

BioGrease HD

Biodegradable Heavy Duty Grease

Overview: BioGrease HD is a readily biodegradable, non-toxic Lithium 12-OH Stearate grease designed to provide high film strength, withstand high operating temperatures, maintain excellent stability, and extended lubricant life. BioGrease HD features a high viscosity base oil for high load carrying capabilities and anti-wear characteristics along with low water washout properties. It is designed for heavy-duty use in a variety of industrial, mobile, and marine applications. Available in NLGI grades 1 and 2.

Specifications, Approvals, Recommendations:

- USDA BioPreferred Program
- Classified as Environmentally Acceptable Lubricants (EAL's) as per the EPA's 2013 U.S. Vessel General Permit (VGP)

Physical Properties	HD #1	HD #2
NLGI Grade	1	2
Penetration, ASTM D217	310-340	265-295
Color	Amber	Amber
Texture	Smooth	Smooth
Viscosity, ASTM D445 @40°C, cSt @100°C, cSt	220 45.6	220 45.6
Flash Point, ASTM D92, °F (°C)	520 (271)	520 (271)
Fire Point, ASTM D92, °F (°C)	550 (287)	550 (287)
4 Ball EP Weld Load, ASTM D2596, kg	315	315
4 Ball Wear, ASTM D2266, mm	.50	.50
Copper Corrosion, ASTM D4048	1A	1A
Dropping Point, ASTM D2265, °F (°C)	>350 (176)	>350 (176)
Water Washout, ASTM D1264, % loss max	6%	6%
Rust Test, ASTM D1743, A & B	PASS	PASS
Timken OK Load, ASTM D2509, lbs	55	55
Environmental Stewardship: Meets EPA requirements to be classified as an EAL per the 2013 VGP		
Readily Biodegradable (meaning >60%) OECD 301B, %	PASS 75	PASS 75
Minimally Toxic OECD 201 - Algae (EC 50), 72 hr, mg/L OECD 202 - Daphnia (EC 50), 48 hr, mg/L OECD 203 - Fish (LC 50), 96 hr, mg/L	PASS 26,586 mg/L 13,397 mg/L 40,000 mg/L	PASS 26,586 mg/L 13,397 mg/L 40,000 mg/L
Not Bioaccumulative* (*Calculated value as per EPA standard)	PASS	PASS
Additional Environmental Features and Characteristics		
Bio-based Content, ASTM D6866, %	90	90

Applications & Industries: Any industry (hydroelectric powered dams, construction, refuse, mining, dredging, marine, agriculture, oil & gas, plant operations, etc.) utilizing equipment with a need for a heavy duty grease, especially systems where a release into the environment is possible or where a leak or spill could reach a waste stream. Suitable for use in automatic lubrication systems or via manual application.



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BioBlend has been in the business of making high performance biodegradable lubricants and greases since 2001. That's been our primary focus all along. We started out blending vegetable oil base stocks and have expanded into synthetic esters which offer additional performance benefits without sacrificing favorable biodegradability and minimal toxicity characteristics. By offering a full range of technology solutions in a range of price points, we can satisfy virtually every industrial need. Technology continues to evolve in base oils as well as the complex additives that go into our lubricants. Greater performance specifications, increased renewability, enhanced sustainability and decreasing costs have been our goals throughout history and continue to be primary goals:

- BioBlend technologies do NOT biodegrade in service nor result in an in-service performance sacrifice. It takes soil and/or water microbes and heat to launch the biodegradation process ... just like it does with inherently biodegradable conventional petroleum and synthetic products ... we simply offer enhanced environmental stewardship and a significantly reduced environmental impact.
- Conversion to BioBlend technologies is routine and does NOT require any unconventional system preparation or change-out procedures.
- BioBlend technologies do NOT have an adverse effect or impact on conventional seals, seal materials, or hoses.



Our customers lead us into new markets every year. The advent of natural gas exploration using horizontal drilling led us to create a suite of products for that industry. The need for reliable and efficient petroleum-free hydraulic elevator operation led us to create a suite of products for that industry. As our customers called for a technology package of NSF H1 certified food grade lubricant technologies that are also readily biodegradable, we obliged and created a suite of products for that as well.

Total Cost of Ownership (TCO): Business success is all about TCO. This takes smart people making smart business decisions every time, including lubricant selection. TCO clearly outlines the driving forces behind every lubricant decision:



- **Cost** ... BioBlend is cost competitive, but the cost per gallon of the lubricant is only one component of TCO.
- **Product Reliability & Performance** ... We get it, we deliver, and we do so globally.
- **Risk Mitigation** ... In the event of a release, the fines associated with the spill and the cost to remediate can be substantially reduced using BioBlend.
- **Brand Impact** ... In the event of a release, a potential negative event can be turned into a positive event.
- **Sustainability** ... Using BioBlend aligns well with many corporate sustainability objectives.

Features	User Benefits vs. Petroleum
High Viscosity Index	2x advantage; Greater viscometric stability across a wider band of operating temps
Increased Natural Lubricity	Reduced heat, friction, and wear ; extended equipment life
Powerful Natural Metal Polarity	Oil stays in place; improves lubrication with 'metal wetting' to aid in corrosion resistance
Very High Flash Points	A higher margin for operational and human safety
Superior Cleansing Ability	Keeps metal surfaces clean, enhances heat exchange, and maintains lowest system temp
High Dielectric Strength	Increased human safety in the event of contact with electrical sources
Compatible/Miscible	Simplified drain/flush/fill procedures
Excellent Seal, Seal Material & Hose Compatibility	No change of seals, seal materials or hoses required
Renewable Resource	We can grow more
Economical	Total cost of ownership is favorable
Readily Biodegradable	Suitable for use in most systems, especially environmentally-sensitive operations
Minimally Toxic	Increased environmental safety
Not Bioaccumulative	Will not accumulate in micro-organisms nor in species along the food chain

*BioBlend continues to invest in our people and our technologies to bring you the most advanced products in the industry.
Please visit the BioBlend website for additional insights.*

