

FUNCTIONAL PRODUCTS INC.

A Solution Company

Technical Data Sheet

FUNCTIONAL V-4020

POLYMER FOR GREASES for Water Spray Off and Shear Stability

APPLICATION:

FUNCTIONAL V-4020 is rapidly dissolving pellet polymer, specifically designed for use in greases. The V-4020 interacts with the grease soap matrix and greatly boosts the soaps performance. Unlike pre-dissolved polymers, the absence of diluent oil permits formulating flexibility and does not alter customary manufacturing processes for grease. Greases made with **FUNCTIONAL V-4020** have better mechanical stability than those using polymers designed for applications like motor oil.

COMPOSITION:

FUNCTIONAL V-4020 is a copolymer based on ethylene and propylene. It is chemically different from motor oil V.I. improver polymers in its monomer content and polymer side branches.

Typical Properties	
Appearance	White rubber pellets
Specific Gravity	0.87
Thickening Efficiency (1.0% in ISO 32 paraffinic base oil)	9.5 - 12.5 cSt @ 100°C

TREATMENT LEVEL:

Typical treatment level of 0.25% is used in greases to confer water resistance and mechanical stability. See performance below:

	% Polymer	ASTM D4049	ASTM D217	ASTM D1831	ASTM D566
	Treat Level	Water Spray Off	60000 & 10000	Roll Stability %	Dropping Point
Base Grease	0.0	63%	7	6.1%	> 390 F
V-4020	0.25	21%	8	4.6%	> 385 F

HANDLING:

FUNCTIONAL V-4020 is added to the grease at the initial reaction stage. The base oil should be charged in the kettle at 65 C. Then the hydroxystearic acid and V-4020 should be combined and heated to 85 C and recirculated. The lithium hydroxide and water slurry should be added and held for 90 minutes. Heat to 205 C for 20 minutes. Turn off heat and slowly add cooling oil. Mill grease. It is resistant to caking and no particular precautions are needed in storage. When used in greases, **FUNCTIONAL V-4020** is non-hazardous material; see the current MSDS.

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.

Issued: 12/21/11

8282 Bavaria Rd. Macedonia, Ohio 44056
Ph: 330-963-3060 Fax: 330-963-3322
QMS certified to ISO 9001:2008 (with Design)

FUNCTIONAL PRODUCTS INC.

A Solution Company

Technical Data Sheet

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.

Issued: 12/21/11

8282 Bavaria Rd. Macedonia, Ohio 44056
Ph: 330-963-3060 Fax: 330-963-3322
QMS certified to ISO 9001:2008 (with Design)