



The Asia Cold Systems have been specially defined to enable safe chemical reactions under cryogenic conditions (e.g. exothermic organometallic reactions).

The systems incorporate all the required parts for running reactions in continuous flow at temperatures down to -100°C . The Regular system uses a Tube Cooler with dry ice and acetone. The Advanced system centres on the Cryo Controller, an innovative and unique module able to cool down to -100°C using electric power only without the need for external cooling.

| | Regular | Advanced |
|--------------------|---|--|
| Flow rate | 1.0 $\mu\text{l}/\text{min}$ to 10ml/min [†] | |
| Pressure | 0 to 20bar [‡] | |
| System temperature | $-68^{\circ}\text{C}^{\diamond}$ to ambient | -100°C to $+250^{\circ}\text{C}$ |
| Pump channels | 2 | 4 |
| Chip Reactors | × | ✓ |
| Tube Reactors | ✓ | ✓ |
| Column Reactors | × | ✓ |
| Product collection | manual | automated |
| Pressurized inputs | ✓ | ✓ |
| Injection valves | 2 | 4 |
| Automation | × | ✓ |

[†] Depending on the syringe size. [‡] 10 bar when using fluoropolymer tube reactors. [◇] Depending on cooling solution.

Modules

Pressurized Input Store

Pressurizes four bottles with an inert gas enabling the use of air sensitive reagents and eliminates cavitation when pumping. Input pressure 1-10 bar, output pressure 1 bar.

Auto RIM

Includes two independent chemically resistant channels allowing reagents stored in racks of septum capped vials to be automatically aspirated and loaded into injection loops.

Reagent Injector

2 extremely chemically resistant injection valves with sample loops. 0.1ml, 1ml, 5ml or 10ml, manual or automated control, 0 to 20 bar. Ideal for rapid reaction optimisation.

Heater and Chip

This module has adaptors that can be changed in seconds to heat the full asia range of reactors. Temperature range from room temperature to 250°C.

FLLEX

The Flow Liquid Liquid EXtraction (FLLEX) offers continuous flow aqueous work up. Internal volume 100µl. FLLEX can be used anywhere within the flow setup.

Pressure Controller

Automatically pressurizes the reaction up to 20bar (300psi) for ultra-fast reaction rates and control of gas/liquid reactions.

Automated Collector

Allows automated collection of multiple reactions in separate vials or vessels. Waste is automatically diverted.

Asia Manager Software

Easy to use for total 'walk-away' control of the Asia System.

Syringe Pump

Extremely chemically resistant continuous flow pumps for ultra smooth flow. Flow rate from 1µl/min to 10ml/min each, 20 bar, pressure sensor.

Cryo Controller

Rapidly cool a selection of fluoropolymer or stainless steel tube reactors to -70°C or a range of glass or quartz microreactors to -100°C. Requires only mains power, no need for cryogenic media.

Sampler and Dilutor

Enables on-line reaction analysis by automated sample extraction, dilution and transfer to an analytical system e.g. LCMS or UPLC. Dilution factor: 5 to 250.

FLUX - Flow Electrochemistry

Enables a wide range of electrode materials to be changed in seconds. No tools. Includes a power supply and electrochemical flow cell with minimal electrode gap. Internal reaction volume 225µl.

Chip Climate Controller

Enables glass microreactors to be cooled or heated from -15°C to +150°C - no need for circulator or cold water supply.

