

FUNCTIONAL DM-400

HX-1 and Ecolabel LuSC-listed Demulsifier for Lubricants

APPLICATION:

FUNCTIONAL DM-400 is a demulsifier for biobased lubricants. **FUNCTIONAL DM-400** provides excellent demulsibility as well as ferrous corrosion protection in mineral oils, and natural and synthetic esters based on medium to long chain fatty acids. **FUNCTIONAL DM-400** chemistry performs well in biobased hydraulic fluids, gear oils, circulating oils, and turbine oils.

FUNCTIONAL DM-400 does not contain low flash petroleum oils, polyol block copolymers, or alkoxyated alkyl phenol compounds.

COMPOSITION:

FUNCTIONAL DM-400 is a proprietary alkyl sulfonate in a hydrocarbon fluid.

Typical properties	
Appearance	Brown liquid
Odor	Mild
Density at 20°C	0.86
Pounds/Gal	7.2
Flash Point (ASTM D92, COC)	161°C / 322°F
Kinematic Viscosity at 40 °C (ASTM D445)	17 cSt

TREATMENT LEVEL:

0.2-1.0wt% **FUNCTIONAL DM-400** is typically sufficient to improve demulsibility. See next page for example cases.

HANDLING:

Store at room temperature. See the current Safety Data Sheet.

This Technical Data Sheet and the 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.

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FORMULATION GUIDE:

FUNCTIONAL DM-400 is recommended in all vegetable oils and any synthetic ester which uses medium to long chain fatty acids including mixtures with mineral oils.

ASTM D2711B Demulsibility Results before/after FUNCTIONAL DM-400 Treat

	ISO 46 Rock Drill Oil	ISO 150 Rock Drill Oil	ISO 320 Rock Drill Oil
Base Oil Type	Vegetable/ Gr. II Blend	Vegetable/ Gr. II Blend	Vegetable/ Gr. II Blend
Free Water/Emulsion Before	< 80 ml/>1	< 80 ml/>1	< 80 ml/>1
wt% FUNCTIONAL DM-400	0.2 wt%	0.4 wt%	0.4 wt%
Free Water/Emulsion After	85 ml/0 ml	87 ml/0 ml	88 ml/0 ml

ASTM D665B Turbine Oil rust test after FUNCTIONAL DM-400 Treat

ASTM D665B Turbine oil Rust	Pass	Pass	Pass
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When used in combination with **FUNCTIONAL DF-500** defoamer additive the following excellent D892 Sequence I foam test results* are obtained.

	ISO 46 Rock Drill Oil	ISO 150 Rock Drill Oil	ISO 320 Rock Drill Oil
Base Oil Type	Vegetable/ Gr. II Blend	Vegetable/ Gr. II Blend	Vegetable/ Gr. II Blend
ASTM D892 Foam Before	140/0	210/0	230/0
wt% FUNCTIONAL DF-500	0.2 wt%	0.2 wt%	0.2 wt%
ASTM D892 Foam After	0/0	0/0	0/0

* Denoted as "[mL of foam tendency after 5 min] / [mL of foam stability after 10 min]" @ 25°C

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