SWING WAXDOSE

from concepts to success

- Automated Waxes Dispensing -
Precision, Accuracy, Speed, Traceability

HYBRID & BREAKTHROUGH TECHNOLOGY: NEW MULTIPLE USE CARTRIDGE!

CHEMSPEED® TECHNOLOGIES

Wax sampling for aging

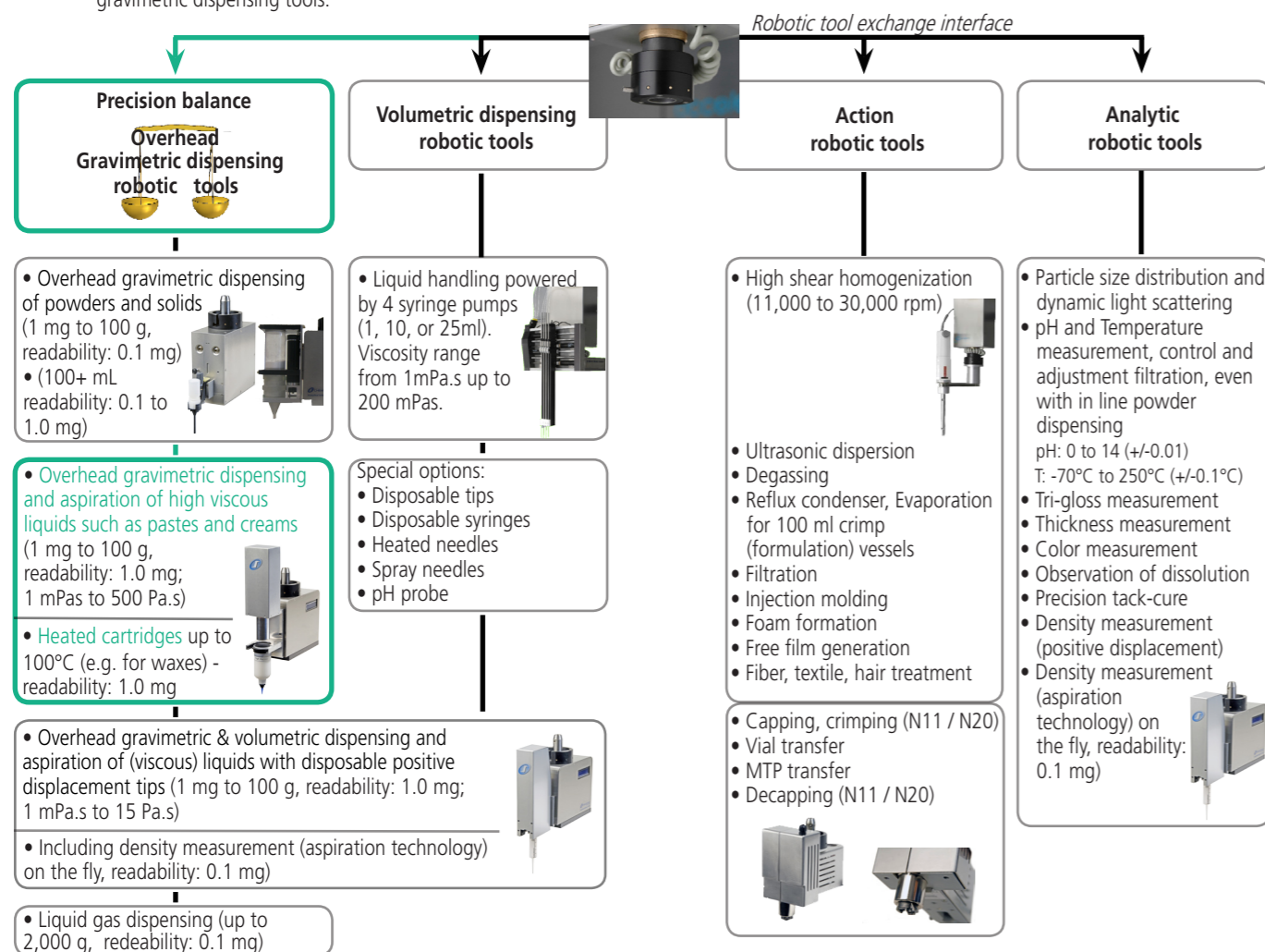| Dispensing Oil | Heating | Dispensing Solid | Dispensing Wax at 90°C | Dispensing Fragrance | Transfer to Bottle at 90°C | Bottle at 25°C |

Wax sampling for aging
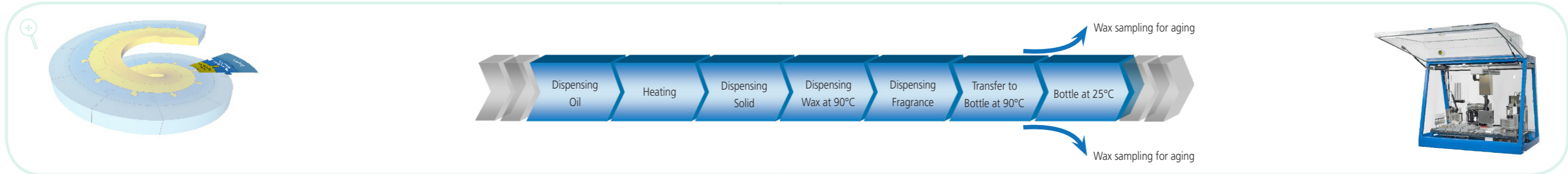
SWING WAXDOSE, a modular robotic platform for automated wax dispensing tasks with a variety of further options

SWING WAXDOSE **is a software-driven robotic platform designed for high throughput viscous materials dispensing tasks. It increases versatility, improves R&D costs savings, avoids tedious and repetitive tasks in production facilities, and significantly increases the level of performance. You are able to dispense gravimetrically any type of waxes (from milligrams to multigrams) into any type of containers such as vials, microtiter plates, bottles, beverages, tubes, reactor blocks, formulation vessels etc.**

- *SWING WAXDOSE* brings paradigm shifting modularity enabling an easy to use workflow task driven software
- Exchangeable robotic tools
- Unrivaled gravimetric dispensing technology directly into the target including an anti-drip system which avoids cross contamination!
- Designed to be used with any type of containers such as vials, MTP microplates, bottles, tubes, reactor blocks etc.
- A large choice of hardware and software tools allow fine tuned adaptation to your workflow
- From low viscous (e.g. water) to highly viscous materials (500 Pa.s)
- (also available!) Simultaneous double check of every dispense with two independent analytical balances

Unrivaled gravimetric dispensing of powders and other exchangeables robotic tools

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

Robotic tool exchange interface

| Precision balance Overhead Gravimetric dispensing robotic tools | Volumetric dispensing robotic tools | Action robotic tools | Analytic robotic tools |

- Overhead gravimetric dispensing of powders and solids (1 mg to 100 g, readability: 0.1 mg)
- (100+ mL readability: 0.1 to 1.0 mg)

- Overhead gravimetric dispensing and aspiration of high viscous liquids such as pastes and creams (1 mg to 100 g, readability: 1.0 mg; 1 mPas to 500 Pa.s)
- Heated cartridges up to 100°C (e.g. for waxes) - readability: 1.0 mg

- Overhead gravimetric & volumetric dispensing and aspiration of (viscous) liquids with disposable positive displacement tips (1 mg to 100 g, readability: 1.0 mg; 1 mPa.s to 15 Pa.s)
- Including density measurement (aspiration technology) on the fly, readability: 0.1 mg)
- Liquid gas dispensing (up to 2,000 g, redeability: 0.1 mg)

- Liquid handling powered by 4 syringe pumps (1, 10, or 25ml). Viscosity range from 1mPa.s up to 200 mPas.

Special options:
- Disposable tips
- Disposable syringes
- Heated needles
- Spray needles
- pH probe

- High shear homogenization (11,000 to 30,000 rpm)

- Ultrasonic dispersion
- Degassing
- Reflux condenser, Evaporation for 100 ml crimp (formulation) vessels
- Filtration
- Injection molding
- Foam formation
- Free film generation
- Fiber, textile, hair treatment

- Capping, crimping (N11 / N20)
- Vial transfer
- MTP transfer
- Decapping (N11 / N20)

- Particle size distribution and dynamic light scattering
- pH and Temperature measurement, control and adjustment filtration, even with in line powder dispensing pH: 0 to 14 (+/-0.01) T: -70°C to 250°C (+/-0.1°C)
- Tri-gloss measurement
- Thickness measurement
- Color measurement
- Observation of dissolution
- Precision tack-cure
- Density measurement (positive displacement)
- Density measurement (aspiration technology) on the fly, readability: 0.1 mg)

Powered by *AutoSuite SWING WAXDOSE* user interface

AutoSuite SWING WAXDOSE 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 wax (powders, oils, pastes, creams, viscous liquids 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 sofware and hardware integration, and standard integration of Spotfire, JMP, VirtualLab etc.
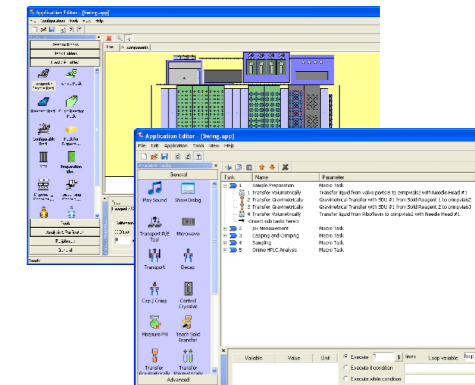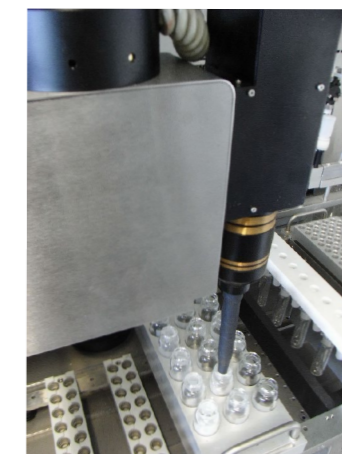
Modular platform deck: vial, microtiter plates, bottles, tubes etc.

Chemspeed is able to dispense any type of compound into any type of container (vial, microtiter plates, bottles, reactors, formulation vessels etc.)
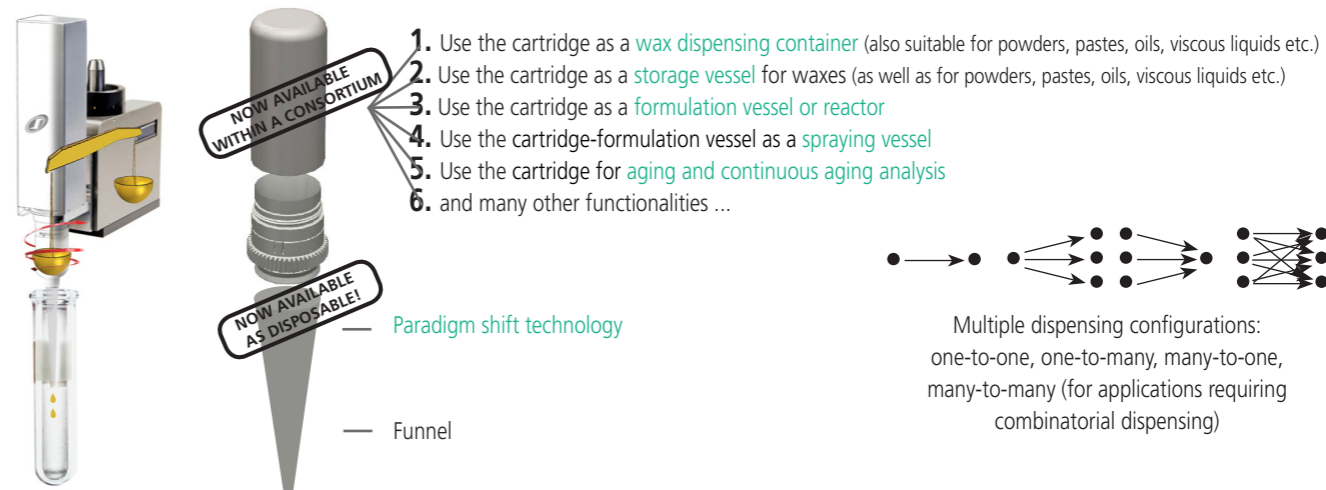*(Please refer to other Workflow Brochures)*

Built-in balance in robotic tools - Allows accurate and precise gravimetric dispensing of waxes (readability down to 1.0 mg):
- Dispensing range from milligrams to multigrams (container size up to 130 mL)
- Typical dispensing time: 1g in 20 sec (depending on requested accuracy and wax properties)
- Dispensing of any waxes morphology: liquid transfer flexibility from water to melted waxes
- Dispensing into any type of vial, bottle, 96 well-plates, tubes, fomulation vessels, reactors etc.
- Waxe dispensing robotic tool capacity: up to 80 cartridges of 130 mL each
- Reduced dispensing time: the balance moves from one target to the next, continuously dispensing and weighing without having to move the target to the balance. The anti-drip system avoids cross contamination and enables to add waxes or any other material into any (fixed) formulation vessel, reactor, vial etc. wherever on the platform deck while stirring, heating, cooling etc.
- New: Multiple cartridge functionalities according to your needs! (dispensing container, storage vessel, formulation vessel, reactor etc.)
- One dispensing design and one AutoTeaching tool to cover all your waxes
- Automatic exchange of a dispensing cartridge if one is empty
- The software finds automatically the best conditions to dispense your wax

Heated cartridges
(up to 100°C)

1. Use the cartridge as a wax dispensing container (also suitable for powders, pastes, oils, viscous liquids etc.)
2. Use the cartridge as a storage vessel for waxes (as well as for powders, pastes, oils, viscous liquids etc.)
3. Use the cartridge as a formulation vessel or reactor
4. Use the cartridge-formulation vessel as a spraying vessel
5. Use the cartridge for aging and continuous aging analysis
6. and many other functionalities ...

NOW AVAILABLE WITHIN A CONSORTIUM

NOW AVAILABLE AS DISPOSABLE!

Paradigm shift technology

Funnel

Multiple dispensing configurations: one-to-one, one-to-many, many-to-one, many-to-many (for applications requiring combinatorial dispensing)

Accessories

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

Many upgrade options such as:
• High performance reactor array technology
• Analytical interfaces
• Automated tool heads (up to 36)
• Shakable and heatable racks
• High performance formulation vessels (even fully conditioned)

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 Worfklow 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)
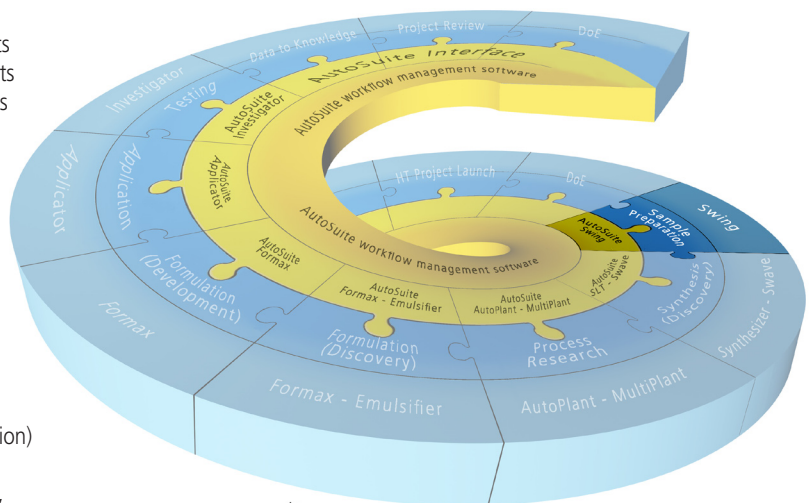
Harware - Software - Logistics
Chemspeed Technologies offers all.