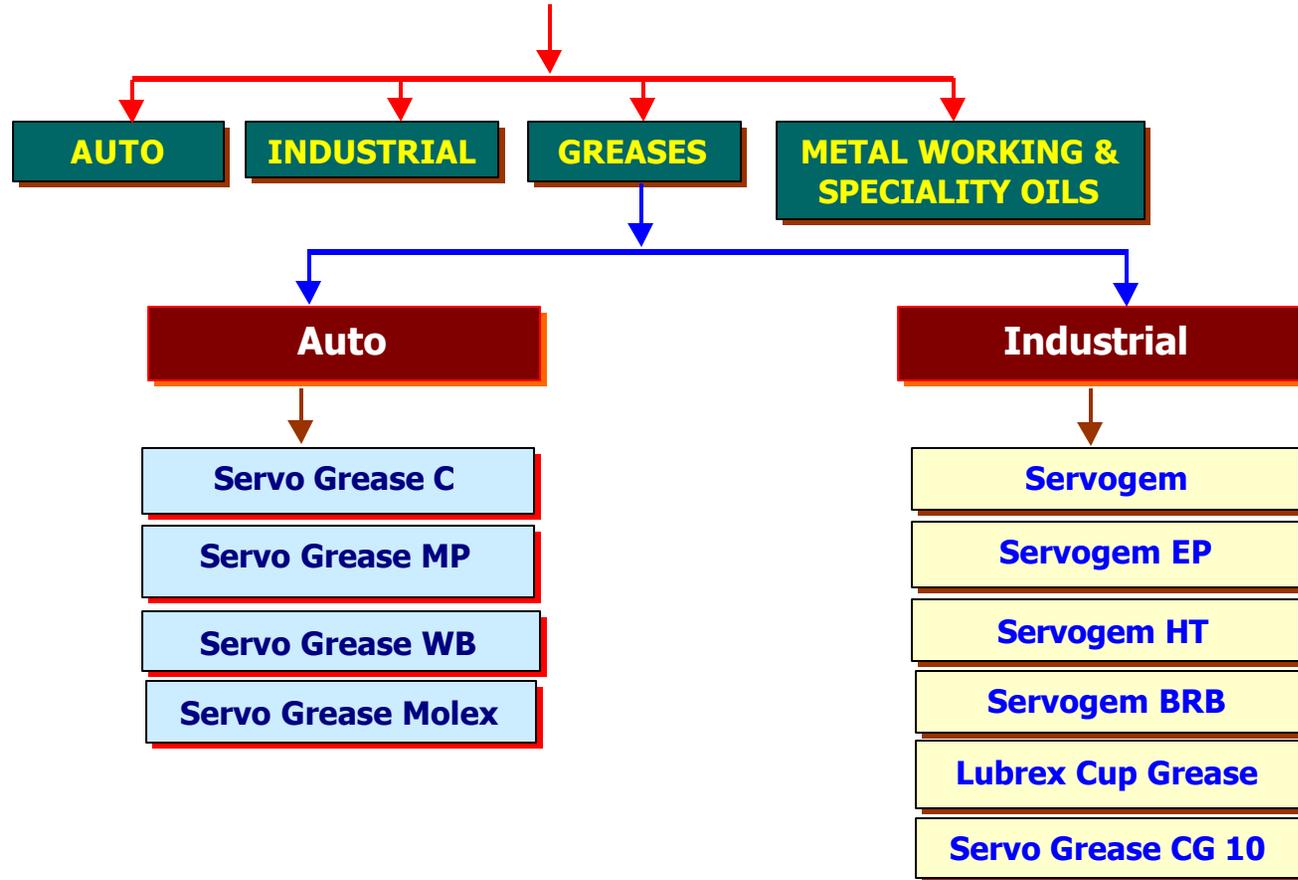


# **SERVO**® PRODUCT DATA SHEET

IndianOil



# SERVVO<sup>®</sup> PRODUCT DATA SHEET

## SERVVO GREASE C

IndianOil

GRADES AVAILABLE – SERVVOGREASE C

### DESCRIPTION

Servo Grease C is premium quality calcium base grease, specially developed for the lubrication of automotive chassis parts. It possesses strong affinity for metal surfaces with extremely good stay-put properties and adequate water resistance. As a result, the applied lubricant film is not displaced even under repeated shock-loads and vibrations.

### APPLICATION

Servo Grease C has adequate consistency to serve as an effective heavy duty chassis grease, with high load carrying ability. It is suitable for all chassis parts including suspension and steering system of automobiles. This grease can also be recommended for open and semi enclosed gearings and chain drives of farm equipment.

### PERFORMANCE BENEFITS

- Provides excellent resistance to water wash and displacement under shock-loads.
- Ensures protection against wear by preventing metal to metal contact.
- Has equally good dispensing qualities in summer and winter
- Provides protective coating to exposed parts of equipment, during temporary storage.

### PERFORMANCE STANDARDS

Servo Grease C is approved by the leading manufacturers, such as :

- Bajaj Tempo Ltd., Pune
- Hindustan Machine Tools Ltd, (Tractor Division), Pinjore
- Hindustan Motors Ltd., Calcutta
- Kirloskar Pneumatic Co. Ltd., Pune
- Larsen & Toubro Ltd., Bombay
- Premier Automobiles Ltd., Mumbai

### CHARACTERISTICS

<b>Colour</b>	Brown to Dark Brown
<b>Structure</b>	Smooth
<b>Soap Type</b>	Calcium
<b>Worked Penetration, @25°C, (60 Strokes)</b>	310-340
<b>Drop Point, °C Min.</b>	90

### HEALTH & SAFETY

These 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 information please contact our nearest office OR:

Technical Services Dept., Indian Oil Corporation Ltd., G-9, Ali Yavar Jung Marg, Bandra (East), Mumbai – 400 051

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# SERVO<sup>®</sup> PRODUCT DATA SHEET

## SERVO GREASE MP

Indian Oil

### GRADES AVAILABLE – SERVOGREASE MP, MP 3

DESCRIPTION	APPLICATION
Servo Grease MP is a premium quality lithium soap, multi-purpose automotive grease, with high drop point, good thermal and structural stability and also having resistance against water wash out. With its smooth structure and high degree of resistance against oxidation and rusting/corrosion it is an ideal product for all grease lubricated parts of automotive equipment.	Servo Grease MP is recommended for water pump, wheel bearings, chassis fittings and universal joints, including those of constant velocity type, for mobile equipment e.g., automotive, off- highway equipment such as tractors, construction equipment etc.

PERFORMANCE BENEFITS	PERFORMANCE STANDARDS
<ul style="list-style-type: none"><li>• Provides excellent resistance to structural and consistency changes, over wide range of temperatures but remains in place despite severe working or sustained shock impact</li><li>• Has excellent low and high temperature properties. It can be dispensed at low temperatures and will maintain adequate stay-put property at the higher temperatures encountered in service</li><li>• Resists effectively, water wash out in use, assuring adequate lubrication over extended service periods</li><li>• Provides resistance to oxidation, rust and corrosion</li></ul>	<p><b>MANUFACTURER'S APPROVAL</b></p> <p>Servo Grease MP meets IS:12203:1987 (Reaffirmed 1993)</p> <p>Servo Grease MP is approved by the leading manufacturers, such as :</p> <ul style="list-style-type: none"><li>• Ashok Leyland Ltd., Madras</li><li>• Bharat Earth Movers Ltd., Bangalore</li><li>• Escorts Ltd. (Tractor Division), Faridabad</li><li>• Hindustan Machine Tools, (Tractor Division), Pinjore</li><li>• Premier Automobiles Ltd., Mumbai</li></ul>

### CHARACTERISTICS

GRADE	Grease MP	Grease MP 3
<b>Colour</b>	Brown	Brown
<b>Structure</b>	Smooth	Smooth
<b>Soap Type</b>	Lithium	Lithium
<b>Worked Penetration, @25°C, (60 Strokes)</b>	270-310	220-250
<b>Drop Point, °C Min.</b>	180	180

### HEALTH & SAFETY

These 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.

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# SERVO<sup>®</sup> PRODUCT DATA SHEET

## SERVO GREASE WB

IndianOil

### GRADES AVAILABLE – SERVO GREASE WB

#### DESCRIPTION

Servo Grease WB is a premium quality, sodium soap grease with short fibres and good structural stability.

This grease is specially formulated to give long service life to anti-friction bearings of light and heavy vehicles

#### APPLICATION

Servo Grease WB is recommended for trouble-free lubrication and protection of wheel bearings and various other automotive components which do not get exposed to moisture. Servo grease WB being soda soap grease, is susceptible to water wash out and hence not suitable for water pump bearing lubrication.

#### PERFORMANCE BENEFITS

- Maintains structural stability in wheel bearing application, even under the most strenuous operation of the automotive vehicles
- Withstands effectively, excessive churning and provides trouble-free long service
- Possesses appropriate pumpability for easy application by grease guns and other manual or power operated dispensing equipment
- Ensures excellent protection to the lubricated parts

#### PERFORMANCE STANDARDS

Servo Grease WB meets IS:10647:1983 (Reaffirmed 1993).

#### MANUFACTURERS APPROVAL

- Servo Grease WB is approved by -
- Hindustan Motors Ltd., Calcutta
  - Hindustan Machine Tools Ltd., (Tractor Division), Pinjore
  - Premier Automobiles Ltd., Mumbai
  - Tata Engineering & Locomotive Co. Ltd., Pune
  - Revathi CP Equipments Ltd., Coimbatore

### CHARACTERISTICS

Colour	Greenish Brown
Structure	Short fibre
Soap Type	Sodium
Base Oil, Kinematic Viscosity, cSt @ 100°C	15 – 20
Worked Penetration, @ 25°C, (60 Strokes)	250-280
Drop Point, °C Min.	170

### HEALTH & SAFETY

These 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.

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# SERVO<sup>®</sup> PRODUCT DATA SHEET

## SERVO GREASE MOLEX

IndianOil

### GRADES AVAILABLE – SERVO GREASE MOLEX

#### DESCRIPTION

Servo Grease Molex is superior multi-purpose lithium base grease, compounded with finely dispersed molybdenum di-sulphide. The MoS2 being a very effective solid lubricant with extremely good anti-scuffing property gives additional protection to the moving parts even under very severe shock load conditions when the grease components may get squeezed out.

#### APPLICATION

Servo Grease Molex is recommended for chassis fittings, wheel bearings, grease cups, grease lubricated universal joints and other lubrication points in passenger cars, trucks, buses, farm tractors, mobile construction equipment as well as other earth-moving machinery.

This grease has been found suitable for industrial application where lithium base grease with molybdenum is required.

#### PERFORMANCE BENEFITS

- ☞ Resists thinning out even under excessive working in bearings, thereby ensuring minimum leakage and extended service life.
- ☞ Resists effectively, water wash out in use.
- ☞ Has minimum chemical deterioration over extended periods in storage and service.
- ☞ Provides excellent low and high temperature properties. It can be dispensed at low temperatures and maintains adequate stay put property at the higher temperature.
- ☞ Provides solid film lubrication, thus reduces friction between sliding surfaces, resulting in optimum service life of the moving parts.

#### PERFORMANCE STANDARDS

Servo Grease Molex meets IS : 12203:1987 (Reaffirmed 1993)

#### MANUFACTURER'S APPROVAL

Servo Grease Molex is approved by the leading manufacturers, such as:

- ☞ Bharat Earth Movers Ltd., Bangalore
- ☞ Bharat Heavy Electricals Ltd., Hyderabad

### CHARACTERISTICS

<b>Colour</b>	Greyish Black
<b>Structure</b>	Smooth
<b>Soap Type</b>	Lithium
<b>Worked Penetration, @ 25 °C, (60 Strokes)</b>	265-295
<b>Drop Point, °C Min.</b>	180

### HEALTH & SAFETY

These 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.

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# SERVO<sup>®</sup> PRODUCT DATA SHEET

## SERVOGEM

IndianOil

### GRADES AVAILABLE – SERVOGEM 2, 3

#### DESCRIPTION

Servogem greases are premium quality, lithium soap, multipurpose industrial greases. These greases possess excellent water resistance properties, high oxidation stability, maximum structure stability, high level of anti-rust and anti-corrosion properties. They give outstanding performance under varying operating conditions. These grades are suitable for lubrication under sub-zero (-25°C) to reasonably high (140°C) temperature conditions. Servogem 2 has excellent pumpability characteristic.

#### APPLICATION

Servogem greases are industrial products which enjoy all round acceptance for both anti-friction and plain bearing lubrication.

Servogem greases are widely used in steel plants, heavy engineering units, textile mills, fertilizer plants, heavy engineering units, textile mills, fertilizer plants, petrochemical/chemicals units, paper mills, jute mills, etc.

#### PERFORMANCE BENEFITS

- Servogem Greases
- ☞ has excellent high and low temperature properties. It can be dispensed at low temperatures and will maintain adequate stay put property at the higher temperatures.
  - ☞ resists effectively water washout in use.
  - ☞ Provides resistance to oxidation, rust and corrosion assuring adequate lubrication over extended service periods.

#### PERFORMANCE STANDARDS

- Servogem greases meet the following specification:
- British Timken ALG 1/57
  - IS: 7623-1993
  - IPSS:1-09-006
  - US Steel 374

#### MANUFACTURERS APPROVAL:

- Servogem greases are approved by the leading machinery manufacturers, such as:
- ACC Vickers-Babcock Ltd., Shahabad
  - Bharat Pumps & Compressors Ltd., Naini
  - National Engineering Industries Ltd., Jaipur

#### CHARACTERISTICS

NLGI GRADE	2	3
Colour	Light Brown	Light Brown
Structure	Smooth	Smooth
Soap Type	Lithium	Lithium
Worked Penetration @ 25°C, (60 Strokes)	265-295	220-250
Drop Point, °C Min.	180	180

#### HEALTH & SAFETY

These 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.

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# SERVVO<sup>®</sup> PRODUCT DATA SHEET

## SERVOGEM HT & HTXX

IndianOil

### GRADES AVAILABLE – SERVOGEM HT & HTXX

#### DESCRIPTION

Servogem HT & HTXX are non soap base greases. Servogem HT is brown in colour and Servogem HTXX is grayish black, due to the addition of chemically stable Molybdenum disulphide. The presence of MoS<sub>2</sub> in Servogem HTXX makes it particularly suitable for lubrication of machine elements operating under high temperature conditions. High load bearing properties imparted by MoS<sub>2</sub> and special anti-wear, antioxidant additives, ensure full protection to lubricated parts.

#### PERFORMANCE BENEFITS

- Servogem HT & HTXX greases
- have excellent resistance to oxidation thereby enabling it to withstand sustained exposure to high temperatures
  - Ensure minimum softening and loss of structure at high temperatures, even when subjected to substantial shear
  - Have excellent resistance to water wash out
  - Resist effect of mild acids and alkalis

#### APPLICATION

Servogem HT grease has been developed for the lubrication of machine elements, plain bearings and anti-friction bearings operating under high temperature conditions (between 120°C to 250°C). Servogem HT is recommended for calendar roll bearings of textile mills, paper mills and PVC filling machines, hot air exhausters/blowers, high temperature stuffing boxes etc.

Servogem HTXX is recommended for soot blowers of power plants, slides and other moving parts of overhead cranes for soaking pits in steel mill, track rollers of earth moving equipment, billet feeder bearings in rolling mills and bogie cars in sintering plants, etc.

#### PERFORMANCE STANDARDS

Servogem HT & HTXX greases meet US Steel requirement No. 372, IPSS 1-09-008 and IS:12790-1989

#### MANUFACTURERS' APPROVAL

- Servogem HT greases are approved by :
- ACC Vickers-Babcock Ltd., Durgapur
  - K.C.P. Ltd., Madras

### CHARACTERISTICS

GRADE	HT	HTXX
Colour	Brown	Greyish Black
Structure	Smooth	Smooth
Soap Type	Non-soap	Non-soap
Worked penetration, (@ 25°C, (60 Strokes)	265-295	265-295
Drop Point, °C Min.	280	280

### HEALTH & SAFETY

These 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.

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# SERVO<sup>®</sup> PRODUCT DATA SHEET

## SERVOGEM EP

IndianOil

### GRADES AVAILABLE – SERVOGEM EP 00, EP 0, EP 1, EP 2

#### DESCRIPTION

Servogem EP greases are premium quality lithium soap base products containing an extreme pressure additive. These grades are specially formulated to meet the demand of an EP grease for boundary lubrication conditions so as to prevent excessive wear, localised welding or seizure often associated with such severe operating conditions.

Servogem EP greases possess excellent shear stability, high load carrying capacity, high oxidation stability and capability to provide protection against rust and corrosion.

#### APPLICATION

Servogem EP greases are recommended for the lubrication of both plain and anti-friction bearings in a wide variety of application such as automotive and earth moving equipment, gear couplings, electric motors, mining equipment and general industrial machinery.

#### PERFORMANCE STANDARDS

Servogem EP 0, EP 1 & EP 2 meets IS:7623-1993(EP Type).  
 Servogem EP 2 also meets IPSS:1-09-005.

#### PERFORMANCE BENEFITS

- Possess excellent dispensing properties at low and high temperature, ensuring trouble free lubrication with centralise lubrication system
- Protect machine elements from excessive wear
- Prevent welding and seizure of the moving parts often caused by shock loading
- Protect bearing elements against rust and corrosion
- Resist water wash out thus assuring adequate lubrication over extended service intervals

- Servogem EP greases are approved by the leading machinery manufacturers, such as:
- ACC-Vickers-Babcock Ltd., Durgapur
  - BHEL, Hardwar/ Hyderabad
  - Bharat Pumps & Compressors Ltd., Naini
  - Heavy Engineering Corporation Ltd., Ranchi
  - Hindustan Motors Ltd. (Earth Moving Equipment Division), Trivellore
  - MECCON, Ranchi
  - BEML, Mysore,
  - MEYA Transmissions, Pune

#### CHARACTERISTICS

NLGI GRADE	00	0	1	2
<b>Colour</b>	Brown to Dark Brown			
<b>Structure</b>	Smooth	Smooth	Smooth	Smooth
<b>Soap Type</b>	Lithium	Lithium	Lithium	Lithium
<b>Worked Penetration, @ 25°C, (60 X)</b>	400-430	355-385	310-340	265-295
<b>Drop Point, °C Min.</b>	170	180	180	180

#### HEALTH & SAFETY

These 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.

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# **SERVO**® **PRODUCT DATA SHEET**

## **SERVOGEM BRB**

**IndianOil**

### **GRADES AVAILABLE – SERVOGEM BRB NO.3**

#### **DESCRIPTION**

Servogem BRB No. 3 is premium grease has short fibrous structure and good oxidation stability. It gives satisfactory performance even on long usage at the moderately high operating temperature (120°C max). This grease also provides excellent protection against rust and corrosion

#### **APPLICATION**

Servogem BRB No. 3 grease is suitable for lubrication of anti-friction and plain bearings over a wide range of temperature under moderate loads. It is well suited for application by screw-down lubrication system of rolling mills, packed journal bearings and anti-friction.

#### **PERFORMANCE BENEFITS**

Servogem BRB No.3 grease

- has excellent retention property thereby reducing consumption
- provides protection against corrosion
- assures trouble free service for long periods
- provides ease of application

Being a soda soap grease its resistance to water is limited and hence not recommended for such application where heavy condensation of moisture and water ingress in unavoidable.

Servogem BRB No. 3 has been widely accepted for use in textile mills packed bearings of machine tools, electric motors and similar equipment.

### **CHARACTERISTICS**

<b>Colour</b>	Light Brown
<b>Structure</b>	Short Fibre
<b>Soap Type</b>	Sodium
<b>Worked Penetration, @ 25°C, (60Strokes)</b>	265-295
<b>Drop Point, °C Min.</b>	150

### **HEALTH & SAFETY**

These 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.

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# SERVVO<sup>®</sup> PRODUCT DATA SHEET

## LUBREX CUP GREASE

IndianOil

### GRADES AVAILABLE – LUBREX CUP GREASE 2&3

DESCRIPTION	APPLICATION
Lubrex Cup Greases are smooth structured, pale yellow coloured calcium soap greases. These greases possess good water resistance characteristic and can be used for lubrication of machine elements operating in conditions where water ingress cannot be avoided.	Lubrex Cup Greases are recommended widely for plain bearings operating under moderate to low temperatures (60°C to 0°C) Where the churning and vibrations are not excessive. The consistency of these greases allows for application by compression grease cups and hand grease guns. Lubrex Cup Greases are recommended for general purpose lubrication. They are not suitable for high temperature applications and situations demanding grease with extreme pressure characteristics.
PERFORMANCE BENEFITS	PERFORMANCE STANDARDS
<ul style="list-style-type: none"><li>• Perform satisfactorily even in wet conditions since they possess superior water resistance quality</li><li>• Possess excellent shear stability</li><li>• Provide ease of application by manual lubrication equipment, since they have excellent dispensing property</li></ul>	<p>Lubrex Cup Greases meet the following specification:</p> <ul style="list-style-type: none"><li>• IS : 506-1993 Grade 2 and 3 for automotive greases</li></ul> <p>Lubrex Cup Grease 3 meets the following specification:</p> <ul style="list-style-type: none"><li>• IS : 507-1993 for general purpose grease</li></ul>

### CHARACTERISTICS

NLGI GRADE	2	3
Colour	Yellow To Brown	Yellow to Brown
Structure	Smooth	Smooth
Soap Type	Calcium	Calcium
Worked Penetration, (@ 25°C, (60 Strokes)	265-295	220-250
Drop Point, °C Min.	88	88

### HEALTH & SAFETY

These 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.

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# SERVO<sup>®</sup> PRODUCT DATA SHEET

## SERVOGREASE CG-10

IndianOil

GRADES AVAILABLE – SERVOGREASE CG-10 ( 500, 1000, 2500)

DESCRIPTION	APPLICATION
Servogrease CG-10 is a semi-fluid lubricant based on highly viscous mineral oil and aluminium soap as thickener. Special additives and fine colloidal graphite make Servogrease CG-10 an excellent operational lubricant for open girth gears having spray system of lubrication. The product is available with base oils in three different viscosity grades (500, 1000 & 2500).	Servogrease CG-10 is a specially designed lubricant for girth gears of cement plants. It is also suitable for heavy-duty gears in rotary kilns and mills, dryers, excavators, large chains, rack & pinion drives, slewing ring and a variety of such applications. The product is applied through automated spray systems.
Servogrease CG-10 is manufactured from highly refined mineral oil, Aluminium soap and superior quality additives. The product is produced in a most modern and sophisticated grease plant under strict manufacturing and quality control measures.	<b>PERFORMANCE BENEFITS</b> <ul style="list-style-type: none"><li>• Excellent adhesive properties.</li><li>• Excellent anti-wear and anticorrosive properties.</li><li>• High load carrying ability.</li><li>• Excellent sprayability.</li></ul>

### CHARACTERISTICS

	500	1000	2500
NLGI Consistency	0	0	0
Penetration @25°C	375	384	360
Dropping Point, °C	131	125	130
Base oil Viscosity, @ 40°C, cSt	510	1050	2435
Copper Corrosion, 100°C, 24 hrs	Pass	Pass	Pass
Weld Load, Kg	700	700	700
Wear Scar Dia, mm	0.6	0.6	0.6
Timken OK Load, lbs	45	45	45
Timken Retention, Minutes	30	30	30
FZG Gear Tests, Pass stage	12	12	12

### HEALTH & SAFETY

These 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.

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