

VESCONITE Hilube



**BUILT-IN LUBRICATION
ULTRA LONG LIFE
LOW MAINTENANCE**



**LONG-LIFE, NO-GREASE
BEARINGS**
VESCONITE.COM

VESCONITE Hilube

ADVANTAGES



An exceptional bearing material

Developed to solve wear problems in unlubricated and dirty applications, Vesconite Hilube is a long-life, low-maintenance plain bearing material, which also gives outstanding performance when lubricated. Vesconite Hilube is compounded from an advanced engineering thermoplastic, incorporating effective internal lubrication.



Significant advance

Introduced to take over from Vesconite Standard when dry running and when relatively high loads and sliding speeds apply, Vesconite Hilube has outperformed all expectations. With half the friction of Vesconite Standard, it is a significant advance, offering many times the wear life. It also shows exceptionally low wear rates when lubricated, whether this occurs at fitting only or regularly.



Outperforms conventional materials

Vesconite Hilube overcomes the limitations of metallic bearing materials and conventional engineering plastics. Vesconite Hilube combines a load-bearing higher than white metal (babbit) with more than 10 times the wear life of bronze in poorly lubricated or dirty conditions. Its self-lubricating properties are far superior to nylon. But unlike nylon-based products, Vesconite Hilube does not swell in water or humid conditions.



Long life with little or no grease

Extended wear life is crucial. In the 1960s, nylon was an improvement upon bronze in many plain bearing applications. In the 1970s Vesconite Standard was a development crucial to reducing maintenance. It proved a great advance on nylon and bronze, and improved upon white metal in many applications. Vesconite Hilube is the next generation tribological breakthrough, with up to five times the wear life of Vesconite Standard. With little or no grease, it gives many times the wear life of metal bushings.



User friendly

Proven in numerous industrial trials, Vesconite Hilube is ideal for carrying high loads with precision clearances. Insensitive to lubrication lapses, dirty, wet or corrosive conditions, it is a user-friendly bearing material.



Low friction

The dynamic, unlubricated friction of Vesconite Hilube against steel goes as low as 0.08 - similar to glass and graphite-filled PTFE, and one third that of nylon. The dynamic friction coefficient of Vesconite Hilube remains constant over long periods of operation, unlike many so-called low-friction materials where the friction coefficient starts off low but rises steadily. The low static friction means no problems in applications with intermittent motion.



High load strength

Vesconite Hilube shows very low creep under load and has high fatigue strength. The recommended maximum design load for intermittent motion is 30 MPa (300 kg/cm², 4,350 psi), much higher than the design limit for white metal, nylon and glass-filled PTFE. The load-carrying capacity of Vesconite Hilube is not affected by water or humidity. This is a significant problem for nylons, which soften in moist environments and lose up to two-thirds of their strength. Moisture increases the wear rate of nylons and leads to creep when under load. Vesconite Hilube has proved particularly superior in high-load applications.



No water swell

When fully saturated with water – a process that takes many months – Vesconite Hilube absorbs less than 0.5% by mass. This leads to a linear swell of less than 0.07% which, in most applications, can be ignored. In comparison, nylons absorb moisture by as much as 9% of their mass, causing up to 3% linear swell and a critical loss of clearance – often leading to seizure.



Dimensional stability

Vesconite Hilube has a comparatively low coefficient of thermal expansion. The thermal expansion is one third less than nylons and acetal. When replacing metal parts, Vesconite Hilube requires only slightly more clearance. No allowance needs to be made for moisture changes. This is a critical advantage, as the most common reasons for the failure of polymer bearings are thermal expansion and water swell.



Temperature limits

Vesconite Hilube is limited to 65°C (149°F) in immersed conditions and 100°C (212°F) in dry conditions, and for short periods at higher temperatures. For higher operating temperatures, please contact Vesconite Bearings with details of your application.



Load and speed limits

The product of load-and-bearing surface speed – commonly called the PV limit (pressure x velocity) – is often given as a design guide. The PV limit of Vesconite Hilube is over four times that of nylon and twice that of Vesconite Standard. PV limits are usually determined in laboratories and are not always applicable to field applications. Many factors affect PV limits, particularly lubrication, load, friction, temperature, moisture and speed. For a given load, the bearing surface speed may be greatly increased with improved lubrication or cooling through circulation, as the index shows:

<i>Suggested PV Limits</i>	<i>MPa.m/min</i>	<i>Psi.ft/min</i>
<i>Dry – no lubrication</i>	< 8	< 4,000
<i>Greased on assembly</i>	< 15	< 8,000
<i>Periodic lubrication (oil, grease)</i>	< 25	< 12,500
<i>Circulating oil lubrication</i>	< 50	< 25,000
<i>Circulating water lubrication</i>	< 200	<100,000



Less wear to metal mating parts

Vesconite Hilube reduces wear to metal mating parts by over 90%. Mating part wear is a particular problem with metallic and nylon-based bearings, especially when using unhardened shafts. This valuable benefit alone justifies the changeover to Vesconite Hilube when dealing with expensive shafts.



Chemical resistance

Vesconite Hilube is resistant to organic solvents, petrol, oils, and dilute acids. It has a limited resistance to concentrated strong acids and mild alkalis. Lengthy immersion in boiling water should be avoided due to thermal degradation.



Easy to machine

Vesconite Hilube can be easily machined on standard metalworking equipment. Vesconite does not creep, deform or swell and machines easily to desired tolerances. Vesconite is an exceptionally clean material to machine and possesses no fibre or dust hazards.



Easy to install and remove

Vesconite Hilube bearings are easy to install and remove on site – unlike corroded steel, ball bearings and bronze. With Vesconite, there is no need for costly equipment and unnecessary hassle.



VESCONITE Hilube INDUSTRIES

- ⚙️ Pumps
- ⚙️ Marine
- ⚙️ Agriculture
- ⚙️ Earthmoving
- ⚙️ Hydro
- ⚙️ Mining
- ⚙️ Rail
- ⚙️ Renewable Energy
- ⚙️ 3D Printing
- ⚙️ Materials Handling
- ⚙️ Industrial Processes



Solid Rods

Stocked from:

8 to 180 mm (0.3" – 7") diameters.

Bushings (Tubes)

Stocked from:

15 to 800 mm (0.6" – 32") diameters.

Standard lengths of 1 m (39.4").

Lengths up to 3 m (118") may be produced to order.

(Setup charges may apply)



Plates (Slabs)

Stocked in standard sizes of:

- 1,000 x 200 mm (39.4" x 8")
in thicknesses from 2 to 100 mm (0.08" to 4")
- 1,000 x 600 mm (39.4" x 24")
in thicknesses from 10 to 40 mm (0.39" to 1.57")
- 500 x 400 mm (19.7" x 15.7")
in thicknesses from 3 to 8 mm (0.11" to 0.31")
- 1,000 x 1,000 mm (39.4" x 39.4")
in thicknesses of 25 mm and 40 mm (1" and 1.57")

VESCONITE Hilube PRODUCT RANGE

Readily available from stock globally.
Download or request the Vesconite Hilube product list.

Custom Components

Vesconite Bearings has over 70 computer numerically controlled lathes and machining centres in its machine shop, including 2-axis, 3-axis, 4-axis and 5-axis machines.

Ready-to-fit machined bushings are stocked for a range of shaft sizes. To reduce costs on quantity orders, Vesconite custom moulds and machines components to engineering tolerances. Contact us with your requirements.



VESCONITE

BEARINGS

The story of Vesconite goes right back to 1968, when founder and chemical engineer Alain Leger began researching the potential for polymer bearing materials in ultra-deep gold mines of South Africa – a notoriously harsh environment characterised by extreme dirt and wetness.

Founded in 1958, Vesconite Bearings is a world-leading manufacturer of low-friction, low-wear polymer bearing materials for a wide range of industries. These include the pump, agriculture, railways, mining, heavy-transport, hydro, renewable-energy, earthmoving, marine and construction industries.

The Vesconite Bearings factory spans 20,000 m² and features advanced extrusion, injection-moulding and CNC machining facilities. Both standard stock (rods, bushings and plates) and high-quality finished parts are produced. The company is ISO 9001:2016 certified.



**EXTENSIVE
STOCK
RANGE**

**SHORT
LEAD
TIMES**

**QUICK
GLOBAL
DELIVERY**

HOW CAN WE HELP YOU?

Please feel free to get in touch with any general enquiries or specific application requirements.

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