

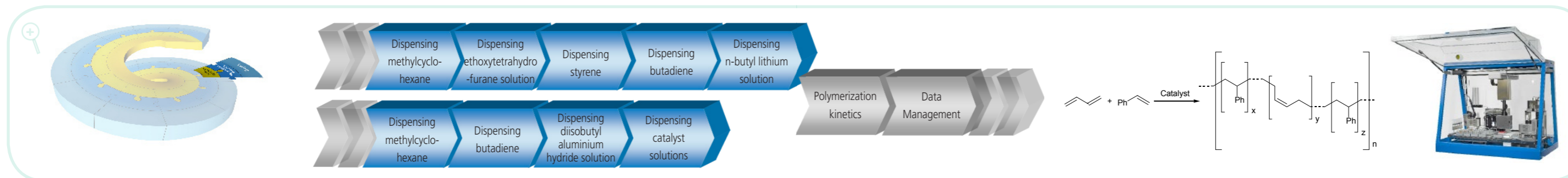
SWING LIQUID GAS RP

from concepts to success

- Automated polymerization screening of liquefied monomers -



from concepts to success



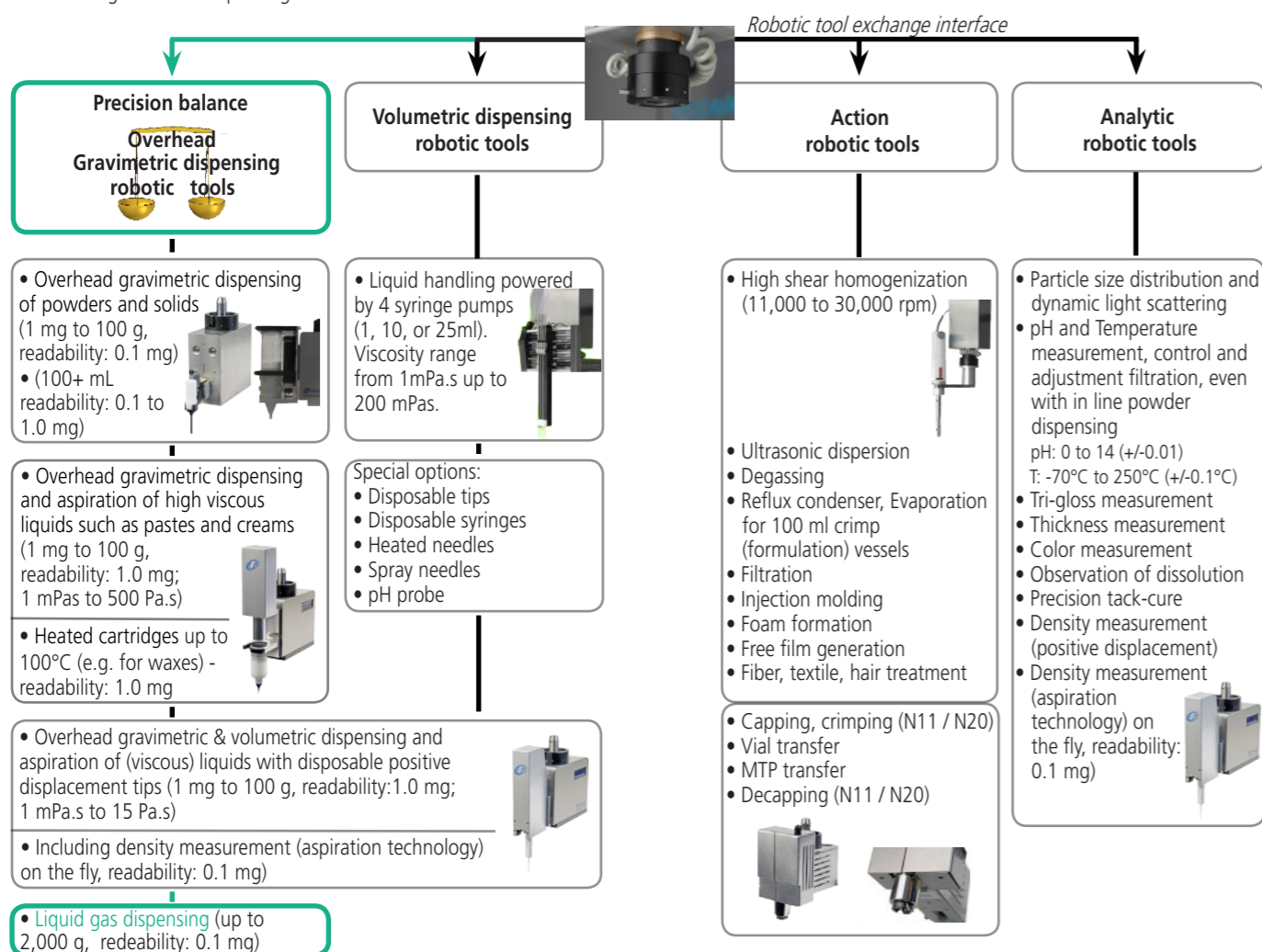
SWING LIQUID GAS RP, a modular robotic platform for automated polymerization screening of liquefied monomers

SWING LIQUID GAS RP is a software-driven robotic platform designed for high throughput automation of substance handling tasks. The instruments' unique design accommodates several tools that can be automatically exchanged during a run.

- SWING LIQUID GAS RP brings paradigm shifting modularity enabling an easy to use workflow task driven software
- Exchangeable robotic tools such as gravimetric dispensing of liquefied gases (butadiene)
- Unrivaled gravimetric dispensing technology
- Accurate dispensing of any material: liquids, solids, powders, high-viscous to low-viscous materials, waxes etc.
- Self-contained workstation for working with hazardous chemicals under controlled inert atmosphere (butadiene, isoprene, metalorganics)
- A large choice of hardware and software tools allow fine tuned adaptation to your workflow
- (also available!) Simultaneous double check of every dispense with **two independent analytical balances**

Exchangeable robotic tools & unrivaled gravimetric dispensing technology

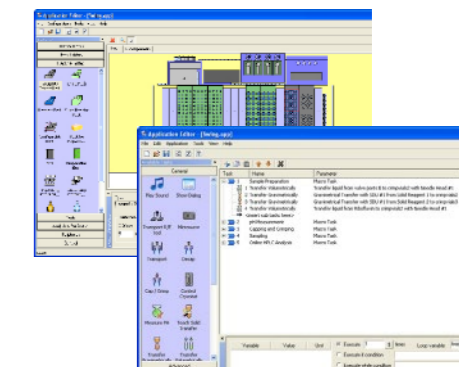
More than 30 features can be delivered with Chemspeed's unique robotic tool exchange technology, including unrivaled overhead gravimetric dispensing tools.



Powered by AutoSuite SWING LIQUID GAS RP user interface

AutoSuite SWING POWERDOSE is an intuitive user interface software which allows easy workflow orientated programming. Many features such as the gravimetric dispensing steps are automatically calibrated, eliminating tedious optimisation steps.

- The **AutoTeaching** tool simplifies the use of the liquid gas (as well for viscous liquids, waxes, solids etc.) dispensing task, eliminating the need for manual optimization
- Easy programming: drag-and-drop of formulation workflow steps
- Barcode tracking
- Smooth integration into Chemspeed's workflow management software (see reverse)
- AutoSuite Application Programming Interface (API): for 3rd party software and hardware integration, and standard integration of Spotfire, JMP, VirtualLab etc.



Unattended automated reaction preparation for polymerization screening of liquefied monomers such as butadiene in disposable reactors

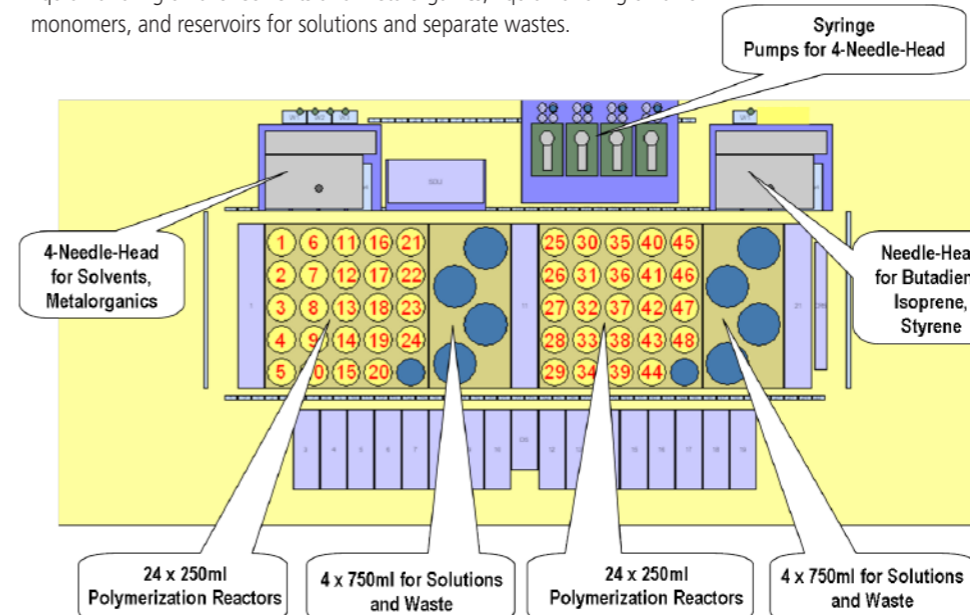
Chemspeed's SWING LIQUID GAS RP deck modularity allows the user to perform flexible fully unattended reaction preparation in disposable reactors for subsequent polymerization screening.

- Gravimetric or volumetric dispensing of monomers such as butadiene, isoprene, and styrene into disposable reactors
- Gravimetric or volumetric dispensing of solvents and metalorganics into disposable reactors
- Flexible accommodation to different solvents, metalorganics, and monomers
- Flexible accommodation to different disposable reactor formats
- Self-contained working environment with glove-box, air-lock, O2 and CHx monitoring for safety and inert atmosphere



Disposable polymerization reactor

Example of a tray configuration with 50 disposable polymerization reactors, liquid handling unit for solvents and metalorganics, liquid handling unit for monomers, and reservoirs for solutions and separate wastes.



Dispensing robotic tool for solvents, metalorganics, monomers such as butadiene, isoprene, styrene



Integrated balance module for gravimetric dispensing of e.g. butadiene



Accessories

All tools and accessories of Chemspeed's Sweigher, Swave, Synthesizer SLT II, AutoPlant, Formax, Applicator and Investigator are fully compatible with the **SWING LIQUID GAS RP** robotic platform and vice versa (see the high output product development spiral below). Please refer to Chemspeed's other workflow brochures for modularity examples.

- Analytical balances for gravimetric dispensing
- Analytical interfaces for GC and HPLC
- Variety of reagent racks
- Tailor-made customer care package



High output product development spiral

Chemspeed's AutoSuite workflow management software integrates with:

1. Chemspeed's robotic platforms such as

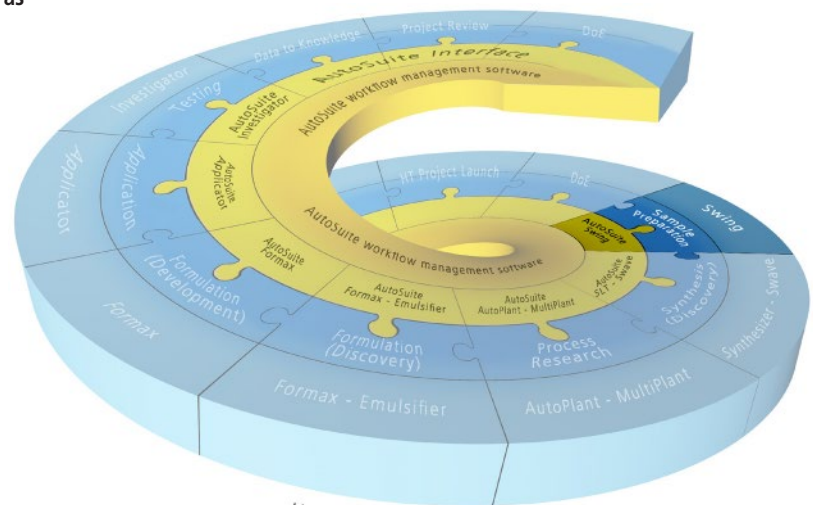
- Sample preparation instruments
- Synthesis instruments
- Process research instruments
- Formulation instruments
- Application instruments
- Testing instruments

2. Third party instruments

Chemspeed integrates a vast number of 3rd party components (e.g. in robotic tools) and 3rd party instruments. Please refer to other Chemspeed brochures or contact your Chemspeed representative.

3. Third party software such as

- SpotFire (data visualization and selection)
- JMP (design of experiments - DoE)
- VirtualLab (lab journal, workflow management, instrument control)
- and many other laboratory software through industry standard languages (SQL, .net, C#, etc)



Hardware - Software - Logistics
Chemspeed Technologies offers all.

