<u>E0900237-v7: Acceptable Coolants and Lubricants</u>

The following coolants and lubricants can be used on parts intended for the LIGO UHV system as long as the parts are Cleaned & Baked well and/or undergo special Cleaning.

"Acceptable" means one of the following:
1) Of the requirements (fully synthetic; 100% water soluble; free of sulfur, chlorine, and silicone), they only meet the last three.
2) They do not meet one or more requirements in 1) but passed LIGO testing after being Cleaned & Baked well and/or undergoing special Cleaning.

This list is not meant to be exclusive but merely to provide some possible options.

Product Name	Manufacturer's Information
1) Tapmatic #1 Gold (Non-Aerosol)	ITW Pro Brands 805 E. Old 56 Highway Olathe, Kansas 66061, USA https://www.itwprobrands.com +1 800-241-8334
2) TRIM MicroSol 515 3) TRIM Sol	Master Fluid Solutions 501 West Boundary Street Perrysburg, OH 43551-1200, USA https://www.masterfluids.com +1 419-874-7902
4) Novamet 760	Oemeta, Inc. 5655 West 610 South Salt Lake City, UT 84104, USA https://us.oemeta.com +1 801-953-0134
5) Ecocool Ultra-Motive	Fuchs Einsteinstraße 11 68169 Mannheim, Germany https://www.fuchs.com +1 708-333-8900
6) Solvac 1535g	ExxonMobil Product Solutions Company 22777 Springwoods Village Parkway Spring, TX 77389, USA https://www.mobil.com +1 800-662-4525

7) Brunel XF 343	Q8Oils
	232 Madison Ave, Suite 1200,
	New York, NY 10016, USA
	https://www.q8oils.com
	+1 212-532-3480
8) New Rapid Tap	Relton
	317 Rolyn Place
	Arcadia, CA 91007, USA
	https://www.relton.com
	+1 800-423-1505
9) Formula 1 Aqueous	Tap Magic
	P.O. Box 2238
	Little Rock, AR 72203, USA
	https://www.tapmagic.com
	+1 800-643-8026

Citation: Some of the information on this list comes from a document prepared by Yulin Li [slide 7 of https://uspas.fnal.gov/materials/17UCDavis/Vacuum/USPAS%202017%20Vacuum%20Session%205_4%20Fab_and_Clean.pdf]. A few fluids on that list are not here because the criteria is different from that of LIGO.