



NEW COATING MATERIAL OPTION FOR NIVOSWITCH VIBRATING FORKS

GENERAL

Reflecting on different customers' needs and requirements of special application conditions, NIVELCO supplements its coating material selection with a new, optional Halar® (ECTFE) coating for the NIVOSWITCH vibrating fork family. The PFA coating material have been used so far can still be ordered.

The new Halar® coating will only be used on the fork itself, the other parts of the construction (extension rod, process connection, flanges) will be manufactured the same way as before.

Halar® AND ITS STRENGTHS

Halar® is the brand name for a copolymer of ethylene and chlorotrifluoroethylene (ECTFE). This polymer has several key strengths:

Halar possesses excellent chemical resistance, and it is hydrophobic, absorbing less than 0.1% of its weight in water when submerged (24 h @ 23 °C).

Halar® can be applied in a much thicker coating than Teflon™, see the table below. Halar® coatings are often recommended for high-purity applications because static soak tests in both ultra-pure water and high purity chemicals have shown extremely low levels of metallic and organic extractables coming from Halar® coatings.

Halar® has a low dielectric constant in a variety of temperature environments. This dielectric strength is about 80 kV/mm in 0.025 mm-thick coatings.

Halar® has excellent mechanical properties and pressure resistance at mild temperatures.

Unlike PFA, Halar has an exceptionally smooth, non-porous surface. This helps to reduce the proliferation of bacterial colonies on Halar® surfaces, making it ideal for the medical and food industries.

The major limitation of Halar® compared to PFA Teflon™ polymers is the comparatively low temperature resistance. Halar® can, at most, withstand up to 149 °C of heat before failing. As such, it is not recommended for high-temperature processes.

FEATURES OF Halar® COMPARED TO PFA

Both Halar® and PFA are durable polymers used for a variety of applications. The following table compares some important parameters of Halar® and PFA.

Finish	Max. temperature	Thickness range mm (inch)	Durability	Softness	Adhesion	Corrosion resistance	Chemical resistance	Resistance to flaking
Halar® (ECTFE)	149 °C (300 °F)	0.5 – 1.5 (0.02 – 0.06)	Very good	Very good	Good	Very good	Very good	Very good
Teflon™ (PFA)	260 °C (500 °F)	0.3 – 0.5 (0.012 – 0.02)	Good	Average	Good	Excellent	Excellent	Varies

NEWSLINE



No. 330
14th March 2019

Halar® is resistant to most acids, bases, and organic solvents at moderate temperatures and at higher temperatures to some selected chemicals.

PFA is inert to most chemicals except molten alkali metals and fluorine and certain halogenated compounds at elevated temperatures.

In general, both Halar® and PFA coatings have high grade of chemical resistance and behave very similarly in case of acids, solvents, and hydrocarbons.