



# Shell Omala Oils

## Premium quality industrial gear oils

Shell Omala Oils are premium quality, extreme-pressure oils designed, primarily, for the lubrication of heavy duty industrial gears. Their high load carrying capacity and anti-friction characteristics combine to provide superior performance in gears and other industrial applications.

Shell Omala Oils are formulated using high viscosity index, solvent refined, base oils and incorporate a specially selected sulphur-phosphorus additive to provide an extreme pressure performance significantly better than that provided by leaded gear oils.

### Applications

- Steel gear transmissions
- Lower temperature steel/phosphor bronze contacts
- Lower temperature industrial gear drives including worm gears
- Bearings
- Circulating and splash lubricated systems
- Oil mist applications

Shell Omala Oils should not be used for automotive hypoid gears. The appropriate Shell Spirax Oil should be used for this purpose.

### Performance Features

- Excellent load carrying and anti-friction characteristics  
Reduces gear tooth and bearing wear on both steel and bronze components
- Outstanding oxidation and thermal stability  
Withstands high thermal loading and resists the formation of sludge and other harmful products of oxidation. Extended oil life, even with bulk oil temperatures up to 100°C in certain applications
- Effective corrosion inhibition  
Protects both steel and bronze components, even in the presence of contamination by water and solids
- Lead-free  
Operator acceptability. Reduced health risk
- Wide range of viscosities  
Caters for the most varied and arduous industrial applications

- Water shedding properties  
Shell Omala Oils have excellent water separation properties. Excess water can be drained easily from lubrication systems. (Water can greatly accelerate surface fatigue on gear and bearing interfaces and promote ferrous corrosion on all internal surfaces. Water contamination should be avoided or removed as quickly as possible after the occurrence.)

### Load Carrying Capacity

The load carrying capacity of Shell Omala Oils, as determined in laboratory tests, is significantly better than that of leaded gear oils. Gear tooth wear is reduced, particularly under conditions of high load. Typical test results for Shell Omala Oil 220 are:

<b>Extreme Pressure Properties</b>	
Timken Wear & Lubricant Testing Machine	
OK Load lbs (IP 240/ASTM-D2782)	60
<b>Four Ball Extreme Pressure Test</b>	
Initial seizure load kg (IP 239/79)	250
<b>Four Ball Wear Test</b>	
Weld Load Kg (IP 239)	270
<b>Load Carrying Capacity</b>	
FZG Gear Machine A/8.3/90 Pass stage (IP 334)	>12



## Heater Capacity

Where it is necessary to raise the bulk oil temperature, the heater rating should not exceed 11.5 KJ/m<sup>2</sup> (7.5 W/in<sup>2</sup>).

## Change-over Procedure

The following procedures and precautions are recommended when changing from lead-containing oils.

As a general principle, oil that has been in use for some time should be renewed completely. For complete benefit, Shell Omala Oils should not be mixed with other oils.

### a) Gearboxes

Drain the gearbox completely and inspect internally. Remove sludge deposits manually. Flush the gearbox with new oil. Drain and refill with the appropriate viscosity Shell Omala Oil.

(If a gearbox is known to be sludge-free the normal top-up procedure, in which the new oil is mixed with the original leaded oil, should be satisfactory.)

### b) Gear systems

Drain off all the old oil. The minimum amount of Shell Omala Oil necessary to maintain circulation should be pumped around the system, for as long as practicable, to flush out all pipework and inaccessible points. Use warm oil if possible. Discard the flushing charge and, provided a careful inspection shows the lubrication system, including filters, drains and sumps to be free of contamination, refill with the appropriate viscosity Shell Omala Oil. If the examination is not satisfactory, repeat the procedure.

For newer charges of the leaded gear oil, an inspection as detailed should be carried out. If the system is found to be reasonably clean, change-over by topping up the existing oil with Shell Omala Oil may be carried out observing the following safeguards:

1. Make top up by adding frequent small quantities, rather than occasional large charges.
2. Inspect the system regularly for an initial period of three months, particularly with regard to the cleanliness of filters. The inspection frequency may be extended gradually to normal manufacturers' recommended periods as long as conditions are satisfactory.

## Health & Safety

Shell Omala Oils are 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. This can be obtained from your own internal Health & Safety focal point. In the event of any queries contact your local Shell Business Development Manager or:

### Normal Office Hours

Shell UK Oil Products Ltd  
Delta House  
Wavell Road  
Wythenshawe  
Manchester M22 5SB  
Tel: 0161 499 4000

### Emergencies

Shell UK Oil Products Ltd  
Shell Centre  
London  
SE1 7NA  
Tel: 020 7934 1234

## Advice

Advice on applications not covered in this leaflet may be obtained from your Shell Business Development Manager.

## Typical Physical Characteristics

Shell Omala	68	100	150	220	320	460	680	800	1000
<b>Viscosity Grade</b> (ISO 3448)	68	100	150	220	320	460	680	800	1000
<b>Kinematic Viscosity</b> @ 40 °C cSt	68	100	150	220	320	460	680	800	1000
100 °C cSt (IP 71)	8.7	11.4	15.0	19.4	25.0	31.8	34.0	39.6	41.2
<b>Viscosity Index</b> (IP 226)	95	95	95	95	95	95	95	85	72
<b>Density @ 15 °C</b>	kg/l								



(IP 365)	0.876	0.878	0.884	0.889	0.893	0.897	0.913	0.927	0.939
<b>Flash Point °C</b>									
(Pensky-Martens Closed (IP 34)	193	195	198	204	210	216	220	232	260
<b>Pour Point °C</b>									
(IP 15)	-12	-9	-9	-9	-9	-9	-6	-6	-6

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