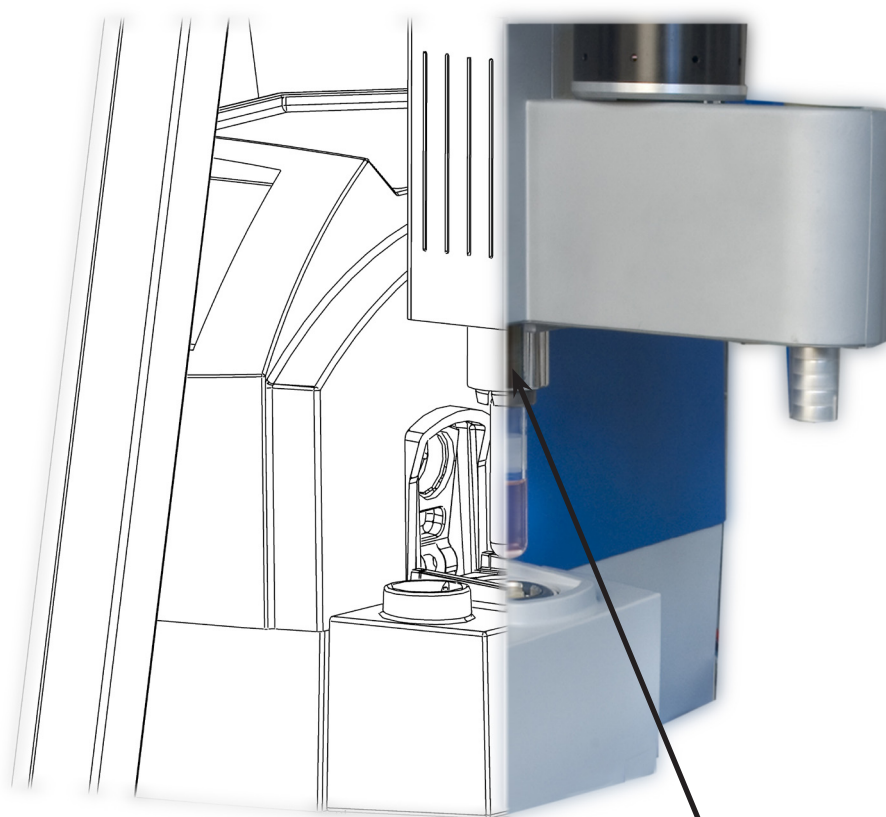


SWAVE

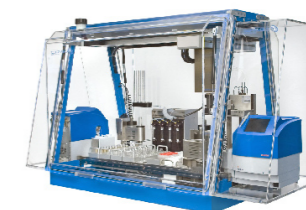
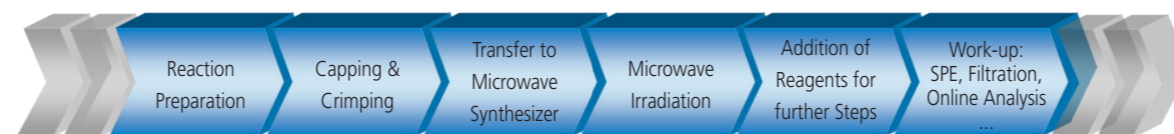
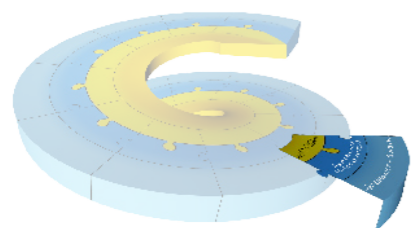
from concepts to success

- Fully automated microwave assisted synthesis -
(batch AND continuous)



Vial gripping into
the microwave cavity

from concepts to success



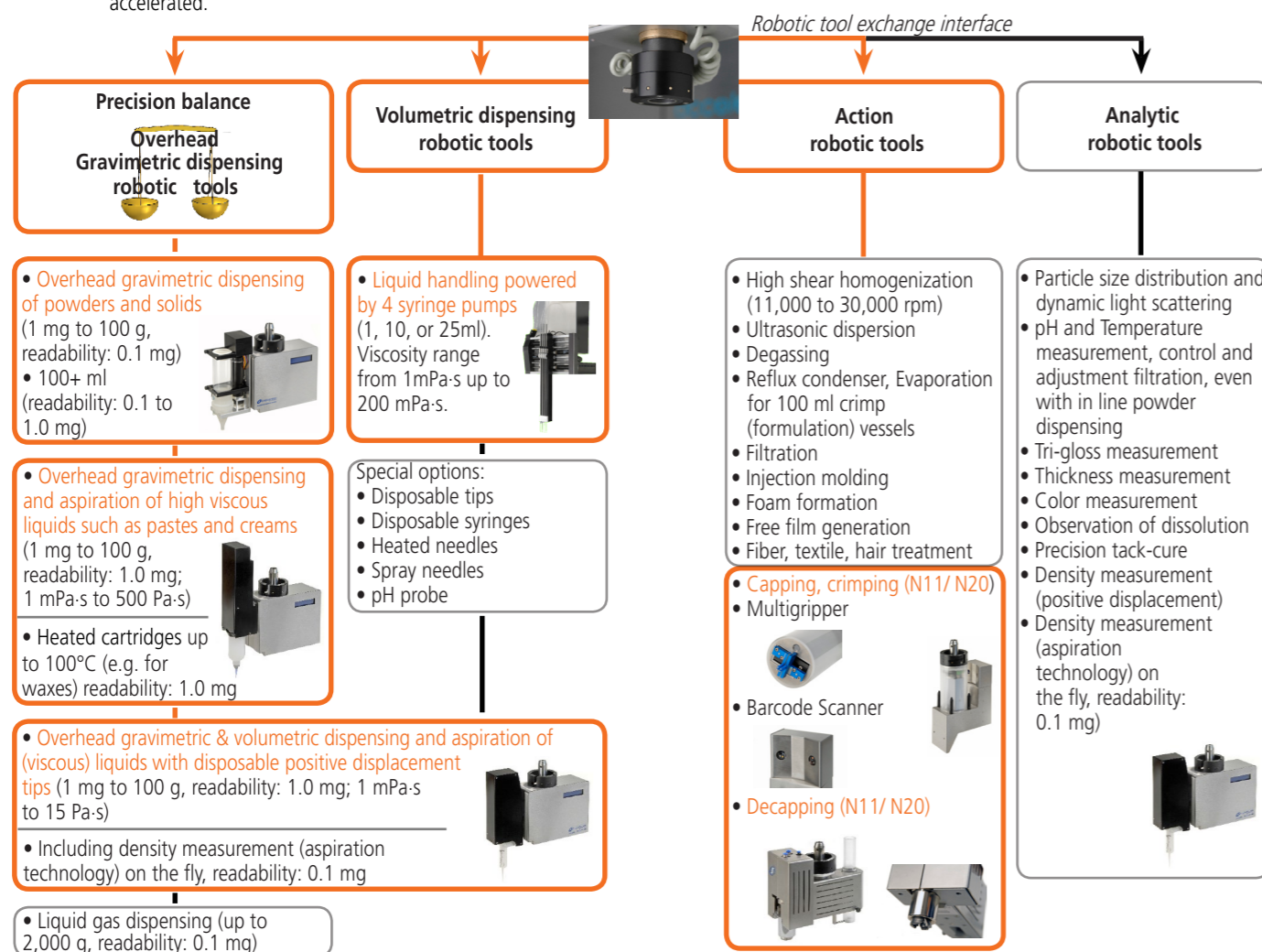
SWAVE, a modular robotic platform for high-throughput microwave assisted synthesis

SWAVE is Chemspeed's software-driven robotic platform designed for automated microwave-assisted synthesis workflows. The platform combines Chemspeed's unique range of robotic tools with the renowned microwave technology of Biotage. Fast, safe, easy and unattended - doing microwave chemistry the Chemspeed way! Primary applications: Library synthesis, Hit-to-lead, Lead optimization, Polymer synthesis, Material synthesis.

- SWAVE brings paradigm shifting modularity enabling an easy to use workflow task driven software
- Exchangeable robotic tools
- Unrivaled gravimetric dispensing technology
- Microwave synthesis technology (batch AND continuous)
- A large choice of hardware and software tools allow fine tuned adaptation to your workflow

Unrivaled gravimetric dispensing technology & exchangeable robotic tools

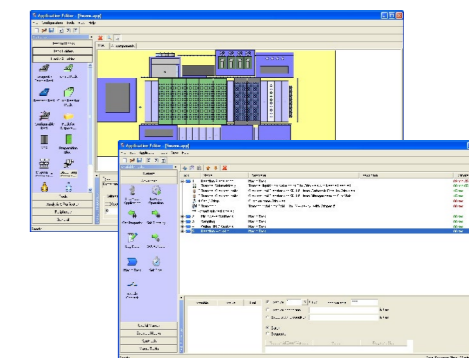
More than 30 features can be delivered with Chemspeed's unique robotic tool exchange technology, including unrivaled overhead gravimetric dispensing tools. Dispensing solids is as convenient and accurate as dispensing liquids. The product development R&D cycle is accelerated.



Powered by AutoSuite SWAVE user interface

AutoSuite SWAVE 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 solid (as well for powders, high viscous liquids, viscous liquids, waxes, etc.) dispensing task, eliminating the need for manual optimization
- Easy programming: drag-and-drop 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.



Modular platform deck

Chemspeed is able to dispense any type of compound into any type of container (vial, microtiter plates, bottles, reactors, formulation vessels etc.)

(Please refer to other Workflow Brochures)

A microwave-assisted synthesis workflow can be entirely automated on Chemspeed SWAVE robotic platform. Everything can be performed on the same platform, from:

- dispensing of solid & liquid reagents & solvents under inert atmosphere
- capping / crimping
- vial gripping and transfer
- sampling
- decapping
- work-up and purification of reaction mixtures
- use of batch and continuous flow microwave reactor within one protocol

Biotage Initiator™ EXP Microwave Synthesizer

- Single mode microwave system with uniform heat distribution, and accurate temperature and pressure control
- Optimum safety and reliability
- Access to large database of established methods for microwave synthesis (more than 3'600 methods)
- Second microwave synthesizer optional



Unique solid dispensing technology: extruder screw rotates within the cap to dispense the solid. Various types of extruders to suit diverse solid properties, or other custom design.



Large range of reaction volumes

- Minimum volume of 0.2 ml convenient for screening tests
- Maximum volume of 20 ml allowing gram-scale synthesis
- Reaction vial individually equipped with a magnetic bar for efficient mixing



Multi-step synthesis capabilities: Access to the crimped vial directly in the microwave cavity for automated reagent addition or for intermediate sampling.



Automated work-up and analysis:

- Solid-phase extraction on standard SPE cartridges
- Filtration
- Liquid / liquid extraction (option)
- Sampling for online analytics (e.g. GC or HPLC) or kinetics measurement



Accessories

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

- Second microwave
- Interface to Analytics (HPLC, MS)
- Cleaning module
- Tailor-made customer care module



High output product development spiral

Chemspeed's AutoSuite workflow management software integrates with:

1. All of Chemspeed's robotic platforms such as

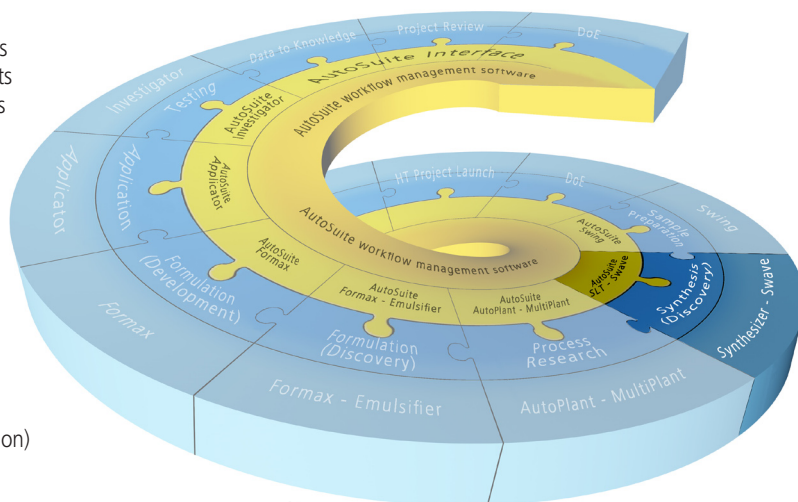
- Sample preparation workflows/ instruments
- Parallel array synthesis workflows/ instruments
- Parallel process research workflows/ instruments
- High output formulation workflows/ instruments
- High output application workflows/ instruments
- High output testing workflows/ instruments

2. Third party instruments

Chemspeed integrates a vast number of 3rd party components (e.g. in robotic tools). Please refer to Chemspeed's Workflow Portfolio brochure and/ or contact your Chemspeed's representative.

3. Third party software such as

- SpotFire (premium 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.

