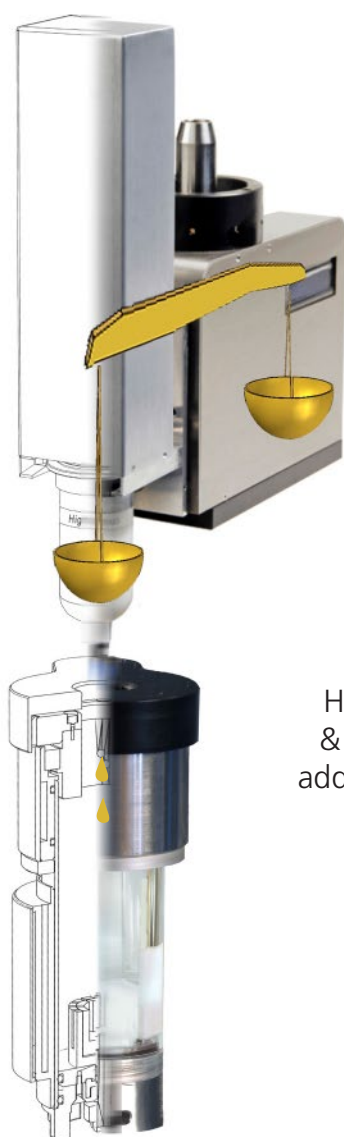


FORMAX[®] SKIN **& SUNSCREEN** (e.g. Personal Care)

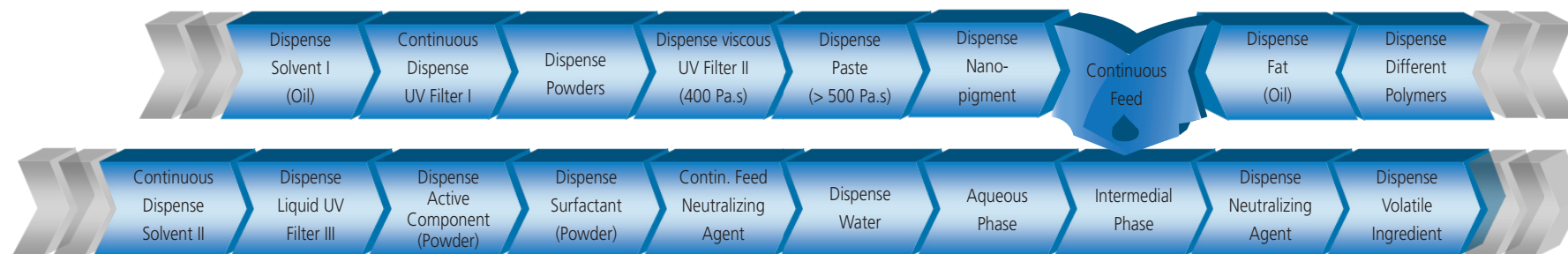
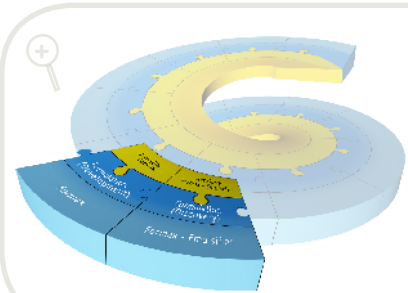
from concepts to success

- Stay competitive by faster and better mapping of both ingredients space and process space -



Highly efficient mixing
& reactor control while
adding gravimetrically any
compound!

from concepts to success



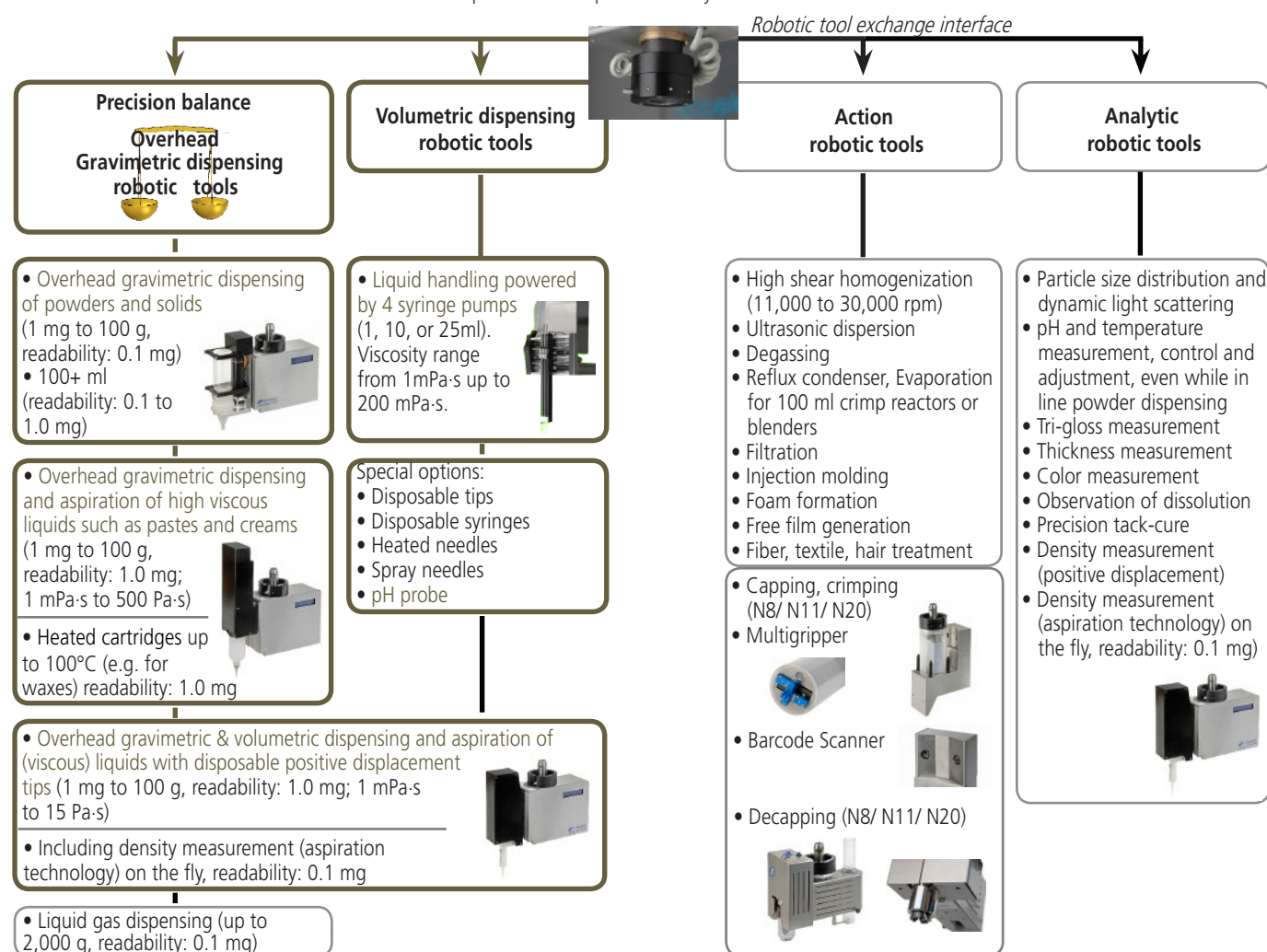
FORMAX[®] SKIN & SUNSCREEN, a modular robotic platform enabling quality formulations for skin care and sunscreen

FORMAX[®] SKIN & SUNSCREEN (e.g. Personal Care) is Chemspeed's software-driven robotic platform for challenging formulation workflows in the cosmetics industry.

- FORMAX[®] SKIN & SUNSCREEN (e.g. Personal Care) brings paradigm shifting modularity enabling an easy to use workflow task driven software
- Exchangeable robotic tools
- Unrivaled gravimetric dispensing technology while mixing & scraping, heating, refluxing, and cooling
- High quality, flexible and modular formulation vessels
- A large choice of hardware and software tools allow fine tuned adaptation to your workflow

Unrivaled gravimetric dispensing technology & exchangeable robotic tools

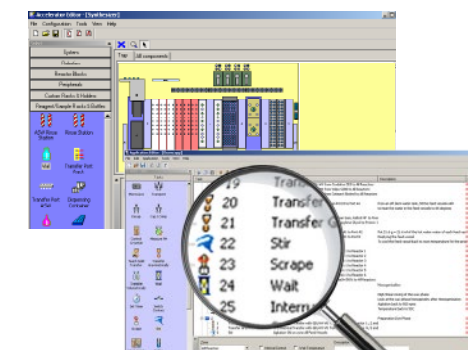
More than 30 features can be delivered with Chemspeed's unique robotic tool exchange technology, including unrivaled overhead gravimetric dispensing tools while mixing & scraping, heating, refluxing and cooling. Generating and analysing complex formulations becomes more efficient and accelerates the product development R&D cycle.



Powered by AutoSuite FORMAX[®] SKIN & SUNSCREEN user interface

AutoSuite FORMAX[®] SKIN & SUNSCREEN 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 allows to dispense solids, liquids, viscous liquids, and waxes without manual optimizing steps, and with high precision, accuracy and speed
- 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 (standard integration of Spotfire, JMP, VirtualLab etc. as well as many instruments listed on the reverse page)



High-performance formulation vessels for e.g. accurate fine-tuning of structure

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

Chemspeed's FORMAX[®] SKIN & SUNSCREEN (e.g. Personal Care) deck-modularity allows the user to perform complex formulation workflows for skin care & sunscreen in a fully automated fashion: addition of virtually any type of ingredients (solid, (viscous) liquid, paste, wax etc.) while mixing & scraping, heating, refluxing, and cooling, in-line analysis, control and much more. High quality is assured by e.g. accurate viscosity, pH, temperature and stirring control.

Precision formulation vessels technical specifications:

- Individual powerful stirring for each precision formulation vessel for highest mixing, dissolving, emulsification power
- Agitation up to 6,000 rpm or 600+ rpm at 1,000 Pa.s even during gravimetric addition of highly viscous reagents or powders
- Conveniently exchangeable scrapers for maximum formulation quality (from 20 to 200 rpm)
- Continuous feed pumps & feed vessels
- Various stirrer designs: dissolver disk, rotor-stator etc.
- PT100 internal and external temperature control +/-0.1°C
- Independent electrical and fluidic heating / cooling systems for highest accuracy (-70 to 250°C +/-0.1°C)
- Precision calorimetry measurement (in precision calorimetric probe 1W)
- Viscosity measurement / Rheometry
- pH measurement and control
- Vacuum connections for degassing, extraction, evaporation
- Different gas supplies (e.g. inert or other gases)
- Large choice of pre-formulation vessels (magnetically stirred, shaken, heated, cooled vessels, reactors, high pressure reactors, disposable vials, etc.)



Overhead gravimetric dispensing of paste while mixing, heating and cooling



Overhead gravimetric dispensing of solid while mixing, heating and cooling in precision formulation vessel



Expanded view of the precision formulation vessel/ blender: scraper, reflux condenser & measurement unit



Cartridges to dispense pastes and high viscous liquids (optional aspiration and heating for e.g. hot transfer)



Various stirrer designs: rotor-stator and dissolver disk



Controlled stirrer, emulsion & precision formulation vessel



Accessories

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

- Formulation adjustment and analysis module: viscosity measurement / adjustment and viscosity control; formulation homogeneity determination; sample aging kit
- Pre-formulation vessels and sample preparation accessories: racks (heatable stirred, stock solution etc.); solvent reservoirs; disposable (process) vials; microplate holders
- Application module: different substrates for automated film formations, UV & heat gradients
- Testing module: DMTA, colour, gloss etc.
- Conditioned sample chamber for stability and aging testing
- Cleaning module
- Tailor-made customer care module
- Many tools, including precision formulation vessels and storage/ ageing dispensing cartridges are optionally available as disposables



High output product development spiral

Chemspeed's AutoSuite workflow management software integrates with:

1. All of Chemspeed's robotic platforms for

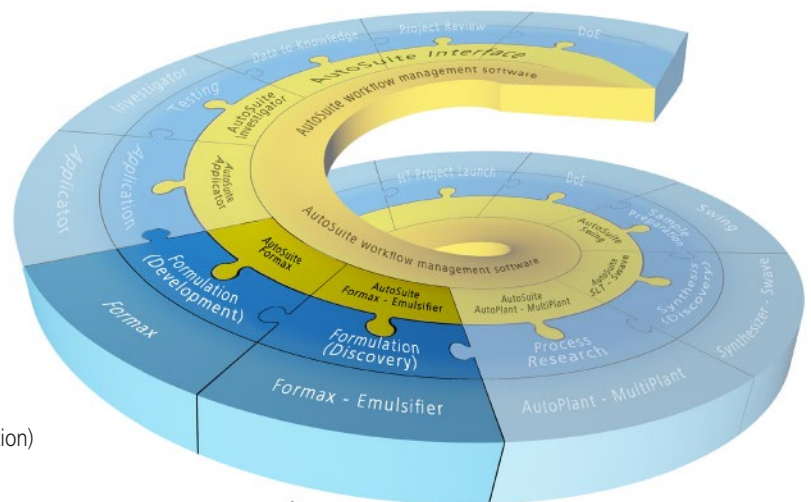
- Sample preparation workflows
- Parallel array synthesis workflows
- Parallel process research workflows
- High output formulation workflows
- High output application workflows
- High output testing workflows

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.

