

MOTION CONTROL GEL FOR HAND-HELD APPLICATORS

INDUSTRY:
Medical

APPLICATION:
Hand-Held
Applicator Device

COMPONENT:
Spring-Driven
Mechanism

LOCATION:
USA



BACKGROUND

A 'start-up' MedTech company came to Nye in search of a plastic-adhesive gel for their spring-driven device. Hand-held, single-use applicators are employed in surgical and drug delivery applications where a high degree of force is required which must be moderated across time and/or distance to control shock, actuation timing and haptics (sound and feel perception). The start-up needed a non-silicone based gel that would reside in a channel of the mechanism without migrating during shipping and storage, dampen motion appropriately, resist radiation sterilization, and exhibit plastic compatibility.

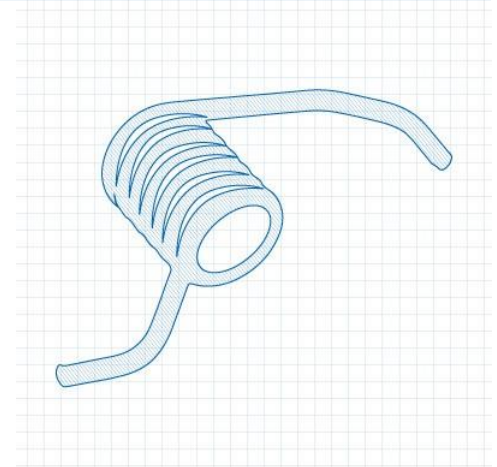
CHALLENGE

- Can we formulate a precision viscous hydrocarbon-based motion control gel with broad industry utility, that can withstand radiation sterilization of the device with minimal performance degradation?

SOLUTION FLUOROCARBON GEL 896-V 1

A tacky, high-viscosity synthetic hydrocarbon grease

- Narrow viscosity specification
- Good resistance to radiation and other sterilization processes
- Excellent adhesion to, and compatibility with, plastics
- UV light fluorescence for easy inspection



RESULTS

This precision motion control gel was fully validated in the device. Furthermore, success has now been replicated in a new program involving design of a hand-held applicator for a very promising device. Fluorocarbon Gel 896-V1 has cemented its place as the first in a series of products which help MedTech design engineers reduce pain and improve lives.

Base Oil Properties	Conditions	Fluorocarbon Gel 896-V1	Test Method
Chemistry		PTFE	
Temperature Range		-20 to 125°C	
Flash Point		>200°C	ASTM D-92
Pour Point		-17°C	ASTM D-97
Grease Properties			
Density	25°C	1.1 g/cm ³	ASTM D-70
Oil Separation	24 hrs, 100°C	0%	ASTM D-6184
Evaporation	24 hrs, 100°C	0.1%	ASTM D-972

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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



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