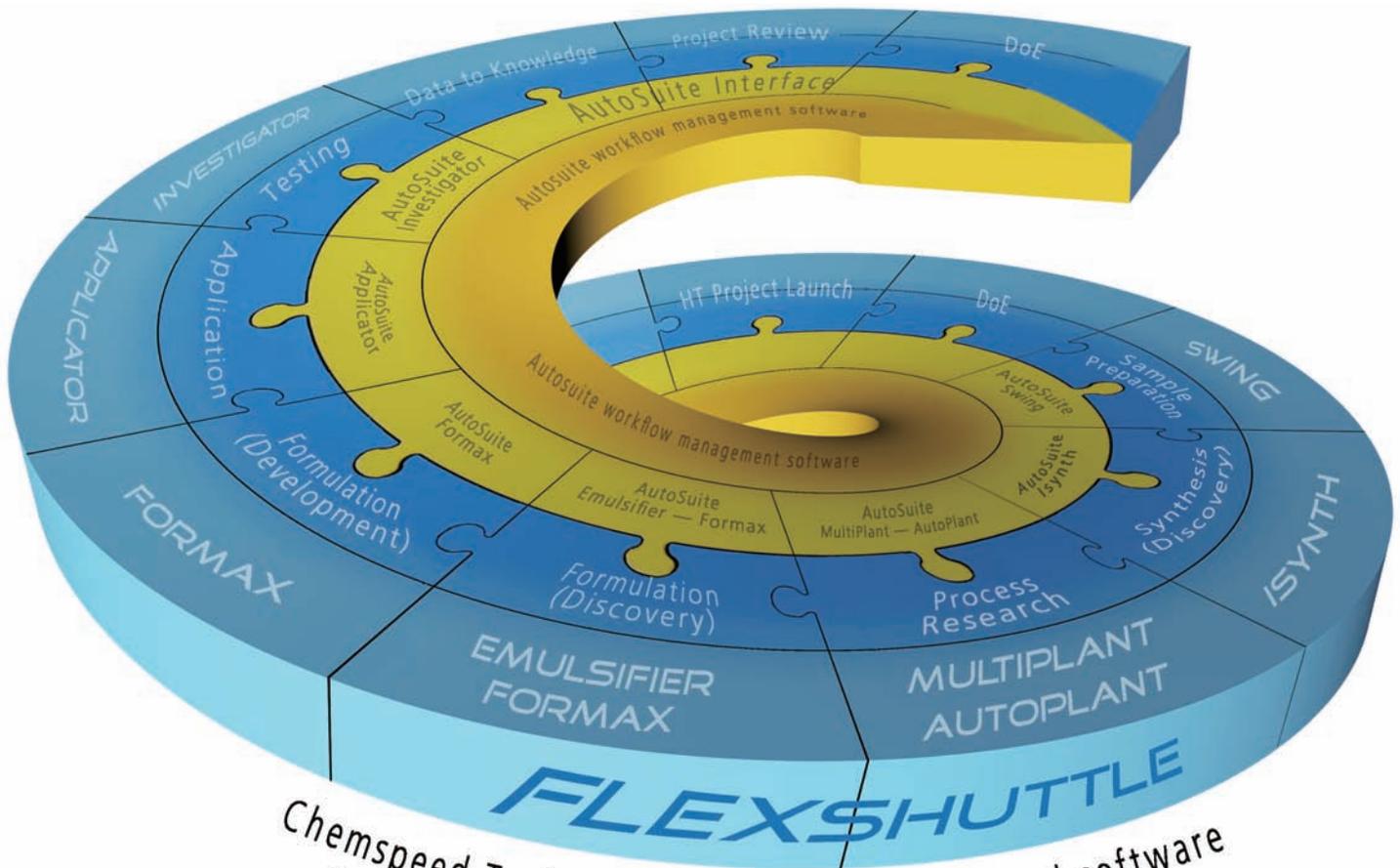


WORKFLOW PORTFOLIO

- Chemspeed Solutions cover Every Step in the Product Development Cycle -



Chemspeed Technologies offers hardware and software for every step in the product development cycle

Robustness and Ease-of-Use by Design

Chemspeed's:

- **unique dimension of exchangeable robotic tools**
- **overhead gravimetric dispensing**
- **precision reactors and formulation vessel technology**

enable a paradigm shift in automated Research & Development of new and better products!

Chemspeed Technologies is the leading provider of Automated High-Throughput and High-Output Solutions that enhance Efficiency and Productivity for Experimental Workflows.

Chemspeed's unique modular and flexible concept of robotic tools, reactors and vessels, application tools, integration of e.g. analytical instruments as well as software, allows you to adapt perfectly an automated platform to your workflow needs and to significantly increase the throughput and quality (= Output). Virtually any combination of Chemspeed's functionalities can be easily configured on one robotic platform.

All of Chemspeed's robotic platforms can be easily integrated with one another to enable multi-workflow processes (e.g. Formulation, Application and Testing procedures on one platform).

Chemspeed's solutions are used worldwide in the following industries:

- Pharmaceuticals & Agrochemicals
- Fine & Specialty Chemicals
- Petrochemicals
- Material Science: *Catalysts, Polymers, Lubricants, Paints & Coatings, Adhesives, Ceramics & Abrasives, Porous Materials, Nanomaterials, Biopolymers*
- Renewables and Energy
- Personal & Home Care
- Nutrition

Chemspeed's core capabilities:

- Workflow management solutions.
- Workflow task driven user interface.
- Exchangeable robotic tools: Chemspeed can bring more than 50 robotic tool based features to reactors, vessels, etc.
- Unrivaled gravimetric, direct-to-destination dispensing technology.
- High-Performance, synthesis and process research reactors, flexible formulation vessels in either disposable or reusable formats.
- A large choice of integrated hardware and software solutions.

Precision – Speed – Accuracy
Performance – Versatility –
R&D Cost Savings – High-Throughput



Complete Suite of Automated Workflow Solutions

Automated Sample Preparation

SWING

Automated Synthesis

ISYNTH

Automated Process Research

*MULTIPLANT /
AUTOPLANT*

Automated Formulation

*EMULSIFIER /
FORMAX*

Automated Application

APPLICATOR

Automated Testing

INVESTIGATOR

Software

AUTOSUITE

Object Oriented Workflow Design

FLEXSHUTTLE

Mark the relevant boxes to receive a tailored information package.



Chemspeed's **SWING** robotic platform is the leading high-throughput solution in unattended, automated Sample Preparation combining unrivalled flexibility and modularity for sustainably increasing R+D efficiency



SWING
Automated Compound, Substance Handling, Sample Preparation, Reaction Preparation, ...

SWILE
Automated 1:1 Gravimetric Pick and Dispense

SWING POWDERDOSE
Automated Gravimetric Solid Dispensing / Dosing Precision, Accuracy, Speed, Traceability (for applications in a GMP environment)

SWING VISCODOSE
Automated Gravimetric Viscous Liquid, Paste, Cream Dispensing

SWING WAXDOSE
Automated Gravimetric Highly Viscous Liquid and Wax Dispensing

SWING XDOSE
Automated Gravimetric Solid, Powder, Liquid, Viscous Liquid, Wax Dispensing / Dosing Precision, Accuracy, Speed, Traceability (for applications in a GMP environment)

SWING VISCO
Automated Viscosity Measurement Expandable with Rheology

SWING DENSITY
Unattended Density Measurement: Positive Displacement and / or on the Fly Operation while Dispensing

SWING pH
Unattended Parallel pH Measurement

SWING RP
Automated Reaction Preparation for e.g. Library Synthesis, Catalyst Screening

SWING SOLID CM
Solid Compound Management & Distribution / Reformatting

SWING SP
Automated Sample Preparation for e.g. Analytics, Preformulation

SWING SPEDEXTRACT
Automated Parallel Pressure Extraction

SWING CRYSTAL
Crystallization, Polymorph, Salt and Solubility Screening

SWING MIXINGPOSSIBLE
Automated Mixing and Grinding of Different Materials

SWING QUIETTERS
Automated Sample Preparation and Analysis of Pesticide Residues in Food Samples

SWING KF
Automated Sample Preparation and Inline Karl Fischer Water Titration

HERBAL PLANTEX
Automated Actives Extraction & Purification of Plant Ingredients at Ambient and / or Elevated Pressure

HERBAL TRACE
Automated Trace Extraction & Analysis of e.g. Pesticides, Metal Trace and other Contaminants at Ambient and / or Elevated Pressure

SWING BIOMASS
Automated Biomass Pre-treatment & Analytics (Organosolve, Hydrosolve, ...)

SWING MEDTECH
Automated Dispensing, Blending, and Microwave Assisted Baking of Powders Within highly regulated environments (e.g. GMP, GLP)

SWING FLEXYWEIGHER PLUS
Automated Vial Weighing, Filling, Capping & Crimping

SWING LIQUID GAS RP
Automated Reaction Preparation for e.g. Polymerization Screening of Liquefied Monomers in Disposable Glass Bottles

(Hybrid products for unattended Synthesis, Formulation, Application and Testing are commonly offered by Chemspeed on one or more platforms, within one product development cycle)



Mark the relevant boxes to receive a tailored information package.



Arrays of disposable and / or double-jacket precision glass reactors including condensers, filtration, valve system and



Adding substances while shaking and heating, etc. to a high-performance disposable or reusable glass or stainless steel reactor (1 mL - 100 mL)



Chemspeed's **ISYNTH** robotic platform is the leading high-throughput and high-output solution in unattended, automated Synthesis combining unrivalled flexibility and modularity for sustainably increasing R+D efficiency

- ISYNTH**
Library Synthesis in Disposable Glass Vials / Reactors and / or Reusable Double-Jacket Reactors and / or Microwave Reactors
- ISYNTH AI**
Active Ingredients (AI) Library Synthesis in Disposable Glass Vials / Reactors and / or Reusable Double-Jacket Reactors
- ISYNTH SPEEDCHEM**
Automated Library Synthesis in Disposable Vials / Reactors under Accelerating Superheated Conditions
- ISYNTH PSW**
Automated Parallel Synthesis of Peptides and Oligosaccharides
- ISYNTH SWAVE**
Automated Microwave Assisted Synthesis and Sample Treatment Batch and Continuous
- ISYNTH POLYMORPH**
Unattended Pharma Science (Polymorph Screening, Salt Selection)
- ISYNTH CATIMPREG**
Heterogeneous Catalyst Preparation by Automated Versatile Impregnation
- ISYNTH CATSCREEN 96**
Unattended Catalyst Preparation and Screening At Ambient and Elevated Pressure in 96 Well Plates
- ISYNTH ENERGY**
Automated Fuel Cell Catalyst Discovery & Optimization, Organic / Inorganic Frameworks / Cages Synthesis, Photovoltaics Screening
- ISYNTH POLY**
Unattended Polymer Research (controlled radical polymerization (CRP) techniques)
- ISYNTH BIOMAT**
Automated Biomaterial / Biopolymer / Drug Delivery Devices Synthesis
- ISYNTH POSYCAT POSY**
Unattended Polyolefin Catalyst Synthesis and Screening



MTP pressure block



Choice of various reactor sizes:
1 - 100 mL



Parallel filtration and reflux condensers

(Hybrid products for unattended Sample Preparation, Formulation, Application and Testing are commonly offered by Chemspeed on one or more platforms, within one product development cycle)

Chemspeed's **MULTIPLANT** and **AUTOPLANT** robotic platforms are the leading high-output solutions in unattended, automated Process R&D, Polymer / Material and Preparative Synthesis combining unrivalled flexibility and modularity for sustainably increasing R+D efficiency

- MULTIPLANT / AUTOPLANT**
Solutions for Process R&D and Preparative Synthesis
- MULTIPLANT / AUTOPLANT PRORES**
Optimization and Scale-Up
- MULTIPLANT / AUTOPLANT POLY**
Emulsion, Suspension, Dispersion, Solution, Mass and Pressure Polymerization Development and Scale-Up
- MULTIPLANT / AUTOPLANT POSYCAT**
Unattended Polyolefin / Rubber Catalyst Synthesis

Chemspeed's products



Process development workstation



Process research reactor with unique screwless and selfsealing design

Mark the relevant boxes to receive a tailored information package.

- MULTIPLANT / AUTOPLANT POSY**
Polyolefin and Rubber Synthesis, Optimization and Scale-Up
- MULTIPLANT / AUTOPLANT PREP**
Automated Preparative Organic and Inorganic Synthesis
- MULTIPLANT / AUTOPLANT CATTEST**
Unattended Catalyst Testing (hydrogenation, carbonylation, metathesis, Heck, Suzuki, ...)
- MULTIPLANT / AUTOPLANT PRECIP**
(Mixed) Oxides by pH-Controlled Precipitation, Ion Exchange and Sol-Gel Process
- MULTIPLANT / AUTOPLANT ZEO**
Accelerated and Standardized Zeolite and Metallorganic Framework (MOF) Synthesis by Precisely Controlled Hydro- and Solvothermal Synthesis
- MULTIPLANT / AUTOPLANT ENERGY**
Fuel Cell Catalyst Discovery and Optimization
- MULTIPLANT / AUTOPLANT BIOMASS**
Biomass Treatment & Analysis (Organosolve, Hydrosolve, AFEX, ...)
- MULTIPLANT / AUTOPLANT AUTOCAL**
Parallel and Real Time Calorimetry in High-Precision



(Hybrid products for unattended Sample Preparation, Formulation, Application and Testing are commonly offered by Chemspeed on one or more platforms, within one product development cycle)



Chemspeed's **FORMAX** and **EMULSIFIER** robotic platforms are the leading high-throughput and high-output solutions in unattended, automated (Re-)formulation and Characterization combining unrivalled flexibility and modularity for sustainably increasing R+D efficiency



Expanded view of the high-performance formulation vessel (blender, mixer)

- FORMAX**
Automated Formulation and Characterization
- FORMAX SKIN CARE & SUNSCREEN**
Automated Formulation and Characterization of Personal Care products (skin care, lotion, soap, sunscreen)
- FORMAX HAIR CARE & COLORANTS**
Unattended Formulation and Characterization of Colorants & Hair Care products
- FORMAX HOME CARE**
Automated Formulation and Characterization of Home Care / Household products
- FORMAX FOOD & FEED**
Unattended Formulation and Characterization of Food & Feed products (nutrition, functional food, beverages)
- FORMAX PAINTS & COATINGS**
Automated Formulation and Characterization of Paints & Coatings
- FORMAX LUBES**
Unattended Formulation and Testing of Lubricants (Oils, Greases)
- EMULSIFIER AGRO**
Automated Formulation, Application and Testing of Emulsion & Suspension Concentrates
- EMULSIFIER EOR**
Unattended Surfactant and Additive Screening for Enhanced Oil Recovery



FORMAX high-performance formulation vessel with overhead gravimetric dispensing of liquids, viscous liquids, pastes, waxes WHILE mixing, scraping, heating, cooling, refluxing

(Hybrid products for unattended Sample Preparation, Synthesis, Application and Testing are commonly offered by Chemspeed on one or more platforms, within one product development cycle)

For complete and fully integrated Formulation, Application, Testing product development workflows, Chemspeed provides a unique solution for virtually unrestricted flexibility in combining sequential and parallel processing (FLEXSHUTTLE).

Chemspeed's products

Mark the relevant boxes to receive a tailored information package.



Chemspeed's **APPLICATOR** robotic platform is the leading high-throughput solution in unattended, automated Application of formulated products combining unrivalled flexibility and modularity for sustainably increasing R+D efficiency

- APPLICATOR SKIN CARE & SUNSCREEN**
Unattended Application of Personal Care products (skin care, lotion, soap, sunscreen)
- APPLICATOR HAIR CARE & COLORANTS**
Automated Application of Colorants & Hair Care products
- APPLICATOR PAINTS & COATINGS**
Unattended Application of Paints & Coatings (draw-down, spray coating, spin coating, ...)
- APPLICATOR PERMAT**
Automated Application of Oils, Adhesives, Lubricants, Sealants, Rubbers



Draw-down, Spray Coating, Spin Coating, Injection Molding etc.

(Hybrid products for unattended Sample Preparation, Synthesis, Formulation and Testing are commonly offered by Chemspeed on one or more platforms, within one product development cycle)

For complete and fully integrated Formulation, Application, Testing product development workflows, Chemspeed provides a unique solution for virtually unrestricted flexibility in combining sequential and parallel processing (FLEXSHUTTLE).

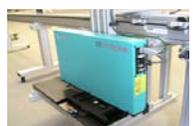


Chemspeed's **INVESTIGATOR** robotic platform is the leading high-throughput solution in unattended, automated Investigation / Testing of formulated & applied products combining unrivalled flexibility and modularity for sustainably increasing R+D efficiency

- INVESTIGATOR SKIN CARE & SUNSCREEN**
Automated Investigation of Personal Care products (skin care, lotion, soap, sunscreen)
- INVESTIGATOR HAIR CARE & COLORANTS**
Unattended Investigation of Colorants & Hair Care products (I*a*b, shine, ...)
- INVESTIGATOR PAINTS & COATINGS**
Automated Investigation of Paints & Coatings (color, gloss, scratch resistance, ...)
- INVESTIGATOR PERMAT**
Unattended Investigation of Oils, Adhesives, Lubricants, Sealants, Rubbers



Tack-cure



Color & gloss measurement

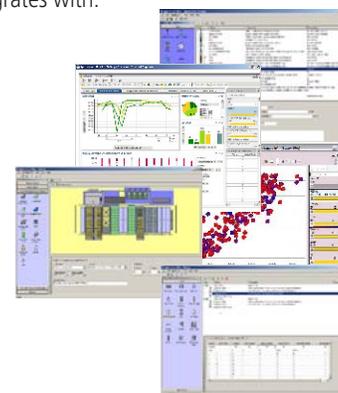
(Hybrid products for unattended Sample Preparation, Synthesis, Formulation and Application are commonly offered by Chemspeed on one or more platforms, within a product development cycle)

For complete and fully integrated Formulation, Application, Testing product development workflows, Chemspeed provides a unique solution for virtually unrestricted flexibility in combining sequential and parallel processing (FLEXSHUTTLE).



Chemspeed's **Workflow Management Software**

- AUTOSUITE WORKFLOW MANAGEMENT SOFTWARE** integrates with:
- AUTOSUITE USER INTERFACE**
Selection of Interfaces in the product brochure
- VIRTUALLAB**
Lab Journal, Workflow Management, Instrument Control
- JMP, MODDE**
Design of Experiments - DoE
- SPOTFIRE**
Data Visualization and Selection
- CUSTOM INTEGRATION PACKAGE**
Chemspeed integrates a variety of software products, please contact us for interfaces or integration.



Chemspeed's products

Mark the relevant boxes to receive a tailored information package.

Object Oriented Workflow Design

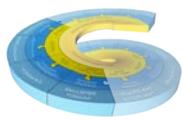


Chemspeed's **FLEXSHUTTLE** is the step-changing high-throughput and high-output solution for unrestricted sequential and parallel processing of entire (or partial) product development workflows. The unrivalled design enables dramatic product development efficiency increases combined with highest quality and maximum ease of use.



FLEXSHUTTLE PRODUCT DEVELOPMENT

Fully integrated and automated product development from Sample Preparation to Array Synthesis and Process Development or even up to integrated Formulation in one workflow set-up in industries such as Pharmaceutical, Agrochemical, Fine & Specialty Chemicals, Material Sciences (Catalysts, Polymers, Paints & Coatings, Porous Materials, Nanomaterials, Biomaterials), Renewables & Energy.



FLEXSHUTTLE PAINTS & COATINGS DEVELOPMENT

Fully integrated and automated paints and coatings development from Formulation to Application and Testing.

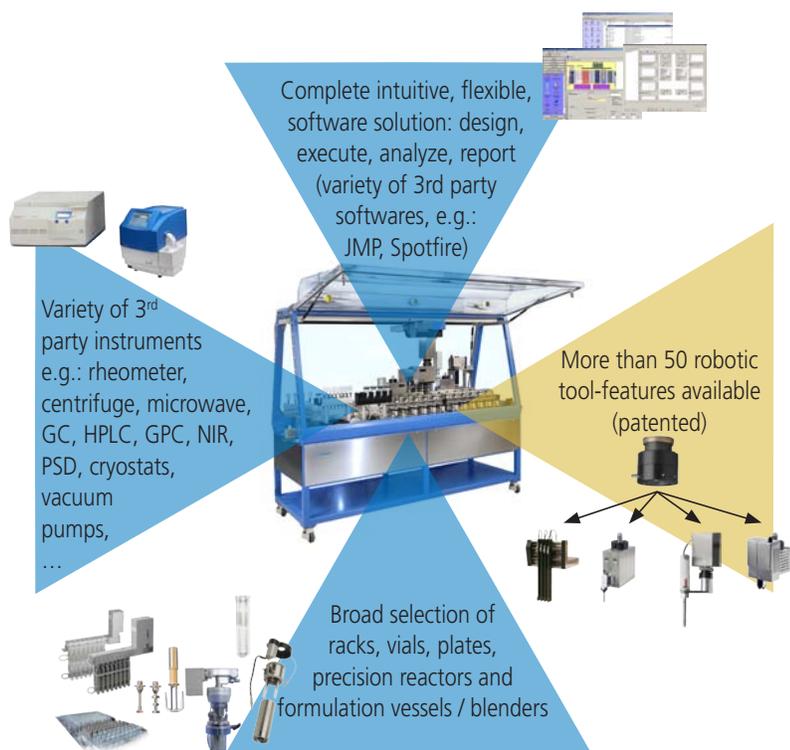
FLEXSHUTTLE COLMATCH

Fully integrated and automated system for Colour Blending and Colour Matching.

FILMAX

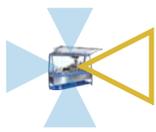
Fully integrated and automated film applicator for draw-down of e.g. inks, paints, coatings, battery pastes, adhesives.

4 Dimensions of Modularity and Flexibility



– Off-the-Shelf-Design –

- Individual platform configuration tailored to your workflow with market-proven off-the-shelf components.
- Robotic platforms which can easily be integrated with one another to enable multi-workflow processes (e.g. Formulation, Application and Testing procedures all integrated in a single platform).



Robotic Tool-Features

More than 50 robotic tool-features can be integrated with Chemspeed's unique robotic tool exchange technology, including unrivaled overhead gravimetric dispensing, which can operate while mixing, heating, refluxing and cooling. Virtually any combination of these robotic tools is possible.



Robotic tool exchange interface (proprietary)

Precision balance Overhead gravimetric dispensing robotic tools (proprietary)	Volumetric dispensing robotic tools	Action robotic tools	Analytic robotic tools
<p>NEW</p> <ul style="list-style-type: none"> Overhead gravimetric 1:1 pick & place / dispense of solids & powders DIRECTLY from virtually any source to any destination (<0.1 mg to about 30mg) Disposable pick & dispense pipets (no dead volume) resolution: 0.1 mg (or 0.01 mg with a second balance) 	<ul style="list-style-type: none"> Liquid handling powered by 4 syringe pumps (syringe volumes: 1, 10, or 25 mL) for viscosities from 1 mPa·s to 100 mPa·s Special options: <ul style="list-style-type: none"> Disposable tips (1'200 µL) Disposable syringes Heated needles (up to 100°C) Spray needles pH and temperature measurement and control Coated needles, PEEK needles... Liquid gas dispensing with gravimetric control resolution: down to 0.1 mg 	<ul style="list-style-type: none"> Multigripper for vial and MTP transport and much more Automated barcode scanner 	<ul style="list-style-type: none"> Online density measurement (aspiration technology), on the fly resolution: 1 mg (or 0.01 mg with second balance) 
<ul style="list-style-type: none"> Overhead gravimetric dispensing of solids & powders (0.1 mg to 20 g) Dispensing container volume: 15 mL or 30 mL resolution: 0.1 mg (or 0.01 mg with a second balance) 		<ul style="list-style-type: none"> Screw capper Vial diameter range: from 10 mm to 50 mm Larger ranges available Torque range: from 0.1 Nm to 1 Nm 	<ul style="list-style-type: none"> Brookfield Viscosimeter (RVDV-II+ Pro BK) 
<ul style="list-style-type: none"> Overhead gravimetric dispensing of solids & powders (1 mg to 100 g, larger volumes are available) Dispensing container volume: 100 mL resolution: 1 mg (or 0.01 mg with a second balance) 		<ul style="list-style-type: none"> Capping, crimping (N8 / N11 / N13 / N20) Decapping (N8 / N11 / N13 / N20) 	<ul style="list-style-type: none"> Tri gloss measurement Thickness measurement Color measurement Precision tack-cure 
<ul style="list-style-type: none"> Overhead gravimetric dispensing of highly viscous liquids, pastes and creams (1 mg to 100 g) with viscosities from 1 mPa·s to 500'000 mPa·s (based on Newtonian substances) resolution 1 mg (or 0.01 mg with a second balance) Optional aspiration feature Optional transfer of hot (up to 90 °C) substrates via heatable cartridges (e.g. for waxes) 		<ul style="list-style-type: none"> High shear homogenization (11'000 to 30'000 rpm) 	<ul style="list-style-type: none"> Camera Observation of dissolution Particle size distribution and dynamic light scattering
<ul style="list-style-type: none"> Overhead gravimetric aspiration and dispensing of viscous liquids (1 mg to 100 g) with viscosities from 1 mPa·s to 15'000 mPa·s via disposable positive displacement syringes, resolution: 1 mg (or 0.01 mg with a second balance) 	<ul style="list-style-type: none"> Overhead gravimetric / volumetric aspiration and dispensing of viscous liquids (0.1 µL to 12.5 mL) with viscosities from 1 mPa·s to 15'000 mPa·s via disposable positive displacement syringes, resolution: down to 1 µL 	<ul style="list-style-type: none"> Overhead stirrer (20 to 200 rpm) Different stirrer types available Ultrasonic dispersion (100 W) 	
		<ul style="list-style-type: none"> Vacuum / Degassing Reflux condenser Evaporation Filtration 	
		<ul style="list-style-type: none"> High speed injection molding Foam formation 	
		<ul style="list-style-type: none"> Draw-down with disposable or reusable precision spiral and / or gap bars Free film generation Dip coating Spray coating Wet-on-wet coating 	
		<ul style="list-style-type: none"> Robotic transfer arm to serve 3rd party instruments e.g. centrifuge 	



Selection of Racks, Vials, Plates, Precision Reactors and Formulation Vessels / Blenders

Mark the relevant boxes to receive a tailored information package.

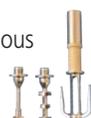
- Disposable formats for Sample Preparation, Synthesis, Emulsion Preparation and Analysis (microwave), Catalyst Impregnation, etc.**
- Disposable reactors for a variety of applications including Synthesis, Emulsions, Crystallization, etc.**
- Quartz Vials for Temperature up to 650 °C



- Vortex mixing
 - Speedmixing
 - Reactor racks for crimp reactors
 - Electrical heating racks (disposable reactors) and simultaneous cooling (one temperature per block)
 - Evaporation (optional evaporation tool is required)
 - Reflux (optional reflux robotic tool is required)
 - Filtration (optional filtration tool is required)
 - Capping, de-capping, screw capping of reactors for sample preparation, work under pressure / multi-step synthesis, etc.
- Your vision: _____

High-output process research reactors

- Totally individually controlled reactors with unique screwless and selfsealing design
- Reactor volume: 100 mL, 250 mL, 1000 mL
- Exchangeable stirrer design
- Up to 8 individually controlled continuous feeds
- Individual control of jacket and internal reactor temperature
- Individual control of agitation (torque & speed)
- Individual control of multiple feeds (gases and liquids)
- Individual measurement, control, adjustment of viscosity
- Interfaces with different probes: pH, Pt100, NIR, UV / VIS, Raman, laser scattering, ...
- Vacuum and filtration capabilities
- Different modes of operation (batch, semi-batch, continuous cascade...)
- Pressure range (standard: 100 bar, upgrade: 200 bar)
- Temperature range (standard: -20 to +250 °C, upgrade: -50 to 350 °C)



High-Throughput and High-Output Synthesis (Discovery) & Library Synthesis

High-speed vortexing precision reactors including all features for high-performance synthesis

ISYNTH Disposable reactors for a variety of applications including Synthesis, Emulsions, Crystallization, etc.

ISYNTH SpeedChem Library Synthesis in disposable glass vials / reactors at ambient and elevated pressure in 96-well plates

(Flexible MTP format: 24, 48, 96, MTP pressure block: 100 bar)



- Up to e.g. 12 reactor arrays for up to e.g. 192 parallel reactors
- Reactor volume: from 1 up to 100 mL
- Arrays of double-jacketed glass or stainless steel reactors for a broad temperature (-70 to +180°C) and pressure (up to 100 bar) range
- Closure of reactors by a ceramic or stainless steel valve system (reactor block) allowing operation under high quality vacuum down to 10 mbar (for online evaporation), inert atmosphere (no need for septa, filtration etc.)
- Efficient yet gentle vortex mixing (up to 1,400 rpm), even while accessing the reactor
- Inert atmosphere for sensitive reagents or inert reaction conditions:
 - Inertization of the reactors (vacuum inert gas cycles)
 - Inertization of the entire workstations enclosed hood
- Optional pseudomechanical stirring for viscous liquids
- Your vision: _____

High-performance formulation vessels (blenders, mixers)

- Proven concept
- Totally individually controlled blenders
- Reactor volume: 100 mL (1000 mL on request)
- Exchangeable stirrer design
- Exchangeable scraper
- 6'000++ rpm
- 500+ Pa.s / 1,000 rpm
- Gravimetric dispensing of solids, viscous liquids, waxes WHILE mixing & scraping, heating, refluxing, cooling, measurement, etc.
- A variety of in-line analytics available (pH, visc, control of T, P, agitation...)
- Degassing
- Individually controlled feeds



- Vessels for Preparation, Application and Analysis of Emulsion & Suspension Concentrates
- More reactors and formulation vessel designs, please tell us your vision

Up to 36 process reactors or formulation vessels or combinations on one platform with proven scalability to the multi-liter scale



Selection of Available Robotic Features

Mark the relevant boxes to receive a tailored information package.

Further Action Tools

- Sample Aging
- Variety Agitation Methods
- Capping, Crimping, Screw Capping, Decapping
- Centrifuge / Speed Mixer
- Continuous Feeding (pressure possibility)
- Compaction
- Crushing
- Drying, Calcination, Desiccation
- Evaporation
- Gas Supplies (pressure)
- High Shear Homogenizer
- Heating / Cooling of Racks and Vials
- MTP and Vial Transfer
- Microwave Treatment
- Pigment Grinding
- Reflux Condenser Robotic Tool
- Scheduling / Sample Tracking
- Sieving
- SPE (Solid Phase Extraction)
- Storage of e.g. coated MTP Plates
- Ultrasonic
- Vacuum / Degassing
- Additional Balances on the deck for e.g. vial weighing
- Your vision: _____

Application Tools / Modules

- Dip Coating
- Draw Down
- Free Film Generation
- Heat / UV Curing
- Hair Treatment
- Injection Molding / Foam Formation
- Spin Coating
- Spray Coating (airborne / airless)
- Wet-on-Wet Coating
- Your vision: _____

Special Tools

- Washing Modules
- Disposable Formats:*
- Disposable Formulation Vessels
- Disposable Reactors
- Disposable Plates for Coatings (MTP format)
- Disposable Dispensing Tools
- Disposable Measurement Tools
- Fraction Collector (e.g. for MiniPlants)
- Barcode Printing / Vial Labelling
- Your vision: _____

Testing Tools / Modules

- Karl Fischer Titrator
- Abrasion / Wear / Mar
- Adhesion / Delaminating
- Parallel Precision Calorimetry
- Coefficient of Friction
- Color Measurement
- Contact Angle, Surface Tension
- Density Measurement
- Dissolution Observation
- Durability - Exterior Weathering
- Simulation
- Dynamic Mechanical Analysis
- Film Thickness
- GC / (MS)
- HPLC / (MS)
- Homogeneity Determination
- Foam Analysis
- Camera (e.g. observation of emulsion concentrate behaviours in solvents), Quality control, Control of Dissolution, Residue, etc.
- Image Analysis (e.g. paint / coating failures), etc.
- Haze Gloss
- Sheen / Sheen Uniformity
- Hair Testing
- Nano- / Micro-Hardness
- Micro- / Mechanical Properties
- Scratch Resistance Testing
- Your vision: _____

- Turbidity, Nephelometry
- Particle Size Distribution by Dynamic Light Scattering
- Profilometry
- Rheology
- Solvent Exposure
- Surface Energy / Surface Tension
- Tack / Cure
- Viscosity Measurement / Control / Adjustment
- pH Measurement / Control / Adjustment
- Weighing
- C / R, Hide Measurement
- Color Acceptance / Rub-Out
- K&S
- Reflectance
- Block Resistance
- Scrub Resistance
- Stain Wash / Washability
- Burnish Resistance
- Dirt Pick-Up Resistance
- Stability (Heat)
- Tint Strength
- Sag and Leveling
- Your vision: _____



Complete Software Solution: Design, Execute, Analyze, Report

Smart hardware enables the full power of smart and easy to use software. The **Chemspeed Workflow Management Software** together with the **AutoSuite User Interface & Executor** and **VLab Software** is a powerful combination for DoE, execution, analysis and reporting.

The **AutoSuite User Interface & Executor** controls and executes the entire Sample Preparation, Synthesis, Formulation, Application and Testing Workflow or parts of the product development cycle. It controls all Chemspeed Robotic Platforms and any other integrated 3rd party software and hardware.

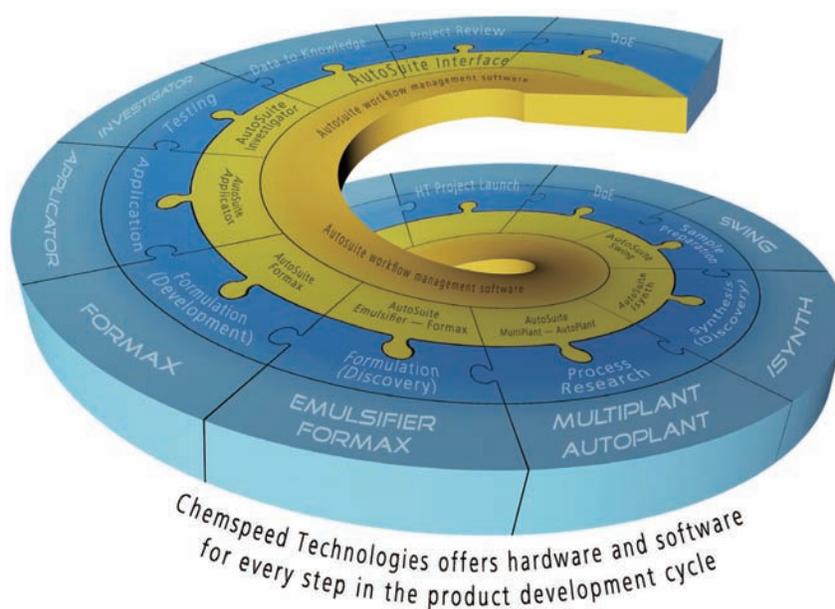
AutoSuite User Interface & Executor integrates virtually any preferred 3rd party software or hardware module. The AutoSuite Application Programming Interface (API) is easily accessible for integration of 3rd party software and hardware modules. Scheduling, Barcode and Sample Tracking, Expert Tools such as Autoteaching, and many other Workflow Tools are integrated in **AutoSuite User Interface & Executor**.

Chemspeed VLab is a powerful design (DoE), analysis and reporting tool. It includes a full document management system. The software scales from a single PC to large network installations with multiple hardware instruments and clients.

Chemspeed VLab and **AutoSuite User Interface and Executor control, schedule, coordinate, execute, and track** all Robotic Platforms of the entire Product Development Cycle, including the integrated 3rd party instruments and software tools.

15+ Years of Experience in Automated Experimentation.
 Customized Workflow Solutions.
 + Swiss Quality Products.
 An International Team of Highly Experienced Chemists.

Chemspeed Technologies AG is the leading provider of high-throughput and high-output research & development workflow-solutions from single bench-top / standalone automated workstations (powder dispensing - sample preparation- synthesis - process development - formulation - application - testing) up to complete and integrated product development workflows for the entire product development processes in the chemical, material science, renewables & energy, pharmaceutical, agrochemical, specialty chemical, home care, cosmetics and nutrition industries, as well as academia.



Discover our enabling portfolio for the entire product development cycle!

