



3M™ Multi-Purpose Gel Cable Lubricant

Product Description

3M™ Multi-Purpose Gel is a spreadable high performance silicone lubricant with microspheres that offer superior friction reduction recommended for use with most types of communication cables including copper and coaxial. Since the lubricant is a thick gel it can be hand applied or pumped into conduit. This gel is suitable for higher viscosity cable pulls and heavier cable jacket types.



Friction Testing

Friction is determined using standard Telcordia test procedure¹. The duct is wrapped 420° around a three-foot diameter. A 25-lb incoming weight is attached to the cable as it is pulled at a set rate of 65 feet per minute. A load cell takes pulling tension data which is used to determine a “dynamic” friction coefficient. Below is typical data.

Coefficient of Friction for MDPE Jacket Cable into HDPE Smoothwall Innerduct

Tension Incoming (lb)	Unlubricated	Lubricated with 3M MPG
25	>0.30	0.07

Product Features and Benefits

Feature	Benefit
Compatible with most commonly used communication cable jackets	One solution used for a variety of cable pulling jobs
Cleanly and evenly coats	Provides consistent lubricity to provide superior friction reduction
Non-staining/Non hazardous	Safe to use/dispose Easy to clean off
Slow drying for continuous lubricity	Continue to pull cable even after lubricant has dried Increase in productivity and cost-effective
Microspheres	Lower coefficient of friction
Thick gel doesn't drip and make a mess	Increased productivity during and after pull
Temperature stable	Consistent friction reduction Doesn't get thin or runny

¹ Telcordia Standard TR-NWT-002811; Generic Requirements for Cable Placing Lubricants.



Application Use

Use for all types of cable installations, including:

- Silicone-lined and pre-lubricated ducts
- Heavierweight cable, building construction
- Vertical-up runs at beginning of pull
- Inside and outside environments

3M™ Multi-Purpose Gel Cable Lubricant

Cable Lubricant Usage in Gallons

Quantity of 3M Multi-Purpose Gel Cable Lubricant in Gallons (Liters)
Length of Pull Feet (Meters)

Conduit Size inches (CM)	500 (152)	1,000 (304)	2,000 (608)	3,000 (912)	4,000 (1,216)	5,000 (1,520)	6,000 (1,824)
1 (2.5)	0.75 (2.83)	1.5 (5.67)	3 (11.35)	4.5 (17.03)	6 (22.71)	7.5 (28.39)	9 (34.06)
2 (5.0)	1.5 (5.67)	3 (11.35)	6 (22.71)	9 (34.06)	12 (45.42)	15 (56.78)	18 (68.13)
3 (7.5)	2.25 (8.51)	4.5 (17.03)	9 (34.06)	13.5 (51.10)	18 (68.13)	22.5 (85.17)	27 (102.20)
4 (10)	3 (11.35)	6 (22.71)	12 (45.42)	18 (68.13)	24 (90.84)	30 (113.56)	36 (136.27)
5 (12.5)	3.75 (14.19)	7.5 (28.39)	15 (56.78)	22.5 (85.17)	30 (113.56)	37.5 (141.95)	45 (170.34)
6 (15)	4.5 (17.03)	9 (34.06)	18 (68.13)	27 (102.20)	36 (136.27)	45 (170.34)	54 (204.41)

Formula: $.0015 \times L \times d$

L= length in feet

D= diameter of conduit in inches

Formulation calculates how many gallons of lubricant are necessary to provide a 10 mil coating over the entire length of conduit

Cable Compatibility & Performance

Polyethylene Stress Cracking: 3M™ Multi-Purpose Gel Lube does not cause environmental stress cracking of polyethylene jackets commonly found on communications cables. Untreated polyethylene (Union Carbide DYNK) and MDPE jacket material were both tested according to ASTM standard method.¹ After 168 hours exposure none of the test specimens showed failures.

Polycarbonate Stress Cracking: 3M™ Multi-Purpose Gel Lube will not stress crack polycarbonate. Polycarbonate bars are bent to a defined strain and exposed to lubricant as described in the Telcordia standard², Section 8.2, Stress Cracking of Polycarbonate. After 48 hours, none of the test specimens showed signs of cracking.

Coatability: Coatability is a measure of the lubricants' ability to coat the cable jacket as a thin film for continued lubricity during longer pulls. 3M Multi-Purpose Gel Cable Lubricant will coat evenly on the cable jacket surfaces. Lubricant will not bead up or rub off of jacket sample. A 1/2 –inch (13 mm) diameter MDPE fiber cable dipped six inches (152 mm) into the Multi-Purpose Gel lube, when withdrawn and held vertically will retain a minimum of 10 grams of Multi-Purpose Gel lubricant for one minute at 70° F (21°C).

Cling Factor: Cling factor is a measure of the ability to apply the lubricant and have it stay on the jacket while the cable enters the duct. A six-inch length (152 mm) of a 1/2 –inch (13 mm) diameter cable will hold at least 25 grams of Multi-Purpose Gel for one minute when held vertically at 70° F (21°C).

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

¹ASTM Test Method D1693, Environmental Stress-Cracking of Ethylene Plastics.

² Telcordia Standard TR-NWT-002811; Generic Requirements for Cable Placing Lubricants.

Physical Properties

	Property	Result
Application Properties:	Appearance:	Opaque-white, stringy liquid
	Percent Non-Volatile Solids:	5 %
Temperature Use Range: 20°F to 120°F (-5°C to 50°C)	VOC Content:	0 gms/liter
	Viscosity:	40,000 – 70,000 cps @10rpm
	pH:	6.5 – 7.5

Temperature Stability

No phase-out after five freeze/thaw cycles or five-day exposure at 120°F (50°C).

Will not phase out or separate during the shelf life of lubricant.

Clean-Up

Use water to clean up the area.

Storage and Shelf Life

Store product tightly sealed and away from direct sunlight.

Lubricant shelf life is one year past the date of manufacture.

Directions for Use

3M™ Multi-Purpose Gel Cable Lubricant can be squeezed or

hand applied directly to the cable. Directly lubricate the cable during the entire portion of the pull as it enters the conduit.

For clean-up, use a cloth to wipe off excess lubricant from the end of the cable. The remaining residue will evaporate quickly.



In addition to 3M™ Multi-Purpose Gel Cable Lubricant, 3M also makes 3M™ Concentrated Multi-Purpose Cable Lubricant and 3M Multi-Purpose Liquid Cable Lubricant, available in many sizes to fit your needs.

Ordering Information

Product Number	Product Description	3M ID	MOQ
CL-MPG-QT	Multi-Purpose Gel Quart Squeeze Bottle	80-6113-3175-4	12
CL-MPG-1	Multi-Purpose Gel One Gallon Pail (3.78 Liter)	80-6113-3174-7	4
CL-MPG-5	Multi-Purpose Gel Five Gallon Pail (18.9 Liter)	80-6113-3176-2	1

3M is a trademark of 3M Company.

Important Notice

All statements, technical information, and recommendations related to 3M's products are based on information believed to be reliable, but the accuracy or completeness is not guaranteed. Before using this product, you must evaluate it and determine if it is suitable for your intended application. You assume all risks and liability associated with such use. Any statements related to the product which are not contained in 3M's current publications, or any contrary statements contained on your purchase order shall have no force or effect unless expressly agreed upon, in writing, by an authorized officer of 3M.

Warranty; Limited Remedy; Limited Liability.

This product will be free from defects in material and manufacture from the time of purchase. **3M MAKES NO OTHER WARRANTIES INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** If this product is defective within the warranty period stated above, your exclusive remedy shall be, at 3M's option, to replace or repair the 3M product or refund the purchase price of the 3M product. **Except where prohibited by law, 3M will not be liable for any loss or damage arising from this 3M product, whether indirect, special, incidental or consequential regardless of the legal theory asserted.**



Communication Markets Division 3M Telecommunications

6801 River Place Blvd.
Austin, TX 78726-9000
800/426 8688
Fax 800/626 0329
www.3MTelecommunications.com

Please recycle. Printed in USA
© 3M 2009. All rights reserved.
80-6113-2892-5