



Niflon process

The process is a special development for the deposition of Nickel-Phosphorus-PTFE dispersion layers with a PTFE-percentage of 15 - 20 vol.%. The optimum deposition rate is 6 - 9 $\mu\text{m/h}$ and should not exceed 10 $\mu\text{m/h}$. The matt-structured layers have a phosphorus content of 9 - 11 %.

Physical Layer Properties

PTFE-embedding rate:	15 - 20 vol. %
Spec. surface of the solid material used:	7 - 10 m²/g
Particle size:	300 - 600 nm
Phosphorus content (wgt.%)	9 - 11
Density (g/cm³)	7.5
Magnetic properties	non-magnetic
Optical properties	matt grey structured
Hardness (HV_{0.1}) 30 μm layer on steel	depending on phosphorus content
- in deposition condition	380 - 440
- heat-treated 5 h at 250 °C	750 - 820
Macro internal stress	neutral to compressive strain
Friction coefficient	0.1 - 0.2

The advantage of this layer can be expressed in a few words:

By embedding of PTFE, its properties, i.e. low friction coefficient and anti-adhesive effect, are transferred onto the whole layer.

Two effects lead to a significant wear reduction:

The embedded particles prevent adhesion wear due to the low friction coefficient.

The abraded PTFE-particles form a dry lubricating film between the friction partners.