



Distributed in the Interest
of Product Development

VANDERBILT

Technical Data

Petroleum Department

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					
VANLUBE® 972M	1.5	1.5	1.5			
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					
SDDC	3.0	3.0				
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	97.00	97.25	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

R.T. Vanderbilt Company, Inc., 30 Winfield Street, P.O. Box 5150, Norwalk, CT 06856-5150
Telephone: (203) 853-1400 - Fax: (203) 853-1452 - Web Site: www.rtvanderbilt.com

Before using, read, understand and comply with the information and precautions in the Material Safety Data Sheets, label and other product literature. The information presented herein, while not guaranteed, was prepared by technical personnel and, to the best of our knowledge and belief, is true and accurate as of the date hereof. No warranty, representation or guarantee, express or implied, is made regarding accuracy, performance, stability, reliability or use. This information is not intended to be all-inclusive, because the manner and conditions of use, handling, storage and other factors may involve other or additional safety or performance considerations. The user is responsible for determining the suitability of any material for a specific purpose and for adopting such safety precautions as may be required. R.T. Vanderbilt Company, Inc. does not warrant the results to be obtained in using any material, and disclaims all liability with respect to the use, handling or further processing of any such material. No suggestion for use is intended as, and nothing herein shall be construed as, a recommendation to infringe any existing patent, trademark or copyright or to violate any federal, state or local law or regulation.

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

MOLYVAN and VANLUBE are registered trademarks of R.T. Vanderbilt Company, Inc.
BREOX is a registered trademark of BP p.l.c.