

BIOCOM PATIBLE LUBRICANTS FOR MEDICAL O-RINGS

INDUSTRY:

Medical

APPLICATION:

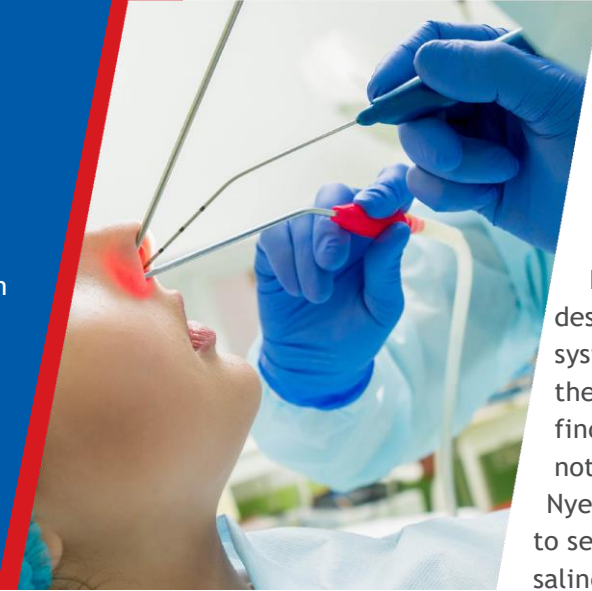
Sinus Implant
Deployment System

COMPONENT:

O-Ring

LOCATION:

USA



BACKGROUND

Biocompatible lubricants are often recommended for medical applications, especially those that may come in contact with the skin or body cavity. These lubricants should not be confused with food-grade lubricants which are not required to pass ISO-standard biocompatibility testing. A customer designing a hand-held, sinus implant deployment system approached Nye in search of a lubricant for their silicone O-ring. The customer was only able to find silicone-based lubricants on the market, which are not compatible with silicone components. They came to Nye in search of a non-silicone, biocompatible lubricant to seal their O-ring and protect the implant against saline and water.

CHALLENGES

Nye must provide lubricant that:

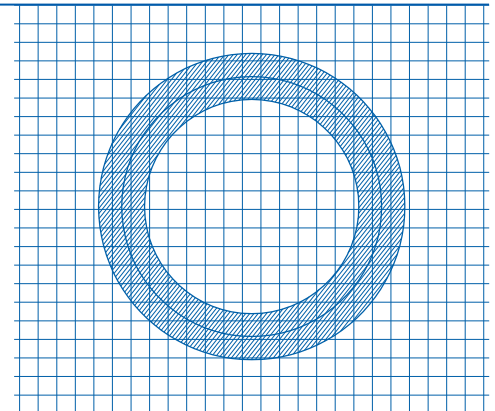
- Protects implant against saline and water
- Is plastic and silicone-compatible
- Is biocompatible and compatible with E-beam sterilization

SOLUTION

NYEMED[®] 7471

A completely fluorinated, inert fluid, exhibiting low solubility.

- Biocompatible per ISO 10993-5, 10993-10, and 10993-11
- Does not swell plastics and elastomers
- Seals against moisture
- Resists oxidation and chemicals



RESULTS

Nye sent the customer two lubricants from our biocompatible NyeMed[®] product line for testing. Ultimately, NyeMed[®] 7471 passed the customer's material compatibility and e-beam sterilization testing. The product was also able to successfully seal the O-ring to prevent saline from reaching the implant. The customer's application is now FDA-approved and NyeMed[®] 7471 has been approved for its delivery system.

Typical Properties

| Base Oil Properties | Conditions | NyeMed® 7471 | Test Method |
|-------------------------------|------------------------|------------------------|-------------|
| Chemistry | – | PFPE | – |
| Temperature Range | – | -50 to 250 °C | – |
| Flash Point | – | Non-Flammable | ASTM D92 |
| Base Fluid Apparent Viscosity | 25 °C | 840 cP | CTM* |
| | 45 °C | 476 cP | CTM* |
| Grease Properties | | | |
| Apparent Viscosity (cP) | 25 °C, 50/s shear rate | N/A | CTM* |
| Density | 25 °C | 1.83 g/cm ³ | CTM* |
| Oil Separation | 24 h, 100 °C | N/A | ASTM D6184 |
| Evaporation | 24 h, 100 °C | 0.01% | CTM* |

*CTM: Nye Company Test Method

Since 1844: Our performance is reflected in the value we bring to our customers.

Nye Lubricants is a leader in the innovation, formulation and provision of synthetic lubricants, enabling and improving breakthrough products and critical new technologies. We bring proven experience, deep technical knowledge and customer focus to solve our customers' toughest challenges, adding tangible value to products in a wide range of industries and applications.

Nye Lubricants, Inc.

12 Howland Road
Fairhaven, MA 02719 USA
Ph: +1.508.996.6721
Email: contact@nyelubricants.com

NyeLubricants.com



Dulub Co., Ltd. www.dulub.com.tw tel : 886-7-536 5500

