PurePep® Sonata®+

Product Information Sheet D0040413/B

Real-Time Flow Technology – accurate and precise fluid transfers with minimal need to calibrate

Easy to use software – efficient, flexible, and intuitive workflow, designed for 21 CFR Part 11 compliance

Single-Shot™ Preactivation – higher purity and no risk of reagent cross-contamination

PurePep Pathway® – dedicated chemically inert pathways for high purity and yield

Variable Mixing Modes – nitrogen bubbling, agitation and recirculation for increased purity



Uncompromising productivity using Real-Time Flow technology and intuitive software

Building on the original quality of Sonata XT, a mid-pilot scale peptide synthesizer, PurePep Sonata+ is designed to increase productivity of peptide synthesis at scale. Using proprietary valve block technology, the PurePep pathway, Sonata XT has empowered chemists to maximize purity and yield of peptide synthesis, and now, PurePep Sonata+ goes even further with improved hardware and software features.

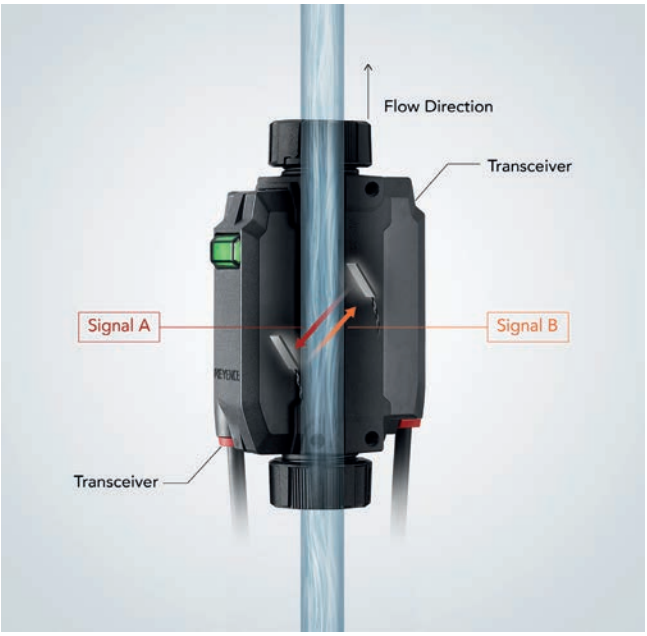
The Purepep Sonata+ delivers fluid using non-invasive Real-Time-Flow technology via chemically inert, optimized fluid channels allowing for accurate and precise solution transfer rates of any solvent. An electromagnetic gear pump for the primary solvent and a chemical resistant pump for recirculation ensures fast and reliable solvent delivery. All reactions occur in an inert environment to minimize undesirable side reactions, and multiple mixing modes including nitrogen bubbling, recirculation and mechanical agitation can be combined to maximize reaction efficiency to deliver uncompromised purity, yield, and flexibility. Pre-Activation Single Shot™ deliveries allows for pre-activation and delivery of amino-acid building blocks with no waste and no cross-contamination.

The Purepep Sonata+ is controlled by intuitive, workflow-driven software to allow for easy operation by all users from experienced chemists to novice operators. This software was designed with 21 CFR part 11 compliance in mind, ensuring the instrument can be used in highly regulated cGMP laboratory environments, with IQ/OQ support and PQ guidance also available. Key software features include user management, electronic signatures, audit trail, and easy-to-review reports for maximum traceability.

Gyros Protein Technologies also supplies high quality peptide synthesis reagents, resins (in bulk and ready-to-use packaging) and solvents for use on the instrument (Page 7).

GYROS PROTEIN Technologies

Real-Time Flow technology



- **Flow rate of fluids moving within PurePep Sonata+ are monitored continuously for accurate, precise fluid delivery.**
- **Minimal calibration is required for all fluid deliveries.**
- **Save time during instrument setup as the Real-Time Flow controller takes care of reagent deliveries.**

With the goals of maximizing peptide purity and yield, the proprietary valve block technology, PurePep pathway inside PurePep Sonata+, helps to ensure peptides are synthesized with the highest possible crude purity, for either short or long sequences. To increase the chemist's productivity and to allow for flexible reagent delivery, PurePep Sonata+ is equipped with Real-Time-Flow technology, a non-invasive method of continually monitoring the flow rate of fluids within the system. Fluids are delivered precisely and accurately, even for those with different viscosities, with minimal need for calibration.

PurePep Sonata+ overview



PurePep Sonata+ is delivered with:

Computer	PC computer, Windows® 10, PurePep software, color flat screen monitor, keyboard, mouse, cables and connectors.
PurePep Sonata+ Software	Intuitive workflow-driven software which includes pre-programmed methods.
Solvent and reagent containers with caps and tubing	Solvent tanks and bottles (3 x 8 L Stainless Steel Tanks, 3 x 1 L pressure rated glass bottles), reaction vessels (1 x 200 mL, 1 x 500 mL), 2 x 20 L waste tanks, 20 x pressure rated GL45 1 L amino acid bottles, one set of replacement filters.
Start-up kit	Includes reagents and consumables required for QC chemistry.
User and instrument guides	USB with an electronic copy of the user guide and selected applications notes and posters.
12 months warranty	Covers instrument installation and verification, defects in materials and workmanship and repairs associated with the warranty.

PurePep Sonata+ Software

PurePep Sonata+ software has been designed with the productivity of the user in mind:

- Intuitive workflow for synthesis set-up
- Pre-programmed standard methods may be used as is, or as a template for customized methods
- Sequences can be imported to easily create new syntheses
- New syntheses may be planned and programmed while others run
- Reagent preparation and usage calculators save time and prevent mistakes
- Email notification enables remote verification that your synthesis is running as planned
- Self-diagnostics and automated cleaning routines ensure flawless operation of the system
- Standalone PC Editor allows multiple users to design the syntheses and transfer them to the instrument later

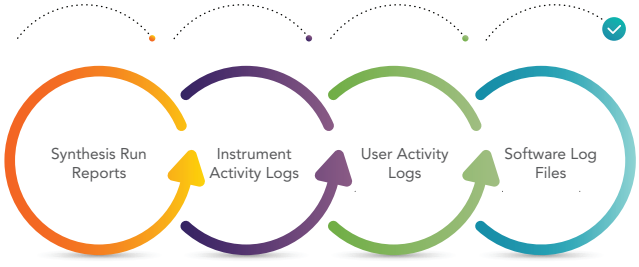
21 CFR part 11 compliance support

With more peptides moving through clinical trials, peptide synthesis is increasingly being performed in cGMP laboratories, in which adherence to regulatory guidelines, including 21 CFR part 11, is crucial. The PurePep Sonata+ software enables 21 CFR part 11 compliance, ensuring the instrument can be used in highly regulated laboratory environments.

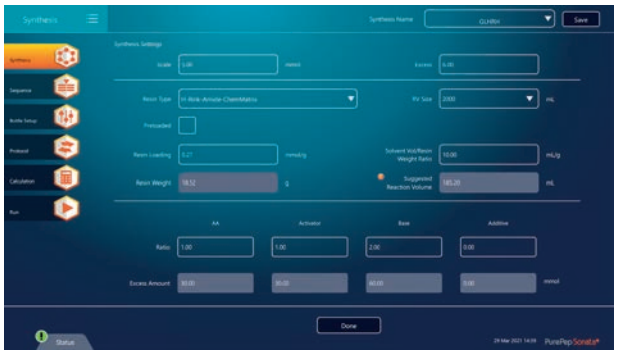


Key features include:

- User management
- Password protection
- Electronic signatures
- Audit trail
- Easy-to-view reports for maximum traceability
- Backup and Restore Points
- Version History



Setting up a synthesis



Synthesis

Input parameters including coupling methods, reagent excess, and information on resins for use in record-keeping and calculations.



Sequence

Add peptides from the library or create new ones with the sequence editor. Select cycles for special chemistries, Pre-Activation chemistry and Single-Shot™ additions.



Bottle setup

Choose to use default bottle positions for amino acids and reagents or arrange as desired.



Protocol

Assign pre-programmed or custom chemistry protocols to any cycle in the synthesis. Customize the mixing modes for high purity couplings.



Calculation

Let the software calculate the weights and volumes needed for all reagents, as well as theoretical yield, estimated synthesis time and cost.



Run

Start synthesis from the beginning or at any cycle and step desired. Check the status of the current cycle, and follow the countdown to completion of your peptide.

IQ/OQ validation support and PQ guidance



Installation qualification and operation qualification (IQ/OQ) support services verify and document that your instrument is supplied, installed, and operating according to Gyros Protein Technologies specifications. Gyros Protein Technologies-certified field service engineers inspect critical components, ensure that your systems function properly and reproducibly during automated synthesis operations, and provide documentation to help you meet regulatory requirements.

The tests performed as part of IQ/OQ procedures verify that the various key components and parameters, as well as the laboratory environment, meet stipulated specifications. After verifying the minimum requirements for space, power, and ventilation have been met, field service engineers confirm that a system has been shipped with the correct parts, tubing, and connections. Nitrogen and vacuum pressures, valve operations, nitrogen and fluid flow are all confirmed to meet specifications. Fluid deliveries, sensors and mixing functions must all be demonstrated to work properly during the qualification. All installations require successful completion of a standard test synthesis method, and the Gyros Protein Technologies service team can help to design custom performance qualification (PQ) guidance. Re-qualifications can also be provided annually or according to an instrument user's requirements.

System specifications

Number of reaction vessels	1
Synthesis scale range	1 mmol to 200 mmol
Reaction vessel volume	200 mL, 500 mL, 1.2 L, 2 L, 3.2 L, 4.2 L
Number of solvent positions/sizes	1 primary solvent, 1 L - 200 L capacity (User-supplied or optional vessel available) 6 user-defined solvent positions, 0.5 L - 8 L capacities
Number of amino acid positions	20 amino acid positions, 500 mL or 1 L
Chemistries supported	Fmoc, t-Boc, organic, peptoid, combinatorial, other
Activation	HBTU, HATU, HCTU, TBTU, PyBOP, DIC/OxymaPure®, DIC/HOBt
Fluid measurement technique	Real-Time Flow delivery of fluids
Fluid transfer method	Dedicated pump for primary solvent Positive pressure with nitrogen for most solvents and reagents
Agitation method	Nitrogen bubbling (adjustable), variable vortexing, recirculation — alone or in combination
Cleavage	Automatic, programmable (for Fmoc chemistry only)
Waste container	2 x 20 L containers with overflow sensor 200 L option available
Control interface	Proprietary PurePep software. Stand-alone computer with flat panel monitor included
Reporting	Real-time log of each instrument function, print to file or printer. Includes e-mail notifications to send an email at a specified program step, at the beginning of each cycle, or if an error occurs.
Power	115 VAC/60 Hz or 230 VAC/50/60 Hz
Dimensions	35"W, 23"D, 63.5"H (89 cm W, 58 cm D, 161 cm H)
Weight	400 lbs. (182 kg)
Warranty	One year, parts and labor

Ordering information

Product number	Product
SONP-230	PurePep SONATA+ Automated, Mid-Scale, Solid-Phase, Bio-Organic Synthesizer (230V, 50/60Hz)
SONP-110	PurePep SONATA+ Automated, Mid-Scale, Solid-Phase, Bio-Organic Synthesizer (115V, 60 Hz)
Service contracts	
SONP-Full	PurePep Sonata+ Full Service Contract
SONP-1/1	PurePep Sonata+ 1/1 Service Contract
SONP-PALS	PurePep Sonata+ PALS Service Contract
SONP-PM1	PurePep Sonata+ PM1 Service Contract
SONP-Parts	PurePep Sonata+ Parts Service Contract
IQOQ Validation	
SONP-IQOQ	IQ/OQ validation support, Sonata+
SONP-IQOQ-DIST	IQ/OQ validation support, Sonata+

AMINO ACIDS

100% fully synthetic amino acids, QC tested. Guaranteed weight, purity and identity. Ready to use pre-packed or bulk bottles with high quality amino acids for PurePep Chorus, Symphony® X and Prelude® X. Fmoc protected amino acids are available in bulk quantities from 5g to 1kg or custom sizes are available upon request.





RESINS

Choose from a variety of high-quality standard and specialty resins, including pre-loaded Wang, Rink, 2-chlorotrityl, and HMPB linkers on polystyrene, Tentagel®, and ChemMatrix® supports. Resins are available in 1g, 5g and 25g pack sizes.

COUPLING REAGENTS

Improve yield and purity with high quality additives and coupling reagents. Minimize side products and optimize chemistry by choosing the right coupling methods. COMU®, DIC, HBTU, HCTU, HDMA, HDMC, K-Oxyma®, OxymaPure®, Py-Oxim®, PyClock® are available in bulk quantities from 5g to 1kg or custom sizes available upon request.



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