

# Product Information



## Almamoly® HD Grease (1489-1487)

### ***Solid Lubricant Grease with Calcium Sulfonate Complex Thickener Provides Lasting Protection for Heavy Mobile Equipment***

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Lubrication Engineers, Inc. formulated its solid lubricant-containing, calcium sulfonate-thickened Almamoly® HD Grease for use in severe conditions such as high temperatures, heavy loads and water. This high-performance grease is intended for long-lasting use in heavy-duty mobile equipment such as that used in construction, agriculture, open pit mining and road-building. It is available in three grades – NLGI 2, 1 and 0 – to meet the needs of a variety of applications. The 0 grade grease is recommended for use in centralized lubrication systems at low temperatures.



Almamoly HD Grease contains Almasol®, LE's proprietary solid additive as well as 5 percent molybdenum disulfide (also known as molydisulfide or moly). Compared to other solid lubricant-containing greases that rely on moly or graphite alone, Almamoly HD Grease's synergistic combination of moly and Almasol gives it better wear resistance. This unique combination of solids helps ensure reliable lubrication, staying in place even when the lubricant is squeezed out of the contact zone due to extreme pressure (EP) or heavy shock loading. The calcium sulfonate complex thickener provides additional performance features that make this grease desirable for a variety of extreme conditions.

### **Beneficial Qualities**

#### ***Solid additive combination***

- Contains proprietary combination of Almasol and 5% moly
- Provides better wear-resistance than other greases containing solid lubricants, including those containing 5% moly alone
- Meets requirements of major OEMs

#### ***Calcium sulfonate complex thickener***

- Inherently prevents rust & corrosion, in contrast to other thickeners
- Has very high dropping point
- Exhibits excellent mechanical stability
- Imparts outstanding EP properties, providing wear protection even when pound-out conditions occur

#### ***Reliable, long-lasting formula***

- Has very low oil separation
- Stays in place for extended lubrication intervals

#### **Available Grades**

- NLGI 2 (1489)
- NLGI 1 (1488)
- NLGI 0 (1487)



### **Proprietary Additives**

LE's proprietary additives are used exclusively in LE lubricants. Almamoly® HD Grease contains Almasol.

Almasol® solid wear-reducing additive is able to withstand extremely heavy loads, chemical attack and temperatures up to 1,900°F (1,038°C). It is attracted to metal surfaces, forming a microscopic layer but not building on itself or affecting clearances. Almasol minimizes metal-to-metal contact and the resulting friction, heat and wear.



**Asset Reliability Solutions®**

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## Almamoly® HD Grease

	<u>1489</u>	<u>1488</u>	<u>1487</u>
<b>Thickener Type</b>	Calcium Sulfonate Complex	Calcium Sulfonate Complex	Calcium Sulfonate Complex
<b>Texture</b>	Smooth	Smooth	Smooth
<b>Color</b>	Gray	Gray	Gray
<b>NLGI Grade</b>	2	1	0
<b>Worked 60 Penetration ASTM D217</b>	280	329	368
<b>Worked 10K Penetration ASTM D217</b>	282	327	372
<b>Worked 100K Penetration ASTM D217</b>	285	331	371
<b>Dropping Point °C (°F), ASTM D2265</b>	316 (600)	316 (600)	316 (600)
<b>Base Fluid Characteristics</b>			
<b>Flash Point °C (°F), ASTM D92</b>	260 (500)	260 (500)	260 (500)
<b>Viscosity @ 100°C, cSt, ASTM D445</b>	14.39	14.39	14.39
<b>Viscosity @ 40°C, cSt, ASTM D445</b>	143.5	143.5	143.5
<b>Viscosity Index ASTM D2270</b>	98	98	98
<b>Oxidation drop in psi @ 100 hrs, ASTM D942</b>	5	5	5
<b>Oxidation drop in psi @ 500 hrs, ASTM D942</b>	10	10	10
<b>Corrosion Prevention DI H<sub>2</sub>O, ASTM D1743</b>	Pass	Pass	Pass
<b>Oil Separation 30 hrs @ 100°C, % bleed, ASTM D6184</b>	1.00	1.00	1.00
<b>Timken OK Load lbs, ASTM D2509</b>	60	60	60
<b>Four-Ball EP Weld Point kgf, ASTM D2596</b>	620	620	620
<b>Four-Ball EP Load Wear Index kgf, ASTM D2596</b>	102.2	102.2	102.2
<b>Four-Ball Wear @ 75°C, 1,200 rpm, 40 kgf, 60 minutes, mm wear, ASTM D2266</b>	0.45	0.45	0.45
<b>Copper Corrosion 24 hrs @ 100°C, ASTM D4048</b>	1b	1b	1b
<b>Evaporation 22 hrs @ 100°C, % loss, ASTM D972</b>	0.75	0.75	0.75

### Performance Requirements Met or Exceeded

- Can be used for equipment that requires or specifies greases containing solid lubricants
- Can be used for heavy-duty mobile equipment requiring 5% moly grease, including Caterpillar®, Hyundai®, John Deere® and Komatsu®

### Recommendations

- Can be used with single- or multi-point automatic lubrication systems
- 1487 is good for use in centralized lube systems at temps lower than 15°F (-9.4°C)

### Typical Applications

- Large mobile equipment used for agriculture, construction, open pit mining and road-building, including articulated trucks, backhoes, bulldozers, conveyors, crushers, excavators, loaders and shovels.
- Swiveling and pivoting parts including articulated joints, bucket pins, sleeve bearings, pivot bearings, hinge pins, latches, locks, spindles, threaded parts, cams, and slides.
- Other applications such as continuous casters, motor-operated steam valves, and underwater applications.



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