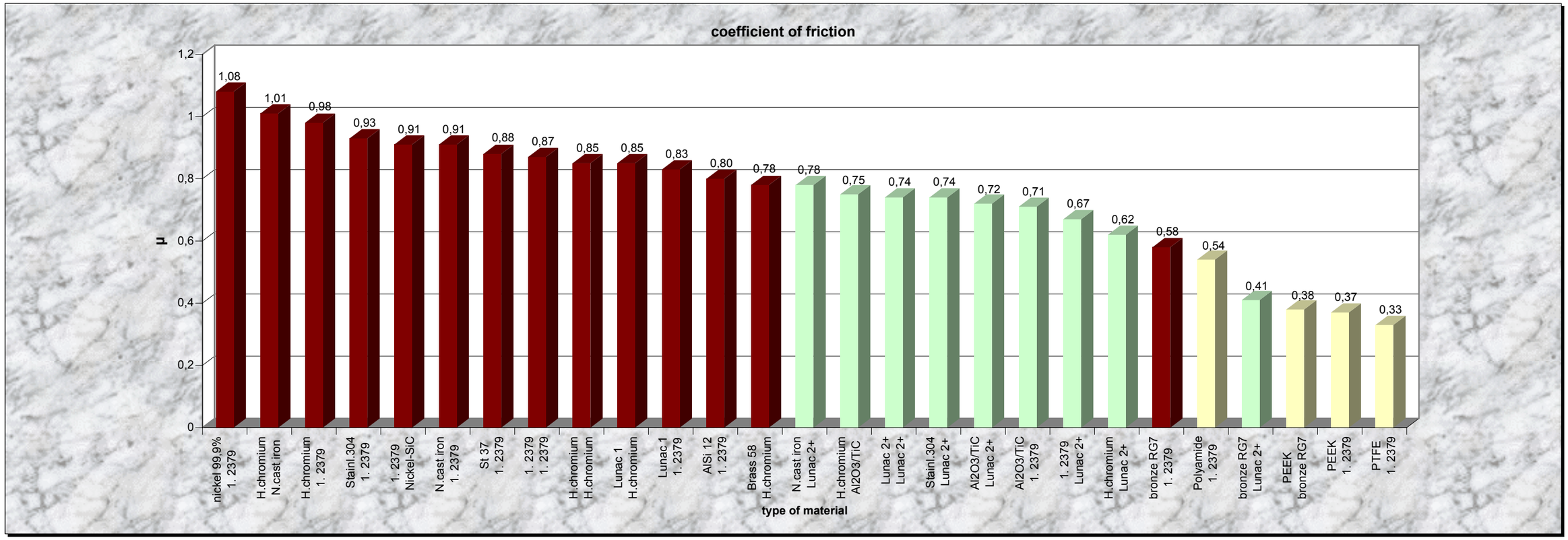
Dynamic coefficient of friction

The coefficient of friction is determined as a value μ, whereby a force Ft is needed to translate two opposing parts under a load Fn . This coefficient is largely independent of the speed (from 0,4 m/sec. onwards) and the (not mouldable distorted) real area of contact.The roughness of a material influences to a certain extent the coefficient of friction very little. Very polished surfaces can create however numerous adhesive bridging, and very rough surfaces can create higher frictional resistance by pure mechanical obstruction. Most metals loose, under a sliding force from 0,1 N onwards, their, usually reduced friction, oxide layer.The **coefficient of friction can**, because of this, **raise** very often **by a factor 3** in case of more non-precious metals in dynamic applications (see next page). The coefficient of friction in a ceramic or a trans-ceramic couple is much more stable.

Normal load: 12,70 N
Speed : 0,7 m/sec.
Measuring error: ± 4 %
Reading: dynamic couple measurement
Circumstances: non-lubricated, non-inert atmosphere, 20 ° C

Power-Heat-Connection generators experience remarkable advantages, in case the cilinders have been plated with a Lunac 2+ coating. The wear-resistance increases tremendously and the coefficient of friction decreases in such an amount, that these engines consume much less lubrication oil. This low oil consumption will sustain very long, according to the increase of wear resistance. Remarkable is also the observation of an undoubtable efficiency increase.



Green = at least one side of the couple is a ceramic or trans-ceramic material
Red = both sides of the couple are metals
Pale yellow = one site of the couple is a plastic

* In literature one can find significant lower values for the coefficient of friction for especially the metals. The difference is caused by the moment of measurement.
A measurement can be executed at worn-out oxyde layers or not worn-out oxyde layers, depending of time and load. In this investigation worn-out oxide layers have been tested.