

LITHIUM GREASE REFERENCE GUIDE



SUGGESTED STARTING LITHIUM GREASE FORMULATIONS (1800kg)

PROCEDURE:

- 1) **PRE-THICKENER ADDITION** - Add 800 kg of base oil to the manufacturing kettle followed by 180 kg (10%) of the thickener. Slightly more preformed thickener can be used in order to round out bag quantities. The grease consistency can be adjusted with the addition of base oil later in the process.
- 2) **MELTING** - Heat the kettle charge to approximately 200°C or until all of the preformed thickener has completely melted. This may require temperatures up to 215°C to ensure complete melting.
- 3) **QUENCHING** - When the thickener has completely melted, pump the remaining base oil (820 kg) into the grease vessel. Circulate the grease with continuous agitation. Rapid cooling at this point improves grease yield.
- 4) **COOLING** - Once the kettle contents are approximately 100°C, additional base oil can be added to adjust batch consistency to the appropriate NLGI Grade requirement. For a typical NLGI Grade 2 grease, between 8 and 9% thickener is required.
- 5) **ADDITIVE ADDITION** - At approx.. 50 °C (122°F), add other additives such as antioxidants, rust inhibitors, boundary and solid lubricants.
- 6) **FINISHING** - For best results, circulate the grease through a high-pressure homogenizer (4000-6000 psi). While milling is the typical method used currently to manufacture most of the greases today, the use of a high-pressure homogenizer is recommended for improved properties and performance.
- 7) **PACKAGE**

PREFORMED THICKENER RECOMMENDATIONS:

Base Oil	Preformed Thickener
Synthetic Ester Oil	8-10 % Lithium 12-Hydroxystearate
PAO (Poly Alpha Olefin)	8-10 % Lithium 12-Hydroxystearate
Aromatic Oil	10-12% of Calford® G-200
Naphthenic Oil	10-12% of Calford® G-200
Soy Oil	8-10 % Lithium 12-Hydroxystearate
For Grade 3 Grease use 12-14% pre-formed thickener	
For Grade 1 Grease use 5-7% pre-formed thickener	

DISCLAIMER

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