

# No-Ox™ Tubing Patent Pending



## A totally new approach to LC-Tubing

While everyone knows that HPLC systems perform better when the mobile phase is degassed, it is not widely known that the time and money spent on the preparation of the mobile phase may be completely wasted by connecting the degassed mobile phase to the pumping system using teflon (PTFE) tubing.

Both PTFE and FEP are standard type of tubings generally used in most HPLC installations and are indeed doing a poor job. Also the wall of the teflon tubing acts as a reservoir for atmospheric oxygen. The length of time needed to reach an equilibrium point in the mobile phase in a one meter length of test tubing is around half an hour.

We call it "regassing" when e.g. oxygen from the atmosphere enters into the system. During our development of sparging and vacuum systems

we found that PTFE tubing is the worst tubing which can be used to transfer mobile phase to the pump since it allows atmosphere to re-enter into the mobile phase.

Given the lack of data we began to examine the various polymers available which could be candidates for solvent inlet and transfer lines to HPLC pumps and instruments. What we discovered was surprising. We found that PTFE tubing is the worst tubing which can be used to transfer mobile phase, yet is the best tubing for inertness. We found that the absolute best polymer which had the most desirable features - inertness, degree of transparency, ability to be extruded, flexibility and above all, very low oxygen permeability - was PVDF (polyvinylidene fluoride).

Its drawback was the limited chemical resistance.

We have therefore co-

extruded the NO-Ox™ tubing with an inside of FEP and an outside of PVDF.

The result of this new HPLC tubing is shown in the graphs.

After you have spent time to prepare a mobile phase and either manually degas it, helium sparg it, or pass it through an expensive vacuum degasser, it only makes sense to use a tubing, which ensures you gain full benefit of your efforts or money spent on a degasser - start using No-Ox™ tubing for all your transfer lines.

No - Ox™ Tubing is easy to strip.

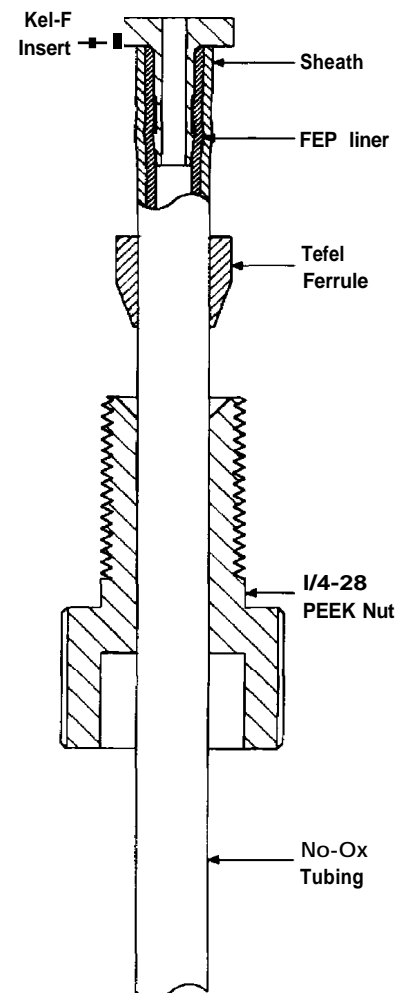
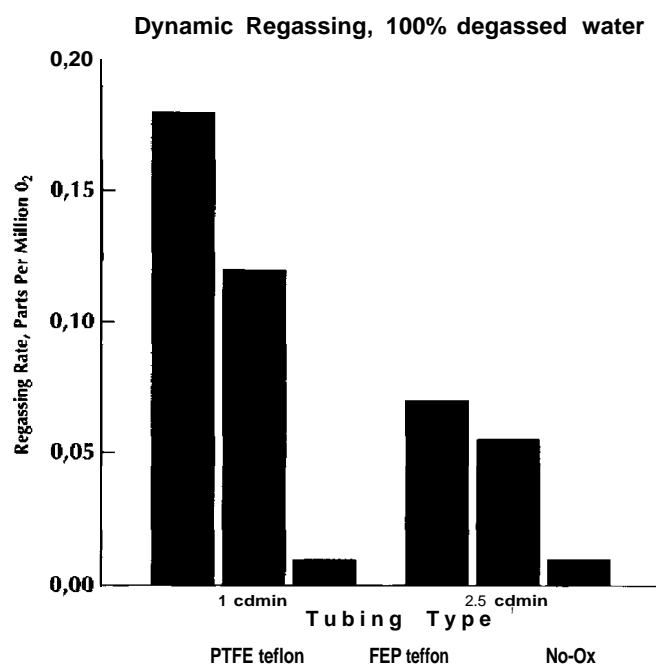
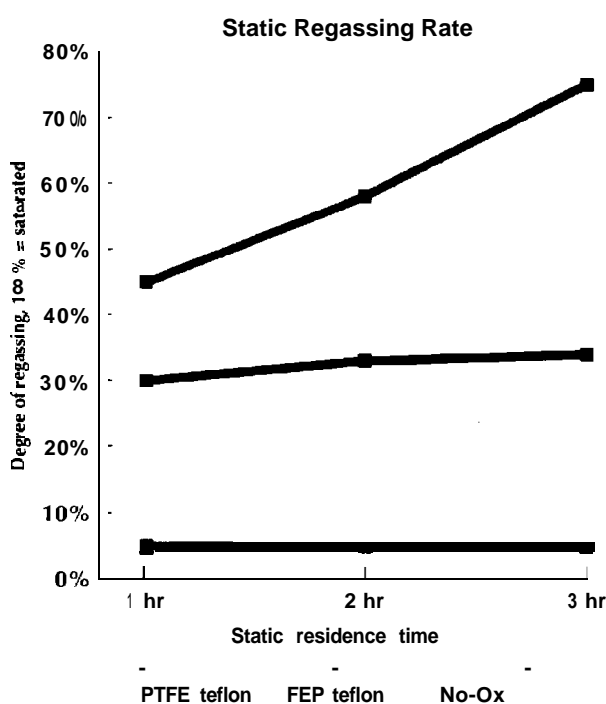
In many HPLC solvents, it is desirable that nothing but FEP tubing to be in contact with the mobile phase. Since No-Ox™ uses a PVDF layer to reduce atmospheric penetration to the mobile phase, it may desirable to strip this layer from the teflon tubing.

No-Ox™ is therefore co-

extruded in such a way that the PVDF layer can easily be scored around the circumference of the tubing at any point and stripped from the teflon tubing so only teflon will be immersed in the mobile phase.

After scoring (use P/N 797 Clean cutrMor razor blade), a simple bending action cracks the PVDF layer and it can be slipped from the teflon tubing.

Some solvents swell PVDF so a special Kel-F ferrule was designed (P/N 6141) to prevent contact at the end of the tube when making connections. This ferrule inserts into ID of the tube and seals against the bottom of the port.



### No-Ox™ Tubing

Part No.	Description
6130	NO-Ox™ Tubing, OD 1/8" x ID 1,5 mm (min 2 M)
6140	Fittings Kit, consisting of: 2 pcs KEL-F inserts, 2 pcs PEEK nuts and 2 pcs Tefzel Ferrules
6141	Replacement KEL-F Insert Ferrule
20116	Replacement PEEK Flangefree Nut, 1/8"
051	Replacement Tefzel Ferrule, 1/8"

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