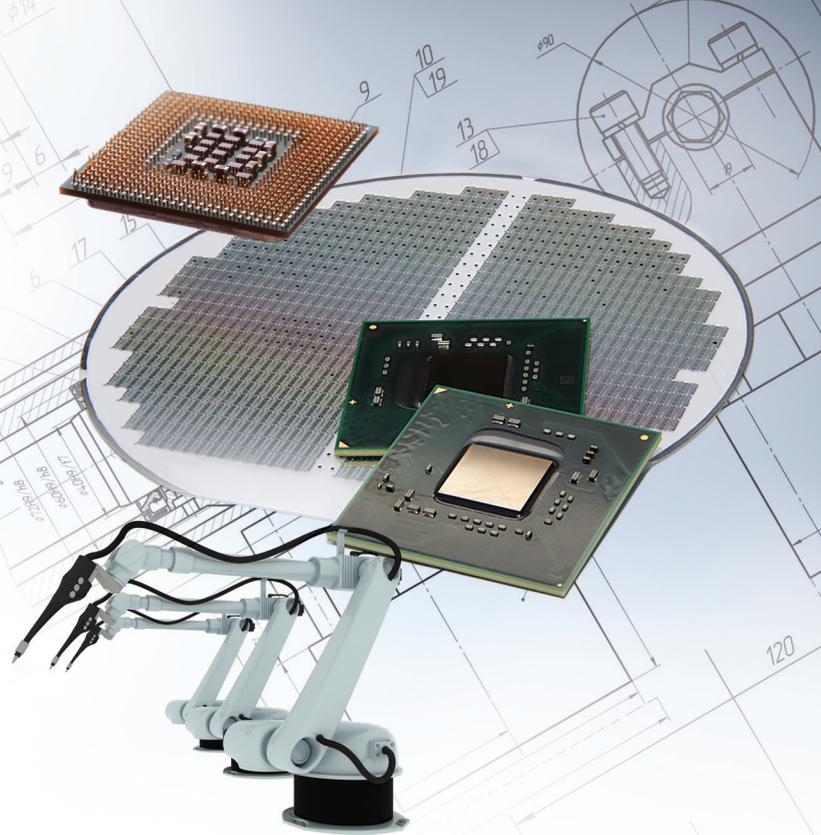




A QUAKER CHEMICAL COMPANY

*Innovation and Experience at Work*

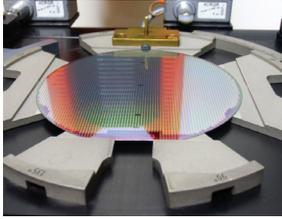
# CHRISTO-LUBE® Fluorinated Lubricants Semiconductor Manufacturing



## Process Chamber/Wafer Handling

*To avoid costly contamination and downtime, lubricants used in wafer-stepping operations must offer broad material compatibility, exceptional stability in the presence of highly aggressive chemicals, low torque – plus low vapor pressure (to  $10^{-12}$  Torr at 25°C) and extremely low out-gassing, essential for Class 1 through Class 10 clean room environments.*

<b>CHRISTO-LUBE® MCG 159</b>	-20°C to 260°C	Ultra-pure grease offers low outgassing, high thermal stability, high radiation and chemical resistance, and low migration.
<b>CHRISTO-LUBE® MCG 109</b>	-65°C to 250°C	NGLI Grade 2 grease offers wide operating temperature range, low outgassing and low migration.
<b>CHRISTO-LUBE® MCG 1037N</b>	-50°C to 260°C	Wide temperature, ultra-pure oil reduces wear and offers low out-gassing and excellent material compatibility.
<b>CHRISTO-LUBE® MCG 111</b>	-60°C to 230°C	NLGI Grade 2, wide-temperature range grease, compatible with all common materials of construction.



## Gears/Bearings

*Motors, valves and gears work better with fluorinated lubricants by ensuring low torque, low power output and minimal heat generation. Fluorinated lubricants are also compatible with all commonly used materials of construction for gears and bearings.*

<b>CHRISTO-LUBE® MCG 200</b>	<b>-30°C to 230°C</b>	Fluorosilicone grease with a proprietary additive package offers low outgassing, high thermal stability and good radiation and wear-resistance.
<b>CHRISTO-LUBE® MCG 709</b>	<b>-65°C to 250°C</b>	Very wide operating temperature range to improve equipment efficiency. Low outgassing, low migration and zero contamination.
<b>CHRISTO-LUBE® MCG 126</b>	<b>-15°C to 240°C</b>	NLGI Grade 2, wide-temperature, inert grease, compatible with all common materials of construction.
<b>CHRISTO-LUBE® MCG 1030</b>	<b>-23°C to 260°C</b>	Low vapor pressure oil with excellent thin-film strength, formulated specifically for reducing friction and wear in precision high vacuum applications.



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ECLI Products, LLC, does business as Engineered Custom Lubricants (ECL).