

### FUNCTIONAL DP-400

#### Food-Grade Dropping Point Improver for Lithium 12-Hydroxystearate Grease

##### APPLICATION:

**FUNCTIONAL DP-400** is a high performance additive designed for simple Lithium 12-hydroxystearate soap greases. The additive works by increasing the three dimensional association of soap fibers in the grease making it more resistant to flow at elevated temperatures.

**FUNCTIONAL DP-400** is very effective at treat levels of 0.3 to 0.5% in the grease. Significantly less than competitive products that require 1 to 5 %. And **DP-400** has a mild odor so that it does not impart an adverse odor to your final grease product

##### COMPOSITION:

**FUNCTIONAL DP-400** is an amine salt of an alkyl phosphate, approved by the U.S. Department of Agriculture as an ingredient in lubricants with incidental food contact under paragraph 21CFR 178.3570.

Typical Properties	
Appearance	Clear, colorless to light yellow liquid
Odor	Mild
Lbs per Gallon	8.0
Flash Point (COC)	> 80 C
Phosphorous, %	5.3 – 7.3
Acid Value, mg KOH / g	170 - 200
Solubility in Water	Slightly dispersible

##### TREATMENT LEVEL:

**FUNCTIONAL DP-400** is recommended at a treat level of 0.3% to 0.5% weight. The optimum treat level will depend on your particular grease. The recommended process is to incorporate the **FUNCTIONAL DP-400** into the grease before other performance additives are added. Using an appropriate mixer for grease, the **DP-400** should be mixed in at 90° - 100°C for 2 hours then follow the mixing conditions for adding additional performance additives. Allow the grease to cool before testing.

This Technical Data Sheet and the Material Safety Data Sheet contain information believed to be accurate and reliable. No warranty is made, however, to information beyond the control of FUNCTIONAL PRODUCTS INC. The engineering and management personnel of the user are responsible for determining the suitability of this or any product for any specific application, and this information is offered to them for that purpose.

7/12/2011

The following data was obtained using a formulation consisting of 0.5% **FUNCTIONAL DP-400** in comparison to a competitive product A at 3% in unadditized Lithium 12-hydroxystearate soap grease.

<b>Properties and Performance of FUNCTIONAL DP-400 vs. Competitor A</b>			
	Unadditized Grease	0.5% FUNCTIONAL DP-400	3% Competitor A
Unworked Penetration	267	327	330
Dropping Point, °C	193	230	234
Odor imparted	--	Mild	Strong, musky
Color	Brown	Light Brown, Creamy	Brown

### HANDLING:

In its concentrated form **FUNCTIONAL DP-400** is a skin and eye irritant, and should be handled with suitable personal protection. The concentrated form should not be heated unnecessarily, as heating could release fumes of the amine, which could be an inhalation irritant. See the material safety data sheet. The oils made with FUNCTIONAL DP-400 are not hazardous and may be handled with the usual precautions for similar oils.



Nonfood Compounds  
Program Listed  
Category Codes: HX-1 and HX-2  
Registration No. 144633

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