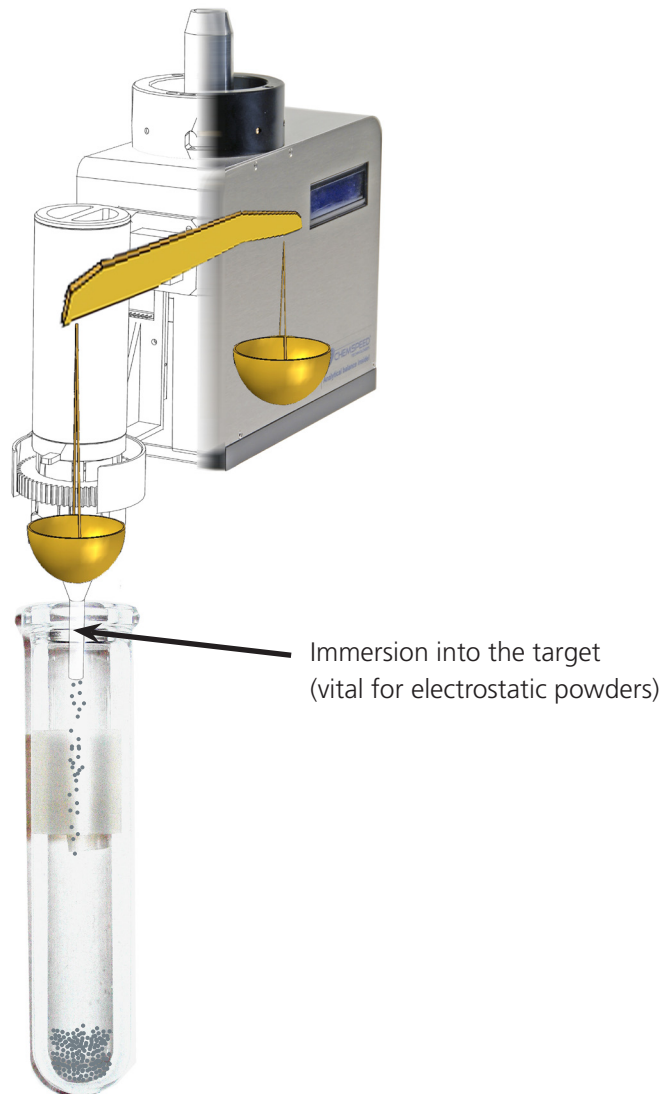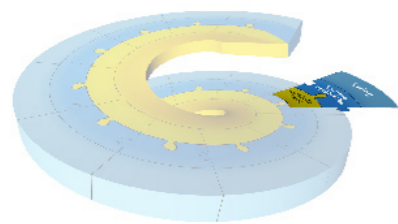# *SWING MEDTECH*

from concepts to success

- Accurate dispensing & blending of powders within highly demanding quality controlled environments (21 CFR part 11 compliant) -

Immersion into the target
(vital for electrostatic powders)

CHEMSPEED® TECHNOLOGIES

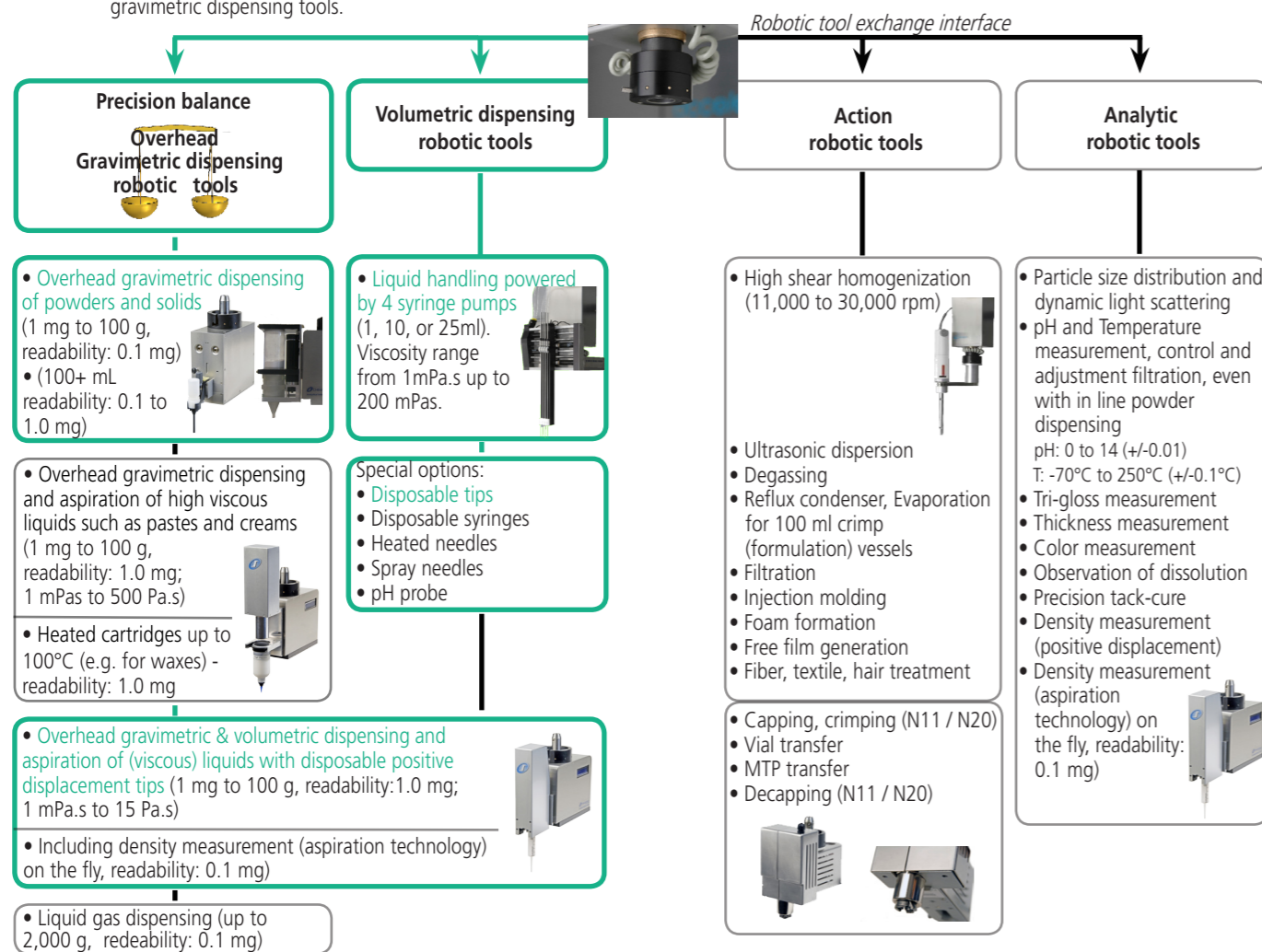| 21 CFR part11 compliance	Clean room compliance	Barcode	Automated dispensing of different solids within defined tolerances	Mix

SWING MEDTECH, a modular robotic platform for accurate dispensing & blending of powders (21 CFR part11 compliant)

SWING MEDTECH is a software-driven robotic platform designed for high throughput dispensing & blending of powders in Biomedical, Biotech, Pharmaceutical production facilities (21 CFR part 11 compliant). 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 any powder with virtually any flow properties (e.g. sticky powders from milligrams to multigrams) into any type of containers such as vials, microtiter plates, bottles, beverages, tubes, reactor blocks etc.

- SWING MEDTECH brings paradigm shifting modularity enabling an easy to use workflow task driven software
- Exchangeable robotic tools
- Compatible with any powder flow properties: from low-density to free-flowing
- Unrivaled gravimetric dispensing technology directly immersing 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
- (also available!) Simultaneous double check of every dispense with two independent analytical balances

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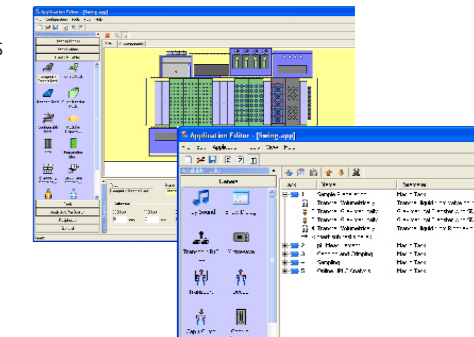
More than 30 features can be delivered with Chemspeed's unique robotic tool exchange technology, including unrivaled overhead gravimetric dispensing tools.

Robotic tool exchange interface

Precision balance
Overhead Gravimetric dispensing robotic tools

- 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)

Volumetric dispensing robotic tools

- 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

Action robotic tools

- 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)

Analytic robotic tools

- 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 MEDTECH* user interface

AutoSuite SWING MEDTECH 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 & powder (as well for viscous liquids, waxes 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.
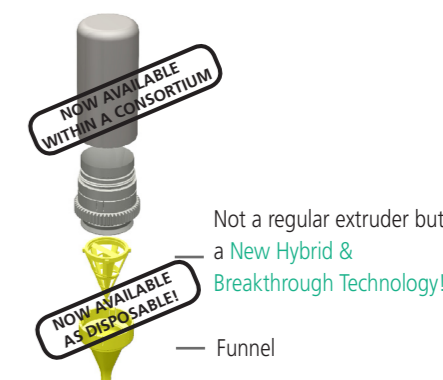
Modular platform: accurate overhead dispensing of powders & blending performances

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)

SWING MEDTECH is by design a glove-box for dispensing under specific atmospheres and is designed to automate the complete sample preparation workflows in biomaterials applications industries. **SWING MEDTECH** is Chemspeed's robotic platform for the preparation and control of biomaterials in production clean rooms facilities. The robotic platform ensures reproducibility, accuracy and data logging of the powder dispensing operations. It also has an integrated powder mixing device and fulfills a pivotal condition of its tools biocompatibility with the dispensed biomaterials.

Built-in balance in robotic tools - Allows accurate and precise gravimetric dispensing of powders (readability down to 0.1 mg, optional down to 0.01 mg):
- 21CFR part11 compliance
- Fulfills clean room requirements
- Dispensing range from milligrams to multigrams (container size up to 130 mL)
- Typical dispensing time: 1g in 20 sec (depending on powder flow properties)
- Dispensing of any solid morphology: from low-density to free flowing
- Dispensing into any type of vial, bottle, 96 well-plates, tubes, fomulation vessels, reactors etc
- Efficient mixing of the final combinations
- Automated cleaning of the mixing module
- Tracking of the logged data to ensure the fulfillment of the defined powder dosing accuracies
- Powder 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 powder 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 extrusion design and one AutoTeaching tool to cover all your powders & sticky powder like materials
- Automatic exchange of a dispensing cartridge if one is empty
- The software finds automatically the best conditions to dispense your powder
- Two independant analytical balances to double check every dispense

NOW AVAILABLE WITHIN A CONSORTIUM

NOW AVAILABLE AS DISPOSABLE!

Not a regular extruder but a New Hybrid & Breakthrough Technology!

— Funnel

1. Use the cartridge as a powder dispensing container (also suitable for waxes, high viscous liquids etc.)
2. Use the cartridge as a storage vessel for powders (as well as for waxes, high 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 ...

Accessories

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

- Large choice of sample and reagent customized racks
- Automated powder mixing module
- Tailor-made customer care package

High output product development spiral

Chemspeed's AutoSuite workflow management software integrates with:
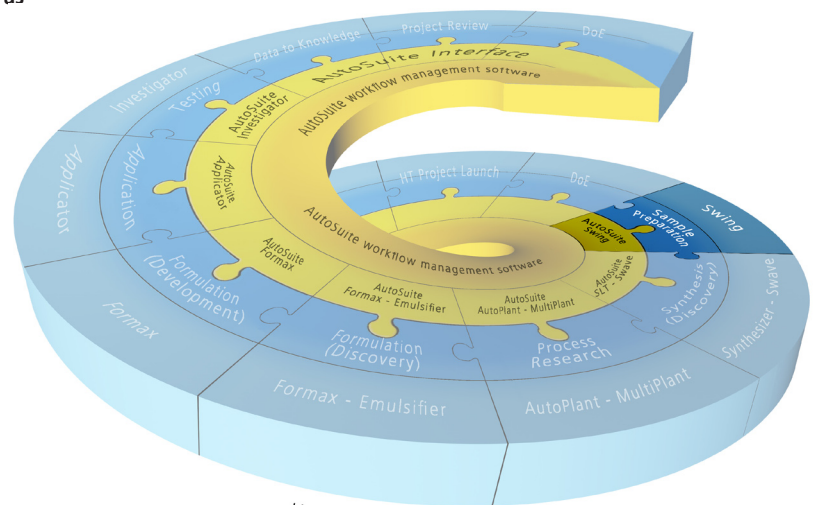
1. Chemspeed's robotic platforms such as
- Sample preparation instruments
- Synthesis instruments
- Process research instruments
- Formulation instruments
- Application instruments
- Testing instruments

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)

Harware - Software - Logistics
Chemspeed Technologies offers all.

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