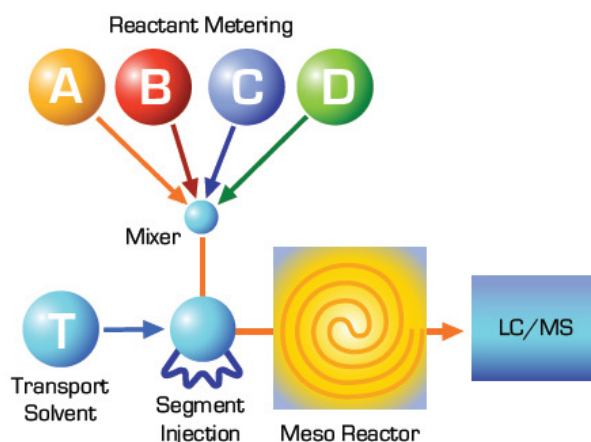
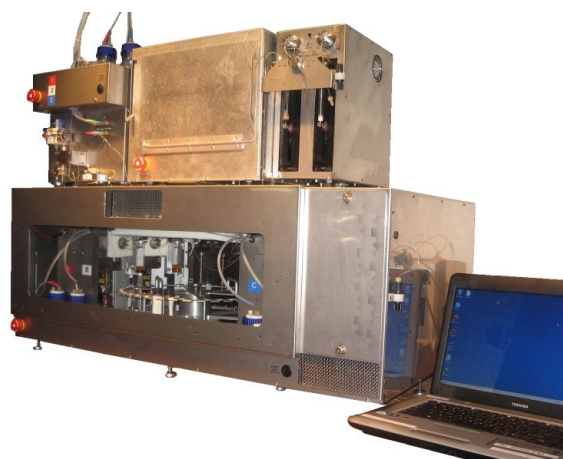


Conjure™ Segmented Flow Reactor System



The Conjure is a bench top system, designed for a core laboratory focused on the development of new reaction methods for the synthesis of libraries.

Screening, Optimization, Libraries and Scale Up

- -20 to 300 °C reaction temperature
- Two-step synthesis capabilities
- Fully automated with up to 40 individual reactant inputs
- Ambient to 300 °C
- 150 bar pressures
- Unlimited programming quantity of reaction segments
- Inert Reaction Environment
- Minimum screening volume: 100 µL
- Scales to 10 grams
- Optional LC/MS Analysis Interface

Expt #	Exec Expt	A	B	C	D	A [mMoles]	B [ME]	C [ME]	D [ME]	Vol A [µL]	Vol B [µL]	Vol C [µL]	Vol D [µL]	Total Volume [µL]	Reaction Temp [°C]	Resid. Time [min]
1	<input checked="" type="checkbox"/>	A1_1	B1_1	C1_1	D1_1	0.1000	1.0000	1.0000	1.0000	100.0	100.0	100.0	100.0	400.0	25.0	10.00
2	<input checked="" type="checkbox"/>	A1_1	B1_2	C1_1	D1_1	0.1000	1.0000	1.0000	1.0000	100.0	100.0	100.0	100.0	400.0	25.0	10.00
3	<input checked="" type="checkbox"/>	A1_1	B1_3	C1_1	D1_1	0.1000	1.0000	1.0000	1.0000	100.0	100.0	100.0	100.0	400.0	25.0	10.00
4	<input checked="" type="checkbox"/>	A1_1	B1_1	C1_1	D1_1	0.1000	1.0000	1.0000	1.0000	100.0	100.0	100.0	100.0	400.0	150.0	10.00
5	<input checked="" type="checkbox"/>	A1_1	B1_2	C1_1	D1_1	0.1000	1.0000	1.0000	1.0000	100.0	100.0	100.0	100.0	400.0	150.0	10.00
6	<input checked="" type="checkbox"/>	A1_1	B1_3	C1_1	D1_1	0.1000	1.0000	1.0000	1.0000	100.0	100.0	100.0	100.0	400.0	150.0	10.00



Reagent Vials

Pump Module	
Transport Solvents	(3) Solvent Reservoirs
Flow Rate	20 to 3,400 µL per minute
Incubation Rates	1 to 100 minutes
Segment Preparation Module	
Reagent Diversity	(40) Reagent Reservoirs
Mixing Temperature	-20 to 100 °C
1st Stage Reactor Temperature	-20 to 100 °C
Segment Reagents	Up to four reagents per segment
Reactor Module	
Temperature Range	-20 to 300 °C
Reactor Materials	Palladium, Hastelloy, Copper, Teflon (PFA)



What is 'Segmented Flow Chemistry'?

Segmented flow chemistry broadens your chemistry space via extreme reaction conditions: 300 °C and 150 Bar. With segmented flow, screening of new reaction conditions can be accomplished in as little as 100 µL of material, which allows more screening with less precious material. In addition, segmented flow enables a high level of automation, which includes the automation of reaction scheduling, preparation, temperature, incubation time and online LCMS analysis.

Why consider 'Segmented Flow Chemistry'?

Consider adopting segmented flow when reactions using traditional chemistry tools are not working or are considered hazardous like those used in Click chemistry (azides). As segmented flow chemistry enables extreme inert reaction conditions, many reactions that cannot be explored in standard glassware or by microwave can be successfully converted in segmented flow.

Extremely organic and caustic reagents can be used in the Conjure:

- H₂SO₄
- LiHMDS
- Bromine
- BuLi
- HCl

How does Segmented Flow Chemistry Work?

Segmented flow chemistry works by automatically metering and mixing specific reaction mixtures called segments using the fluidics shown in Figure 1. Segments are delivered into a HPLC type injection loop and injected into a high temperature and high pressure flow reactor environment (Figure 2). The reaction segment is incubated through the reactor using 'Push' technology. Incubation rate (time) is controlled by the flow rate (µL/minute). Segment experiments flow through the reactor as a continuous segment with minimum diffusion as shown in (Figure 3).

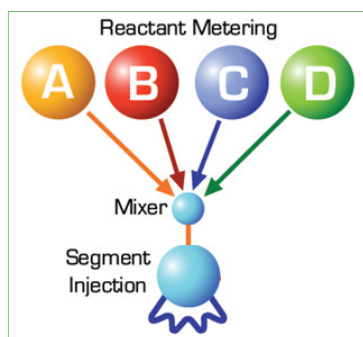


Figure 1—Segment Preparation

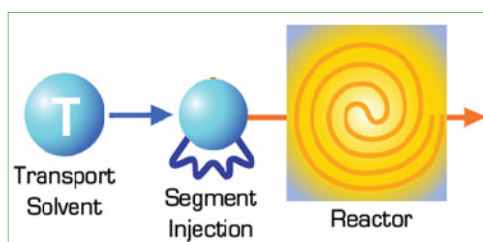


Figure 2—Segment Injection

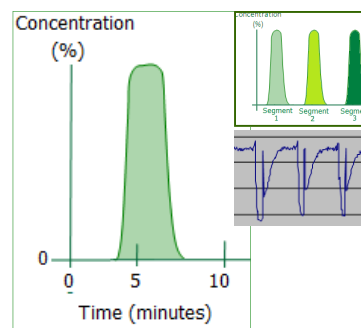


Figure 3—Segment

What are the benefits to Segmented Flow Chemistry?

- **Extreme reaction conditions:** 300 °C and 150 Bar
- **Low volumes:** segments as small as 100 µL are routinely processed, conserving starting material during screening and optimization
- **Aggressive Reagents:** with Accendo's "Push" technology extremely aggressive reagents can be used
- **Automation:** reaction preparation (metering, mixing and reaction control)
- **Two Step Chemistry:** Conjure has two step chemistry capabilities, make your starting material online
- **High throughput:** with serial/parallel operation, 10 times better than other flow systems
- **Scaling:** milligram to gram quantities with no re-optimization of conditions
- **Online Analysis:** Both the Conjure and Propel can be integrated to online LCMS for real-time analysis



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