

# Shell Malleus Grease GL

## *Superior Performance Open Gear Grease*

Shell Malleus GL is a range of a premium quality, lead and solvent free, full EP lubricants developed for the lubrication and protection of open gears and wire ropes subjected to extremes of ambient temperature and operating conditions.

They are a unique blend of high quality paraffinic mineral and synthetic base oils with carefully selected additives to provide optimum performance. Its balanced formulation allows the lubricant to stay soft and pliable over long periods, thus eliminating the build-up of lubricant in the roots of the gear teeth.

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### Applications

- Heavily loaded open gears, particularly those found in grinding mills, kilns, shovels, draglines, ship loaders, stackers and reclaimers and excavator applications. When choosing a product to suit your ambient temperature conditions, always consult with your Shell representative for the appropriate grade
- Multi service lubricant that can be used as the one grease (multi purpose and open gear) for the entire machine on most shovels, excavators and draglines (excluding electrical motors bearings)
- Surface dressing of slow moving gears open to the atmosphere
- Plain bearings, pivot pins/bushings & articulations found in earth moving equipment
- Mooring, static and slow moving wire ropes including those intermittently immersed in salt water
- Wide variety of heavy-duty mining and industrial applications

### Performance Features

- ***Exceptional physical and mechanical stability***  
Shell Malleus GL retains its natural protective properties over its long working life
- ***Excellent anti-wear performance***  
At working temperatures, speeds and pressures, Shell Malleus GL forms a protective cushion between the large gear (girth, bull etc) and pinion teeth
- ***Superb load carrying capacity***  
Molybdenum disulphide and other solid lubricants combine to reduce tooth contact zone temperatures, reduce gear surface pitting and alleviate 'stick-slip' conditions
- ***Water repellent***  
Effectively resists water 'wash-off' by immersion or spray
- ***Corrosion protection***  
Protects metal surfaces from corrosion in hostile environments such as salt-water conditions. Repels dirt and dust
- ***Environmental compliance***  
Lead and solvent haven't been added intentionally to Shell Malleus GL

## Approvals and Recommendations

Shell Malleus GLs have been approved by following OEMs :

FLSmith (Malleus GL 500, 400, 205)  
 Norberg (Malleus GL 400)  
 Ferry Capitain (Malleus GL 500, 400, 205)  
 Falk (Malleus GL 400)  
 Lincoln (All Malleus GL)

## Typical Physical Characteristics

Shell Malleus		GL 25	GL 65	GL 95	GL 205	GL 300	GL 400	GL 500
<b>Base Oil Kinematic Viscosity</b> at 100°C mm <sup>2</sup> /s	ISO 3016	15.3	20.4	37.4	46.3	70.3	83.5	83.5
<b>Base Oil Kinematic Viscosity</b> at 40°C mm <sup>2</sup> /s	ISO 3016	81.8	88.0	655	870	1140	1625	1625
<b>Density</b> at 15°C kg/m <sup>3</sup>	ISO 12185	0.993	1.000	1.000	1.009	0.986	1.018	1.070
<b>Flash Point COC</b> °C	ISO 2592	min 130	min 130	min 130	min 130	min 130	min 130	min 130
<b>Four Ball Extreme Pressure Test</b> Weld Load N	ASTM D 2596	min 5000	min 5000	min 6200	min 6200	min 6200	min 6200	min 6200
<b>Four Ball Extreme Pressure Test</b> Scar diameter mm	ASTM D 2266	max 0.8	max 0.8	max 0.8	max 0.8	max 0.8	max 0.8	max 0.8
<b>Timken OK Load</b> (without solids) lbs	ASTM D 2509	min 45	min 45	min 45	min 45	min 45	min 45	min 45
<b>Falex Continuous Load</b> Failure N	ASTM D 3233	min 20450	min 20450	min 20450	min 20450	min 20450	min 20450	min 20450

These characteristics are typical of current production. Whilst future production will conform to Shell's specification variations in these characteristics may occur.

### Periodic smooth lapping of tooth profile

It is considered to be a good maintenance practice to apply a 180 kg drum of Malleus RN once per year, or every 6000 hrs of operation. Why: to reduce high spots, damage on the gear tooth surface that may or may not be visible to the naked eye, which could cause long term future irreversible damage. Some possible causes of this type of damage: ingress of contamination, misalignment, fatigue, lack of lubrication from a faulty lubrication systems.

**Dispensing**

Shell Malleus GL may be applied manually or by conventional centralised automatic lubrication systems.

**Health & Safety**

Shell Malleus GL is unlikely to present any significant health or safety hazard when properly used in the recommended application, and good standards of industrial and personal hygiene are maintained.

For further guidance on Product Health & Safety refer to the appropriate Shell Product Safety Data Sheet.

**Advice**

Advice on applications not covered in this leaflet may be obtained from your Shell Representative