

### Cleaning Poly Urethane Spiral Hoses, Sleeves, Connectors, Seals and Products

In most cases maintaining your Filcoflex products is purely a case of good housekeeping. The media used to manufacture our connectors will naturally wear with usage over time, however, good maintenance will give you the best possible life.

You should not handle the products with any sharp objects. These may damage the sleeve, seal or connector. Be careful with screw drivers, pliers or other tools and handle these in a way so they can not cause any damage to the flexible product.



### Manual Cleaning

The most effective and easiest way to clean the Filcoflex Poly Urethane products like spiral hoses, sleeves, seals and connectors is with the use of Ethanol or Isopropyl alcohol.

Regarding food contact safety: Ethanol, is tested for its impact and contact with poly urethane in the migration testing reports for food contact compliancy.

Both leave the Poly Urethane as clear and clean as before, and sanitizes at the same time.

The poly urethane seals and sleeves may also be washed and rinsed with a non-corrosive detergent in warm water.

After cleaning always rinse away any remaining chemical and dry the connector of any chemicals or fluids.



### CIP - Clean In Place

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You can use most Filcoflex products in CIP cleaning processes that use detergents or chemicals. If the CIP process uses detergent only there will be no problems.

If the CIP process involves the following chemicals, we recommend to stay within the following guidelines. The following percentages are the maximum recommended concentration levels that should be used during CIP for the specified chemicals.

Based on studies and experiments Filcoflex recommend to not exceed the following concentration percentages and temperatures of the caustic or acid used in your CIP process.

<b>Acid</b>		0,8%	90°C	
HNO <sub>3</sub> Nitric Acid		0,8%	90°C	may result in slight color change
HNO <sub>3</sub> Nitric Acid		4,0%*	90°C	strong color change to yellowish/orange
HCL Hydrochloric Acid		0,8%	90°C	slight color change
HCL Hydrochloric Acid		4,0%*	90°C	strong color change to white/opaque
<b>Lye</b>		1,5%	90°C	
NaOH Caustic/Sodium Hydroxide		1,5%	90°C	
NaOH Caustic/Sodium Hydroxide		4,0%*	90°C	strong color change to yellowish/orange

Any higher concentration does not provide any increased benefits in cleaning the system.

Higher concentrations will have a great impact on many plastic or rubber parts, such as gaskets, seals and flexible joints.

The maximum recommended concentrations will have an effect on the Poly Urethane products over time in terms of color change to yellowish/orange tint.

This color change has no effect on the performance and mechanical properties of the poly urethane. The tear strength and elasticity are not effected or only slightly. This has been extensively tested, a copy of this report is available upon request.

Hot Water	90°C
Hot Air	100°C**

\* Higher concentrations have been tested and show more effect on the poly urethane materials. A copy of our testing report is available upon request.

\*\*Hot air temperatures have been tested up to 120 and 150°C. Upon request we can disclose the results and advise on specific design applications

### Important

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After washing always first rinse and remember to wipe the connector clean and dry of any residual fluids and chemicals. This applies to CIP and Manual Cleaning.

Remember to clean any equipment mating flange, tube or spigot to which the flexible sleeve or seals connects to, and dry the surfaces before you assemble the parts back in to place.