



CHRISTO-LUBE® PM **Powdered Metal Lubricants**

Lubrication Technology Inc.

7595 Gallia Pike

Franklin Furnace, Ohio, 45629

Phone: (740) 574-5150

Toll-free: (800) 477-8704

Fax: (740) 574-4740

E-mail: sales@lubricationtechnology.com

www.lubricationtechnology.com

CHRISTO-LUBE® PM POWDERED METAL LUBRICANTS

Lubrication Technology, Inc. manufactures high technology synthetic lubricants based on perfluoropolyethers, fluorinated polysiloxanes, esters, polyalphaolefins and synthetic hydrocarbon cooligimers under the trade name **CHRISTO-LUBE®**.

CHRISTO-LUBE® PM Perfluoropolyethers

CHRISTO-LUBE® PM Perfluoropolyether (PFPE) synthetic fluids have excellent chemical and tribological properties and are available in a wide range of viscosities. They are available in two different structures: linear and branched. Thus, many grades are available for the selection of the best lubricant for specific applications. Specific grades are recommended when high temperature performance is required. Other grades have a wider range of application because of their better viscosity-temperature properties. This allows their use at very low temperatures where cold starting is a primary concern. **CHRISTO-LUBE® PM** Perfluoropolyethers are also chemically inert, allowing for their use in harsh chemical environments and clean rooms.

Capabilities of CHRISTO-LUBE® PM Fluids for Use in Sintered Metal Bearings

CHRISTO-LUBE® PM Perfluoropolyether fluids are used in sintered metal bearings in applications requiring longer life and wider temperature capabilities than can be provided by mineral oil, synthetic hydrocarbon oil, or stabilized silicone oil. PFPE fluids have been shown to double the life of sintered metal bearings in high-temperature applications (150-180°C) when compared to silicone oils.

CHRISTO-LUBE® PM Perfluoropolyether fluids also allow designs that do not include lubricant-impregnated felt or cellulose wicking materials, enabling a simpler, less-expensive design than with other oils. This allows for an overall cost savings when compared to silicone oils or other synthetic oils requiring wicking material or reservoirs.

Availability

CHRISTO-LUBE® lubricants are stock items and are usually shipped within 2 days of an order. These products are available in a wide variety of packaging, including dropper and needle bottles, gallon jugs, and five-gallon pails. Please contact Gary Goodan at 740-574-5150 or 800-477-8704 for pricing, packaging, and ordering information, or to discuss the specifics of your application requirements.

TYPICAL PROPERTIES OF CHRISTO-LUBE® PM PERFLUOROPOLYETHER FLUIDS

CHRISTO-LUBE® PM Perfluoropolyether Fluids have the following unique features:

- Non-flammable and non-toxic
- Excellent thermal stability
- Very low evaporative loss
- Low friction coefficient
- Excellent low temperature starting torque
- High viscosity indices

PROPERTIES	METHOD	UNIT	WIDE TEMPERATURE APPLICATIONS			HIGH TEMPERATURE APPLICATIONS		
			PM 150	PM 300	PM 600	PM 250H	PM 450H	PM 1200H
Kinematic Viscosity (40°C)	ASTM D445	cSt	85	159	310	81	147	345
Kinematic Viscosity (100°C)	ASTM D445	cSt	22	45	86	10.4	16.5	33
Viscosity Index	ASTM D2270		286	338	343	108	117	135
Pour Point	ASTM D97	°C	-75	-65	-60	-35	-30	-25
Evaporative Weight Loss (149°C, 22 hr.)	ASTM D2595	%	0.8	n.d.	n.d.	1.5	0.7	0.5
Evaporative Weight Loss (204°C, 22 hr.)	ASTM D2595	%	3.0	0.7	0.4	2.0	1.7	1.2
Density (20°C)	ASTM D891	g/cm ³	1.83	1.85	1.86	1.90	1.91	1.91
Surface Tension (20°C)	ASTM D1331	dynes/cm	24	25	25	22	22	24
Four Ball EP Initial Seize Load	IP 239	Kg	398	631	500	282	251	282
Welding Load			562	631	708	398	447	708
Mean Hertz Load			114	115	112	115	122	124
Four Ball Wear Test (75°C, 1 hr, 1200 rpm, 40kg) Avg. Scar Diameter	ASTM D4172B	mm	0.92	0.97	1.21	0.66	0.81	0.90

n.d.: not detectable

LTI POWDERED METAL CONSULTATION SUPPORT SHEET

Please provide as much information as possible so that we may recommend the best lubricant for your application.

CONTACT INFORMATION

Name: _____

Company: _____

Address: _____

Phone: _____

Fax: _____

Email: _____

APPLICATION INFORMATION

Type of equipment: _____

Manufacturer and Model: _____

Type of Bearing: _____

Bearing Manufacturer: _____

Bearing Material: _____

Porosity: _____

Surface Roughness: _____

I.D.: _____

O.D.: _____

Width: _____

Special Dimensions: _____

Shaft Material: _____

Surface Roughness and
Hardness of Shaft: _____

Mounting Position of Shaft
and Bearing:

Horizontal

Vertical

Inclined

Angle: _____

MOTION

Rotating Shaft

Rotating Bearing

Oscillation

Linear Sliding

Speed/Frequency: _____

Load: _____

ENVIRONMENT

Bearing Temperature: _____

Ambient Temperature: _____

Environmental Variables:

Fluids *Specify:* _____

Gases *Specify:* _____

Humidity *Specify:* _____

Electrical Current

Dust

Clean Room

Vacuum *Pressure:* _____

OPERATION

Hours or Cycles Per
Day: _____

Intermittent or

Continuous

Life Requirement (Hours or
Cycles): _____

LUBRICANT REQUIREMENTS

Low Temperature
Performance _____ °C/°F

High Temperature
Performance _____ °C/°F

Low Noise

Food Grade

Clean Room

Compatibility

Vacuum Compatibility

Chemical Compatibility

Prior Lubricant(s): _____

Notes: