

KEPITAL

Tribological properties (1)

Tribological properties are highly affected by driving conditions such as pressure on the contacted surface, velocity, temperature, surface roughness etc.

The demand for longer lifetime and cost-effective products has recently increased; it has brought up the importance and interest in friction and wear characteristics, especially for self-lubricated products.

Standard unfilled KEPITAL has widely been used in sliding parts because of its inherent lubricity.

Moreover, versatile KEPITAL anti-friction & wear grades have been developed for more finely-turned applications requiring severe wear condition.

Grade	Description
TS-25H	Silicone modified
FL2020	PTFE modified
TX-31	Special lubricant package formulated

Table 1. Key point to lubricated KEPITAL

1. Friction

Friction is the resistance to sliding of two paired surfaces and is divided by dynamical friction coefficient or static friction coefficient.

In general the friction force causes a surface temperature to increase at high velocity and a squeak noise under a certain pressure.

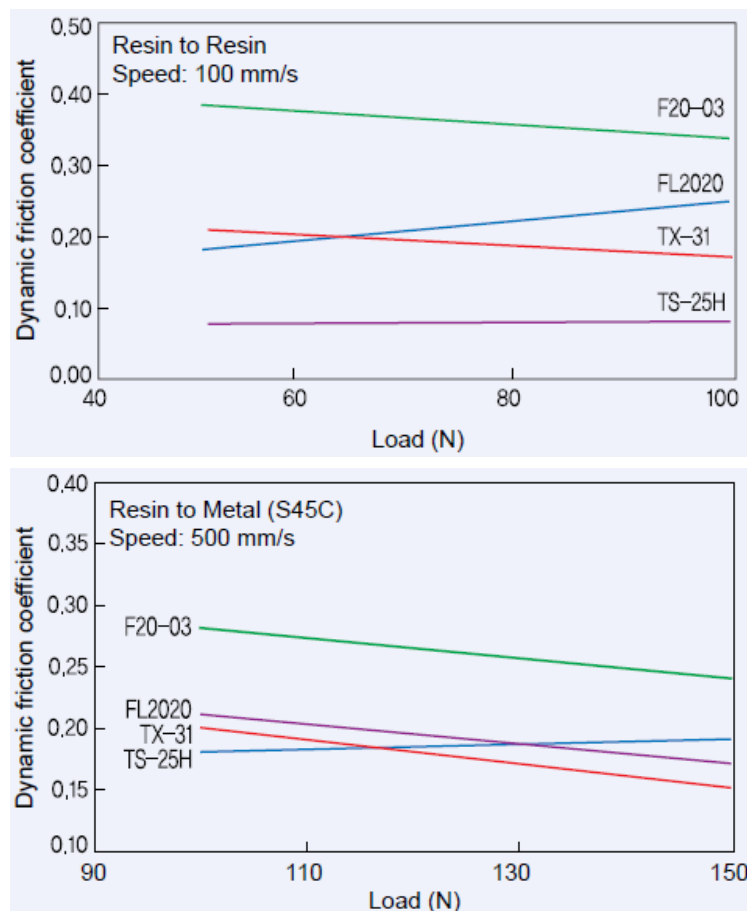


Figure 1. Dynamic friction coefficients of KEPITAL

Materials that have a low friction coefficient to particular running conditions are usually effective for good tribological behavior. TS-25H shows extremely low friction properties in sliding against itself even under high Pressure in Figure 1.

2. Wear

Wear occurs from mechanism motions such as abrasion, adhesion and fatigue, etc., among two or more sliding materials. Specific wear rate is useful to forecast KEPITAL's longevity along with its performance in designated sliding condition.

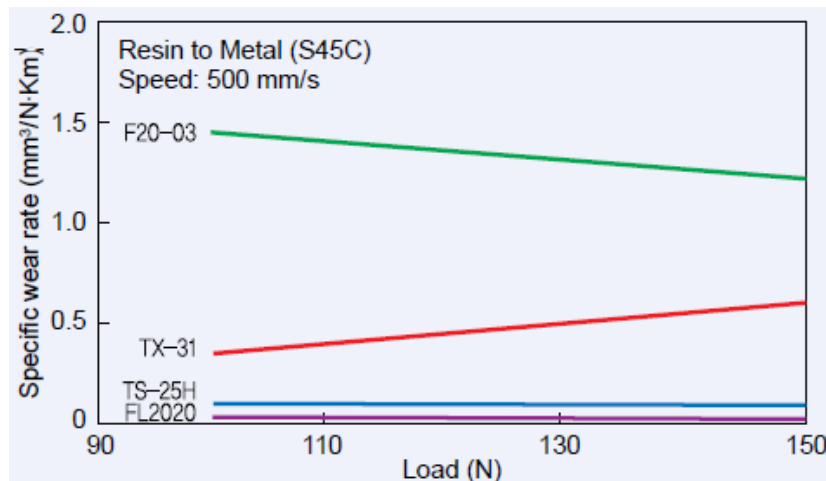


Figure 2. Specific wear rate of KEPITAL

Significant reduction in wear rate of KEPITAL FL2020 to standard unfilled grade is shown in Figure 2.

3. PV limits

In terms of frictional behavior, if pressure and speed gradually increase, at a certain point a material cannot withstand any further stress and starts to melt.

The maximum value where operation is still possible is called the PV limit.

A material with a high PV limit illustrates that it can be utilized under more severe operating conditions.

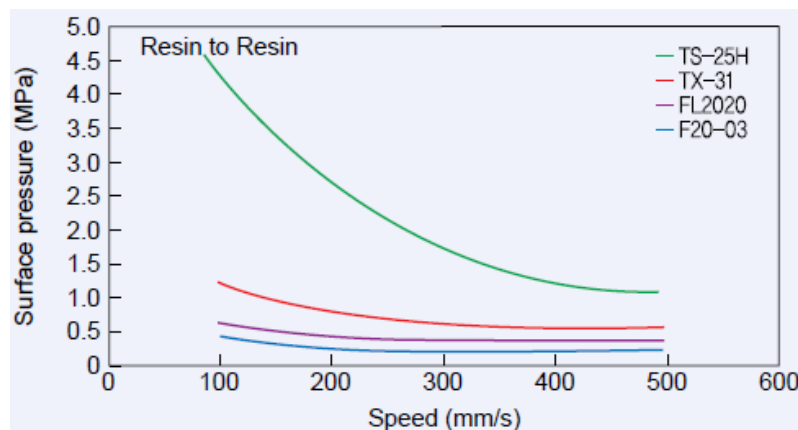


Figure 3. PV limits of KEPITAL

Higher PV limit of TS-25H than standard unfilled grade of F20-03 and other lubricated grades is shown in Figure 3.

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