

RHODORSIL® GREASE 33

Description **RHODORSIL GREASE 33** consists of a silicone fluid thickened with a lithium soap. It is especially designed for use in lubrication of ball-bearings and bearings operating at high or low temperatures (from – 70 °C up to + 180 °C).

- Examples of applications**
- Greasing of ball bearings or moving parts operating under severe weather conditions or working at extreme high or low temperatures: ski lift-carrier shafts, freezing equipment, electric motors, windscreen wipers, motor gears, rotating beacons for airport run ways, valves in the petroleum industry.
 - Greasing of precision equipment in which the grease consistency must be nearly constant: aircraft switches, geo physical instruments, cameras, photographic equipment.
 - Lubrication of ball-bearings which must operate at the same speed under very low to very high temperatures: clockwork mechanisms, x-ray equipment, synchronized motors.

- Advantages**
- Resistance to heat: slight lowering of viscosity with increasing temperature but does not decompose and gives a long service life.
 - Very little change in consistency with temperature: does not stiffen when cold, does not thin out at high temperatures.
 - Very good stability: especially in contact with water and most corrosive media.
 - Negligeable effect under vacuum: no change in consistency

Characteristics	Composition.....Polysiloxane methylphenyl and Lithium soap
	Colour.....Light brown
	Specific gravity at 25 °C,approx.....1.03
	Penetration, worked 1/10 ^e mm,.....280 ± 20 (ASTM D217648)
	Penetration not worked during 24 hours, after, 1/10 ^e mm approx.250
	Bleed after 24 hours at 150 °C, %, ⁽¹⁾< 4
	Volatiles after 24 hours at 150 °C, %, ⁽¹⁾< 3
	Minimum drop point (°C), approx.....210 (ASTM D 566-42) (1) <i>determined with equipment described in specification MIL-S-8660</i>
	Low temperature limit °C approx.....– 70
	High temperatures limits °C approx.....+ 180

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Processing

Best results are obtained in using **RHODORSIL GREASE 33** if the following precautions are observed.

a) Cleaning

Generally, **RHODORSIL GREASE 33** is not compatible with mineral greases; so, in case of use on bearings already working, it is advised to carefully remove old grease before packing with **RHODORSIL GREASE 33**.

b) Processing

RHODORSIL GREASE 33 can be applied by using any of the normal processes: brushes, pumps for greasing or automatic greasing devices.

For some applications, it is possible to incorporate RHODORSIL FLUID 510 to lower the viscosity of **RHODORSIL GREASE 33**. Care should be taken in mixing to ensure homogeneity (e.g. by using a mixer).

RHODORSIL GREASE 33 is soluble in aromatic and aliphatic hydrocarbons. This allows its application by spraying or by dipping.

c) Amounts of grease to be used

As for mineral greases, the optimum efficiency of the grease is obtained with a predetermined level of filling. In practice it is found that bearing must be packed as follows taking into account their sizes:

- size less than 75 mm: the bearing should be packed with grease between one third and half the capacity.

- size more than 75 mm: the bearing should be packed with grease between one half and three quarters of capacity.

d) Rotational speed

The performance of **RHODORSIL GREASE 33** depends not only on the rotational speed but also on the size of the bearing. It is therefore useful to take into account the speed factor which is; bore size in mm x r.p.m.

RHODORSIL GREASE 33 is especially designed for lubrication of bearings running at a speed with the following maximum speed factors

200 000 for small diameters

150 000 for large diameters.

Good results have been obtained for small bearings running at 70 000 r.p.m. thus showing its good resistance to centrifugal force.

e) Load

RHODORSIL GREASE 33 does not give good results under high loads. A bearing lubricated with **RHODORSIL GREASE 33** must not be used under a load higher than one third of its normal loading so as to assure a long service life.

f) Expansion effect

It is found that the service life of **RHODORSIL GREASE 33** is by an increase in the load caused by difference in the expansion of the inner cage compared with the outer especially when the bearing works at high temperature. It is therefore necessary to make allowance for the difference in expansion. It is obviously not the case for bearings manufactured from special steels.

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g) Behaviour at low temperatures

RHODORSIL GREASE 33 is highly recommended for use at low temperature. It does not stiffen and therefore the bearing will have low torque. The table below gives some typical low temperature torque. The table below gives some typical low temperature torque properties measured as described in specification ASTM-Method D 1476 when using **RHODORSIL GREASE 33** having an average consistency.

Temperatures	Starting torque (gm .cm)	Running torque (gm.cm)
- 55 °C	1600	390
- 70 °C	2800	1110

REMARKS

- 1- **RHODORSIL GREASE 33** should not be applied to surfaces which are to be painted.
- 2- **RHODORSIL GREASE 33** is not recommended for the lubrication of taps and valves for oxygen systems. This is because silicones in contact with oxygen under pressure may cause explosions.

Packaging

RHODORSIL GREASE 33 is supplied in 100 g tubes, 5 kg cans, 25 and 200 kg drums.

Storage and shelf life

When stored in its original unopened packaging at a normal temperature between + 2 °C and + 40 °C, **RHODORSIL GREASE 33** must be used within 18 months of the manufacture date shown on the packaging.
Beyond this date, Bluestar Silicones no longer guarantees that the product meets the sales specifications.
Furthermore, we recommend that **RHODORSIL GREASE 33** be stored in a cool, dry place.

Safety

Consult the Safety Data Sheet **RHODORSIL GREASE 33**.

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