Timken OK Load (ASTM D 2509), lb	80	80	70	<40	70	60
Copper Corrosion (ASTM D 4048), 24 h at 100 °C	4a	2e	4b	4b	1a	1a

Table 3: Optimize Formulation

	Mass Percent		
VANLUBE® 972M	2.0	1.0	1.0
MOLYVAN® L	---	0.5	0.25
Primary ZDDP	---	---	0.75
Lithium Grease, NLGI 2	98	98.5	98
Timken OK Load (ASTM D 2509) lb	80	70	80
4-Ball Wear (ASTM D 2266), 1200 rpm, 75 °C, 40 kgf, mm	0.64	0.42	0.46
4-Ball EP (ASTM D 2596), Weld Point, kgf	400	400	315
Copper Corrosion (ASTM D 130), 24 h at 100 °C	2e	2e	1b

Table 4: EP Data in PAG Fluid

	Mass Percent
VANLUBE® 972M	1.0
BREOX® B35, ISO 32 PAG Fluid	99
Timken OK Load (ASTM D 2509), lb	60
4-Ball EP (ASTM D 2596), Weld Point, kgf	315
4-Ball EP (ASTM D 2596), LWI, kgf	59.6

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