

## Greases

Elixir Synthetic Blend Calcium Sulfonate Grease - Blue Hi-Temp Grease - Pro Tac Plus Grease  
Multi-Purpose Lithium Grease - Heavy Duty Wheel Bearing Grease

(12/9/2011 edition)

**Amalie Elixir Synthetic Blend Calcium Sulfonate Grease** This new and improved multi-purpose heavy-duty and extreme pressure Elixir grease is not only green in color, it environmentally green, too. It is designed to be more environmentally friendly regarding the ground water and even more especially for the navigable waterways – it just doesn't leak out the way other greases do. It also protects vital equipment many times better than older greases – even the former Elixir and that in itself is green! Greater protection means longer equipment life which is good for the environment as well as the wallet. Outstanding protection for all types of bearings even under heavy loads at both high and low temperatures – especially where moisture and condensation are a problem. Amalie Elixir is new throughout. It is a high tech calcium sulfonate grease fortified with unique additives to provide superior rust and corrosion protection and to resist water washout. Amalie Elixir meets NLGI specification GC-LB (ASTM 4950) and is an excellent grease for lubricating vehicles and wheel bearings of all types: Construction, heavy loads, high speed/low speed, agricultural, commercial, construction, mining, logging and hauling industries, trailers, truck and passenger car, and especially the water sensitive wheel bearings on small, high-speed boat trailer wheels. Excellent for chassis, 5<sup>th</sup> wheel, ball joints, tie rod ends, and universal joints. Amalie Elixir is also recommended for heavy duty industrial applications such as lubricating electric motors, steel mill rollers, crusher bearings and most if not all low to high speed anti-friction bearings. It is the obvious choice for virtually any multi-purpose or extreme pressure application. It is engineered with a special gellation thickener to provide natural tackiness, adhesive and cohesive properties that prevent moisture and other corrosive elements from reaching critical parts.

Amalie Green Elixir is a heavy-duty extreme pressure grease exhibiting outstanding film strength and resistance to corrosive saltwater environments. With a Timken OK load of 65 lbs. Amalie Green Elixir is recommended for the most severe applications in off-highway construction and mining equipment. Exhibiting excellent water repellency, oxidation resistance and a wide operating temperature range, Amalie Green Elixir is also an obvious choice for virtually any multipurpose or extreme pressure application.

Amalie Green Elixir meets and exceeds the demanding automotive and industrial testing requirements of ASTM D 4950, earning it the GC-LB classification by the National Lubricating Grease Institute. Amalie Green Elixir is recommended for use in automotive as well as heavy duty applications in the construction, mining, agricultural, logging and hauling industries and anyplace where a shear stable, high load carrying corrosion resistant grease is required.

### Benefits:

- Wide Temperature Range – Amalie Green Elixir has a dropping point of over 570+ F, allowing it to perform across a wide temperature range.
- Adhesive and Cohesive – Amalie Green Elixir has a special gellation thickener providing natural tackiness and preventing moisture and other corrosive materials from reaching critical parts.
- High Load Carrying Capacity – Amalie Green Elixir is formulated with specialized additives, giving it a Timken OK load of 65 lbs. to prevent wear in the most demanding heavily loaded applications.

**Amalie Blue Hi-Temp Grease** is a premium, multipurpose automotive/truck chassis and bearing lithium complex lubricant meeting the NLGI GC/LB performance target. Applicable in a variety of automotive and industrial uses requiring extreme pressure protection, oxidation, inhibition, water resistance, and anti-rust properties, including; disc brakes, wheel bearings, chassis, ball-joints, 5<sup>th</sup> wheels and others. This popular grease is a lithium complex and is formulated with highly refined base oil and specialty additives to meet severe requirements of machinery. This grease is capable of operations from minus 40 degrees F to 350 degrees F, but with a dropping point of more than 500 F.

Key features are:

- Excellent mechanical stability – resists thinning or hardening in bearings, minimizing leakage and maintaining extended service life.
- Very good oxidation and corrosion protection – via specialty additives minimizes chemical deterioration over extended periods of storage and service. Protects steel and copper alloy bearings against rust and corrosion.
- Outstanding Extreme Pressure Protection – provides effective wear protection for ball joints, drive shafts and other parts subjected to high pressure and shock loading.
- Wide temperature Operation – offers excellent low temperature pumpability (-40 F) and high temperature (350 F) protection.
- Excellent Water Resistance – effectively resists washout and excessive dilution by water, assuring all-weather lubrication.

In general, recommended for extended service in heavy-duty automotive, truck, buses, farm tractors, construction equipment, high temp wheel bearings (disc brakes), roller and ball bearings, electric motor bearings, throw-out bearings, universal joints, chassis, fifth wheel and many others. This grease is suitable for medium size high speed bearings. It is robust multipurpose grease for a wide range of applications.

**Amalie Pro Tac Plus Grease with Moly** is a lithium complex grease fortified with molybdenum disulfide that meets Caterpillar's most stringent "moly" performance requirements. This robust grease prevents metal-on-metal contact under very high-shock loading conditions commonly found in agricultural and construction environments. Applicable in a variety of automotive and industrial uses requiring extreme pressure protection, oxidation inhibition, water resistance, and anti-rust properties, including; disc brakes, wheel bearings, chassis, ball-joints, 5<sup>th</sup> wheels and others. Amalie Pro Tac Plus Grease is formulated with advanced chemistry to satisfy the stringent performance needs of heavy-duty equipment builders such as Caterpillar, Detroit Diesel/MTU, Kubota, and others.

**Amalie Multi-Purpose Lithium Grease** is a lithium thickened automotive and industrial grease possessing good extreme pressure, anti-wear properties, and strong anti-rust characteristics. Amalie Multi-Purpose Lithium Grease is recommended for cars, light trucks, SUV's, motorcycles and light trailers equipped with conventional brakes, or industrial application where an NLGI #2 is requisite.

Amalie MP Lithium Grease is a red colored, premium quality lithium base grease developed specifically for multipurpose automotive lubrication.

Amalie MP Lithium Grease has the following physical and performance properties:

- Fully refined lube stocks and high quality lithium soap are used in compounding. Additive treatment further enhances its lubricating effectiveness.
- It has excellent temperature stability, will not melt at automotive service temperatures and is readily handled through normal dispensing equipment.

- A high level of oxidation and corrosion resistance protects bearing parts made with steel and copper alloys.
- Superior water resistance effectively resists washout in all-weather service.

Amalie MP Lithium Grease is recommended for the grease lubrication of water pumps, universal joints and regularly lubricated chassis points on passenger cars, trucks, buses, farm tractors, and mobile construction equipments. This product is also used for general industrial and farm lubrication where a lithium grease is specified.

**Amalie Heavy Duty Wheel Bearing Grease** is highly fibrous sodium grease formulated to provide excellent lubrication properties for open, heavy-duty bearings. Amalie Heavy Duty Wheel Bearing Grease imparts excellent resistance to displacement under high loads or centrifugal action. Not recommended for disc brakes.

*Some performance levels are limited by viscosity grades. Please consult the Amalie Performance Application Chart, the Amalie Inspection Data Table for the appropriate Amalie product or contact your Amalie District Manager for more complete information and recommendations.*

# TYPICAL INSPECTION DATA

Amalie Greases	Elixir Synthetic Blend Grease	Blue Hi-Temp Grease	Pro Tac Plus Grease with Moly	Multi-Purpose Lithium Grease	Heavy Duty Wheel Bearing Grease
Color	Green	Blue	Gray	Maroon	Yellow
Texture	Smooth	Smooth,Tacky	Smooth,Tacky	Smooth	Heavy Fibrous
NLGI Grade	2	2	2	2	3.5
Thickener Type	Calcium Sulfonate	Lithium Complex	Lithium Complex	Lithium Stearate	Sodium
Solid Lubricant	None	None	5%	None	None
Dropping Point °C /°F	300/570	288/550	288/550	177/350	177/350
Timken OK Load Lbs. D-2509	65	65	50	40	35
Four Ball Weld Scar, mm D-2266	0.50	0.50	0.40	-	-
Four-Ball WeldPoint,kgf D-2596	620	315	500	-	-
Four-Ball Load Wear Index	65	50	64	-	-
Rust Corrosion Test, D-1743	Pass	Pass	Pass	Pass	Pass
Emcor Rust, IP220-mod,Distilled Water	0,0	0,0	0,0	0,0	0,0
Worked 60 Penetration, D-217	265-295	265-295	265-295	265-295	180-220
Penetration Consistency Change, Roll Stability, D-1831, mm/10	+/- 10 % max	+/- 10 %max	+/- 10 %max	-	-
Wheel Bearing Leakage, D-4290, g loss	2.0	2.0	2.0	-	-
Oxidation Stability D-942, Pressure drop at 100 hrs, PSI	5 max	5 max	5 max	-	-
Copper Strip Corrosion, D-4048	1b Max	1b Max	1b Max	1b Max	-
Oil Separation, D-1742, % loss	1	1	3 Max	-	-
Water Spray Resistance, D-4049, % Spray-off	12	12	10	-	-
Water Washout, D-1264, wt% loss at 79°C(175°F).	2.0	2.0	2.0	-	-
Characteristics Oil plus Oil Soluble Additives Viscosities D-445: @ 100C, cSt. @40C, cSt. Viscosity Index	12.5 118 97	29.5 546 77	12.6 162 56	11.9 152 51	25.0 367 89
Reference Formula	(951GL)	(919BA)	(919MA)	(903RA)	(936AP)

## PERFORMANCE APPLICATION CHART

Applications	Elixir Synthetic Blend Grease	Blue Hi-Temp Grease	Pro Tac Plus Grease	Multi-purpose Lithium Grease	Heavy Duty Wheel Bearing Grease
CV joints	P	A	P	NR	NR
Chassis (auto)	A	P	A	A	NR
Chassis (truck)	A	A	P	A	NR
Conveyor Belts	A	A	P	NR	NR
Drum and Shoe Bearing	P	P	A	A	A
EP (extreme pressure)	A	A	P	NR	NR
Extreme Temperature	P	A	P	NR	NR
5 <sup>TH</sup> Wheel	P	A	P	A	A
General Purpose	P	P	P	A	A
High Impact Environment	A	A	P	NR	NR
High Water Environment	P	A	P	NR	NR
Off-Road SUV/Utility	P	P	P	NR	NR
Off-Road Heavy Duty	A	A	P	NR	NR
Outboard/Marine	P	A	P	NR	NR
Table & RockNeck Bearings	A	A	P	NR	NR
Trunion Bearings	P	A	A	NR	NR
Wheel Bearing (auto/truck)	P	P	P	NR	NR