Specification for
Polywater® PR Power Cable Lubricant

Description:

Polywater® Lubricant PR is a high performance, liquid cable pulling lubricant. Lubricant PR's silicone enhancement provides excellent tension reduction in all types of cable pulling. Its high shear resistance allows friction reduction even under high sidewall pressure in bends. Lubricant PR is slow drying. The residue is a thin, slippery film that retains lubricity for months after use.

Polywater® Lubricant PR is a stringy, silicone-enhanced liquid that can be poured or pumped into duct. It is recommended for underground, power cable pulling. The lubricant is suitable for transmission and distribution cable.

Performance Properties:

Lubricity: Typical values at 200 lbs/ft (2.91 kN/m) normal pressure. Results are based on the Friction Table Method described in the IEEE paper, Friction Theory and Lubrication Techniques for Improved Cable Pulling, 1985.

Cable Jacket Materials	Conduit/Innerduct	Kinetic Coefficient of Friction
XLPE	PVC	0.13
Hypalon	PVC	0.15
LLDPE	PVC	0.13

Coefficient of friction data is available on additional cable jackets and conduit substrates from American Polywater Corporation.

Coatability: Material will wet out evenly on all surfaces. It will not bead up or rub off of the cable jacket.

Combustibility: Lubricant has no flash point and is non-flammable.

Corrosivity: Lubricant is non-corrosive to steel, copper, or aluminum.

Pourability: A five-gallon pail of Polywater® Lubricant PR will empty from a Reike® spout without a notched air hole in lid in 1 minute 18 seconds and with a notched air hole in lid in 34 seconds.

Physical Properties:

Appearance:	Pourable, white, stringy liquid with no odor
Clay, Wax and Grease Content:	None
Percent Non-Volatile Solids:	<2 %
VOC Content:	None
Viscosity:	1,000 - 3,000 cps @ 10rpm
pH:	6.5 – 7.5
Toxicity:	Non-toxic and non-sensitizing

Cable Compatibility:

Polyethylene Stress Cracking: No stress cracking on DYNK (an untreated polyethylene prone to stress cracking) and LDPE cable jackets when tested by ASTM D1693.

Tensile and Elongation Effects: Cable jacket materials LLDPE, XLPE, HDPE, and Hypalon heat aged in Polywater® Lubricant PR pass tensile and elongation compatibility requirements from IEEE Standard 1210, Standard Tests for Determining Compatibility of Cable-Pulling Lubricants with Wire and Cable.

Volume Resistivity: There are no significant changes in the conductive properties of XLPE semi-conducting compounds when volume resistivity is tested according to IEEE Standard 1210, Standard Tests for Determining Compatibility of Cable-Pulling Lubricants with Wire and Cable.

Application Properties:

Package Availability: Multiple packages available for use: gallons, 5-gallon pails, and 330-gallon totes.

Application Systems: Application systems includes manual and automatic pumps and gravity-feed systems. Cable tension calculation software (Pull Planner™ 2000 for Windows™) available.

Temperature Use Range: 20°F to 120°F (-5°C to 50°C).

Temperature Stability: No phase-out after five freeze/thaw cycles or 24 hour exposure at 120°F.

Clean-Up: Non-staining. Complete clean-up possible with water.

Model Specification:

The cable pulling lubricant shall be Polywater® Lubricant PR. It shall produce a low coefficient of friction on a wide variety of cable jacket materials and shall conform to the physical and electrical requirements of IEEE 1210. The lubricant shall be silicone-enhanced, have a low solids content and the residue shall retain its slippery character. It shall not have a flash point.

No substitutions are permitted without certification from an officer of the manufacturer that the substitute product meets all of the requirements of this specification.

Test data and application information available upon request. Please call 800-328-9384.

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