



PFOA-Compliant Grease for Semiconductor Manufacturing

Application: Wafer Handling Robotics, Angular Contact Bearings

Location: USA

Challenge

New environmental regulations surrounding perfluorooctanoic acid (PFOA) have led many engineers and manufacturers to reconsider the materials they source in every aspect of their design. We were approached by a leader in the production of state-of-the-art vacuum robots that are designed specifically for tool automation in semiconductor wafer processing and other complex manufacturing environments. The customer needed to replace a grease that was discontinued by the manufacturer due to their inability to meet REACH-PFOA requirements. They needed a compliant vacuum grease that would promote long bearing life and reduce downtime costs.

- Can a replacement grease meet the 10 million cycle life requirements under vacuum, high load, and high temperatures?

Solution

NYECLEAN® 5057

A completely fluorinated grease thickened with PTFE formulated for vacuum environments. This grease complies with REACH PFOA regulations while offering minimal outgassing, particle generation, & vapor pressure. NYECLEAN® 5057 reduces friction and wear, extends bearing life, and possesses high temperature serviceability up to 250 °C

Results

Our research and development team formulated a new product for this customer, NYECLEAN® 5057. We provided the customer with validation data and on-demand technical support throughout the entire qualification process to prove that NYECLEAN® 5057 has performed as well or better than the discontinued competitor's product, with the additional benefit of NYECLEAN® 5057 being PFOA-compliant. After providing outgassing, vacuum stability, vapor pressure, and other test data and continuing to perform well as it quickly approaches the 10 million cycle target, NYECLEAN® 5057 was chosen as the customer's replacement grease. The grease has since generated interest from several bearing, linear guide, and ball screw/lead screw manufacturers, including those who supply the automotive and medical industries.

FUCHS Lubricants Co.
17050 Lathrop Ave.
Harvey, IL 60426

Phone 708-333-8900
inquiry@fuchs.com

Advantages

Low outgassing & particle generation

Extends bearing life

High temperature serviceability