



# KOSME BOTTLING EQUIPMENT

**INDUSTRY:**  
Food & Beverage

**APPLICATION:**  
Pneumatic Cylinder in  
Bottling Equipment

**COMPONENT:**  
O-Ring Seals

**LOCATION:**  
Italy



## BACKGROUND

KOSME designs and manufactures a full range of bottling and beverage line equipment for filling, labelling, and stretch blow molding. The company was looking to replace an existing grease with an NSF H1 incidental food contact product to lubricate the O-ring seals of a pneumatic cylinder. The cylinder is a rotating piece of equipment that requires all seals to survive hundreds of thousands of cycles. Lubricating the o-ring seals can help protect the application from abrasion damage. The seals are made of EPDM elastomer and require good material compatibility from a lubricant. KOSME reached out to one of Nye's affiliates, to find a compatible grease.

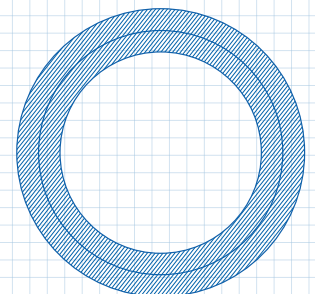
## CHALLENGES

- Lubricant must be NSF H1 Registered and compatible with EPDM elastomers.
- Can the lubricant eliminate stick-slip friction on the cylinder and exhibit long-term elastomer life under accelerated wear testing?

## SOLUTION FLUORCARBON GEL 880FG & 885FG

PTFE-thickened, heavy viscosity dimethyl silicone greases.

- NSF H1 registered, Halal & Kosher certified, and WRAS approved
- Excellent water resistance
- Mechanical stability under a wide temperature range



## RESULTS

The cylinders were lubricated with the Fluorocarbon Gel 880FG and 885FG and cycled for several hundred thousand repetitions. The cylinders were evaluated for smoothness (no stick-slip) and wear on the seals. Fluorocarbon Gel 880FG & 885FG passed all test requirements, confirming the lubricants will prevent stick-slip friction and wear throughout the lifespan of the O-ring. KOSME chose to use both products to lubricate the seals. These products are now specified in for the first fill on each filling machine.

## Typical Properties

Base Oil Properties	Conditions	Fluorocarbon Gel 880FG	Fluorocarbon Gel 885FG	Test Method
Chemistry	–	PTFE/Dimethyl Silicone	PTFE/Dimethyl Silicone	–
Temperature Range	–	-40 to 200 °C	-40 to 200 °C	–
Kinematic Viscosity	40 °C	18,407 cSt	410 cSt	ASTM D445
<b>Grease Properties</b>				
NLGI Grade	–	2	0	ASTM D217
Water Washout	1 h, 40 °C	0.25%	1.74%	ASTM D1264
Copper Corrosion	24 h, 100 °C	1 b	1 b	ASTM D4048
NSF Registration	–	H1 #133064	H1 #133065	–

\*CTM: Nye Company Test Method

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