

## Vapourtec Launches Acid Resistant Flow System

November 10<sup>th</sup> 2009 – Vapourtec are proud to announce the launch of the fully acid resistant R Series Flow Chemistry System.

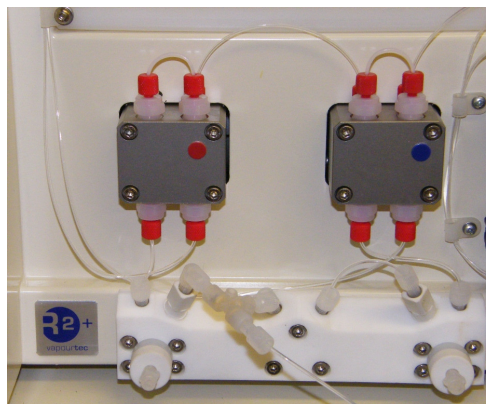
### Nitrations with ease

One kind of reaction that is very much in demand is the organic nitration. This typically requires the use of reagents which are extremely corrosive and/or unpleasant to handle (fuming nitric acid, concentrated sulphuric acid).

Though the flow chemistry approach offers great benefits for situations where reactions are potentially very exothermic and manual dispensing of the reagents is not preferred, until now there was no integrated flow system available off the shelf which was capable of surviving continuous exposure to the most aggressive of these reagents. Publications purporting to show nitration in flow have generally involved either systems that would have to be discarded after the work was completed, or else unusual scenarios using relatively dilute acids.

Now, as a result of extensive research and development involving pumps, valves, sensors, fittings and regulators, Vapourtec are able to offer a system in which every single component that comes into contact with the flow is able to withstand these aggressive reagents.

In fact, one user has already carried out a nitration using fuming nitric acid at a rate of 50g/hr. The reaction was clean, straightforward and completely controlled.



**The Vapourtec R2C acid resistant pumping module. Pumps, valves, back pressure regulators and fittings are all strong acid-resistant.**

### And not just nitrations...

Of course, this kind of chemical resistance applies to more than just nitrations. Butyl lithium, concentrated TFA and many other corrosive reagents can now be handled, opening up a range of hitherto inaccessible reactions.

### Still an R Series at heart.

This new capability has been achieved without any compromise in performance. The acid resistant system offers the same flow rate, pressure and temperature performance as the original R Series. However, sample injection loop valves are not compatible with the most aggressive of the

reagents, and the high temperature tube reactor is not **yet** available in an acid resistant variant.

And of course the powerful Flow Commander™ software can be used just as before to prepare, automate and scale up reactions.

## FAQ

**Q What reagents will the system handle ?**

**A** The system has so far been tested with Nitric Acid (fuming), Sulphuric Acid (concentrated), TFA (concentrated), Butyl Lithium. As further testing is carried out this list will grow.

**Q I need to use reagents not mentioned in the list above.**

**A** Contact Vapourtec with your requirements. In most cases the response should be immediate.

**Q Will the sample injection loop system also be compatible with these chemicals ?**

**A** No, this new capability applies only to reagents pumped from bottles.

**Q When is the new capability available ?**

**A** Any system purchased after 11th November 2009 can be supplied with this functionality if specified at order time.

**Q I already have an R Series System. Can I upgrade it to this functionality ?**

**A** Vapourtec's service staff can attend the system to upgrade it or can upgrade the system on a back to base basis.

**Q Are the capabilities of the acid compatible system the same as the standard system ?**

**A** The system will offer the same flow rates, pressures etc, up to 150°C. However the high temperature reactor will not initially be available. The sample injection loop facility will not be compatible with strong acids. All the functions of the Flow Commander™ software are available, as are the extra pump options if required.

**Q Is this new capability expensive ?**

**A** The acid resistant variant does of course cost more but the increase is relatively small. For a quotation, contact Vapourtec.

If you have any questions not answered here, contact [info@vapourtec.co.uk](mailto:info@vapourtec.co.uk)