

Asynt

Product Catalogue



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List of Suppliers



Asynt Ltd specialise in providing innovative technologies for the chemical synthesis sectors and strive to provide completely new solutions for chemists in addition to a range of unique supporting products. Since inception, the company has developed and extended their own DrySyn® range of heating and cooling blocks as well as taken on the distribution for a range of other laboratory products.



Uniqsis Ltd was founded in January 2007 to develop innovative microreaction technology products for customers in both the research and biopharmaceutical sector. Their latest development is the fully integrated, easy to use FlowSyn Continuous Flow Reactor for seamless reaction optimisation and scale-up.



Heidolph Instruments GmbH & Co KG manufacture lab equipment specialising in bench top parallel synthesizers, rotary evaporators, overhead stirrers, homogenizers, shakers and mixers, liquid pump systems and magnetic stirrers.



J-KEM Scientific Inc. established themselves as the leader in temperature and vacuum control equipment as well as sophisticated one-of-a-kind instruments like custom robotics, parallel synthesis equipment, and custom instrumentation.



Julabo Labortechnik GmbH manufacture constant temperature circulators used for research, science and industry.



Pharmacore Inc. offer chemistry services for leading pharmaceutical and biotechnology companies including: custom organic synthesis; cGMP scale-up; development of novel molecular building blocks, chemical process research and development and medicinal chemistry services.



Vacuubrand GmbH & Co KG offer the most comprehensive range of laboratory and instrumentation sized vacuum generating and gas transfer pumps and components for the 1000 to 10⁻³ mbar vacuum range.

DrySyn® Single Position Heating Blocks

DrySyn Single Position Heating Blocks enable clean, safe synthesis for single reactions from 50ml up to 5000ml flasks. DrySyn is the proven technology to replace hazardous silicon oil baths and heating mantles while achieving identical heating performance.



DrySyn Classic
For 50ml–1000ml

Ordering Information

ADS1 DrySyn Classic kit consisting of 50ml, 100ml, 250ml and 500ml inserts and 1000ml base

Benefits
• Safe temperature ramping to 250°C
• Secure lifting handles guarantee safe and easy removal from heat source
• Chemical and solvent resistant
• Compatible with any hotplate stirrer
• Excellent reaction visibility
• Modular system with small footprint
• Equal heating performance to silicon oil
• Components are available separately or as cost-effective kits
• Accommodate the full range of standard round bottomed flasks
• Powerful, efficient stirring



DrySyn Maxi
For 2000ml and 3000ml

Ordering Information

ADS2 DrySyn Maxi kit consisting of 3000ml base with 2000ml insert



DrySyn SuperMaxi
For 5000ml

Ordering Information

ADS4 DrySyn SuperMaxi

DrySyn components for pear-shaped flasks are available. Please contact us to discuss your requirements.

DrySyn® Multi Position Heating Blocks

DrySyn Multi Position Heating Blocks enable clean, safe synthesis for multiple reactions from 1ml vials up to 500ml flasks. DrySyn is the proven technology to replace hazardous silicon oil baths and heating mantles while achieving identical heating performance.



Benefits

- Safe temperature ramping to 250°C
- Secure lifting handles guarantee safe and easy removal from heat source
- Chemical and solvent resistant
- Compatible with any hotplate stirrer
- Excellent reaction visibility
- Modular system with small footprint
- Equal heating performance than silicon oil
- Components available separately or as cost-effective kits
- Accommodate the full range of standard round bottomed flasks
- Powerful, efficient stirring

DrySyn Multi

For 1ml—100ml

Ordering Information

ADS3 DrySyn Multi kit consisting of base, 3x 25ml, 3x 50ml, and 3x 100ml inserts



DrySyn Multi-M

For 1ml—250ml

Ordering Information

ADS5 DrySyn Multi-M kit consisting of base, 3x 100ml, and 3x 250ml inserts



DrySyn Multi-S

For 1ml—500ml

Ordering Information

ADS6 DrySyn Multi-S kit consisting of base, 3x 250ml, and 3x 500ml inserts



DrySyn Multi 4 position reaction vial inserts

For vial/tube sizes from 16.20—25.75mm or custom made

Ordering Information

ADS3-R (size) DrySyn Multi 4 position reaction vial inserts pack of 3 (for sizes see pricelist)



DrySyn components for pear-shaped flasks are available. Please contact us to discuss your requirements.

DrySyn® Accessories

DrySyn Accessories perfectly compliment the DrySyn product range.

The DrySyn Multi safety lifting handle is compatible with all DrySyn Multi bases and enables you to remove your reaction quickly and safely from the heat source.

DrySyn Multi 3-Position clamps can hold three flasks or condensers to make reaction set up even more convenient.



DrySyn Multi Safety Lifting Handle

Ordering Information:
ADS9



DrySyn Multi 3-Position Clamp

Ordering Information:
ADS3-C



DrySyn Multi-M 3-Position Clamp

Ordering Information:
ADS5-C



DrySyn Multi-S 3-Position Clamp

Ordering Information:
ADS6-C



Wheaton V-Vials

Graduated clear V-Vial with open-top cap and PTFE-faced silicone liner
See price list for ordering information



Stirrer Bars

Recommended PTFE magnetic stirring bars for all DrySyn™ MULTI units
See price list for ordering information

PTFE Spin Vanes

Teflon® Spin Vanes have cross-mounted moulded in magnetic bars for V Vials®. See price list for ordering information

DrySyn[®] Single and Multi Position Cooling Blocks DrySyn COOL and Multi COOL

DrySyn COOL and Multi COOL offer controlled cooling without using jacketed reaction vessels.

It allows active temperature control from ambient temperature to -30°C.

The modular system comprises of a cooling base plate and inserts, allowing the use of standard round bottom flasks on a scale from 25ml to 1000ml.

- Active temperature control avoids temperature fluctuations
- Compatible with all standard laboratory circulator or chiller systems
- Unattended operation allows for overnight reactions
- Compatible with all standard laboratory round bottom flasks
- Easy exchange of reaction vessels within seconds without disrupting the thermal bath fluid
- Possible to program and control cooling rates
- Compatible with any standard magnetic stirrer
- Robust, durable aluminium build instead of glass

Technical Data

Min. solution temperature*	-30°C
Reaction scale DrySyn COOL	1x 50ml, 1x 100ml, 1x 250ml, 1x 500ml, 1x 1000ml
Reaction scale DrySyn Multi COOL	3x 25ml, 3x 50ml, 3x 100ml
Material	anodised aluminium
Base diameter (mm)	87
Flask type	standard laboratory round-bottomed flasks

*Obtained with Huber Ministat 240 (without insulation).
A solution temp. of -20°C was achieved in 30min. with
50ml solutions in three 100ml flasks.



GB Patent application no 0612975.3

Ordering Information for DrySyn COOL:

ADS8 DrySyn COOL kit
including 1 x base plate, 2 x hose barb connectors,
1x 50ml, 1x 100ml, 1x 250ml, 1x 500ml, 1x 1000ml
inserts and flask seals

Ordering Information for DrySyn Multi COOL:

ADS10 DrySyn Multi COOL kit
including 1 x base plate, 2 x hose barb connectors,
1x 25ml, 1x 50ml , 1x100ml inserts and flask seals



DrySyn COOL Insulation

We recommend DrySyn COOL is used with insulation when taking temperatures below -10°C.
The optional Armaflex insulation we offer is designed specifically for sub-ambient conditions.

Ordering Information:

ADS8-I DrySyn COOL Insulation

Asynt Digitally Controlled Refrigerated Bath and Re-circulator

The Asynt digitally controlled refrigerated bath and re-circulator provides outstanding performance for routine and sophisticated applications requiring accurate temperature control in the range of -20 to 100°C .

Its immersion thermostat incorporates Intelligent Control Optimisation™ (ICO) for adaptive intelligent PID temperature control and includes a powerful integral pump making it suitable both for immersing samples and circulating temperature controlled fluid to external devices. The temperature range and heater power are automatically limited according to the liquid type selected.

The ADS-GR150 control unit has a host of powerful and convenient programming features for optimum application flexibility. These include a convenient heater timer for early starts/late shutdowns, a **programmable relay** for switching external devices on/off, option for remote temperature monitoring, **RS232 interface** for PC communication and data collection and **memory capacity for one program** of up to 30 segments.



- Simple-to-use rotor plus two keys provide access to the interactive interface for fast, accurate set-up
- Dual display: bright LED for temperature display plus 2-line 16 character LCD for easy programming
- Twin heaters, 2kW heater power for fast heat up
- Pt1000 external probe socket for remote monitoring
- Powerful integral pump, maximum flow 17L/min
- Operating setpoint plus 3 adjustable preset temperatures for convenience
- User calibration facility for optimum accuracy at the required operating temperature
- Variable high and low temperature alarm settings - configurable to switch a relay
- Visual and audible alarm - alert you when your attention is required
- Choice of five refrigerated tanks with different facilities, working volumes and cooling capacities

Technical Data	
Temperature range	-20°C to 100°C
Pump	
max. pressure (mbar)	270
max. flow (L/min)	17
Cooling power	
@ 20°C (W)	250
@ 0°C (W)	140
Tank capacity (L)	5
Drain	yes

Ordering Information:

ADS-GR150R2

Designed to take DrySyn COOL and Multi COOL down to -20°C with insulation

DrySyn® Vortex Overhead Stirrer System

The Vortex complements the DrySyn Multi range by offering overhead stirring for three reactions using only one overhead stirrer. The ability to perform multiple reactions improves efficiency and the compact footprint saves space in the laboratory. The Vortex overhead stirrer system is designed to agitate even the most viscous solutions and can be placed on any hotplate stirrer to heat reactions. A complete package is available including Heidolph Overhead Stirrer (see page 17).



- Operates with only one overhead stirrer for up to three 500ml flasks
- Compact footprint
- Accommodates 3x 100ml, 3x 250ml and 3x 500ml flasks
- Compatible with DrySyn Multi system (uses 100, 250, 500ml inserts from DrySyn Multi kits to accommodate flasks)
- Can be used with all standard hotplate stirrers or as stand alone
- Improved efficiency through ability to perform multiple reactions
- Excellent stirring for viscous solutions
- Easy and quick set up
- Greatly reduces grinding effects on solids (e.g. crystals)
- Available as package with Heidolph Overhead Stirrer model RZR 2052

Technical Information

Capacity	Max. 3x 500ml
Flask sizes	100ml 250ml 500ml
Speed range	50-500 rpm
Temperature ranges	max. +200°C on a stirrer hotplate

Ordering Information:

ADS 11 DrySyn Vortex Kit:

incl. 1x Vortex overhead stirrer, 3x stirrers,
3x guides and 3x 500ml inserts

Please see our price list for more details

Asynt Magnetic Hotplate Stirrer

- 3 year warranty
- Hermetically sealed and corrosion proof housing
- 800W heating power for fast heating-up
- Extra safety control circuit and hot plate cut-out by two independent temperature sensors
- Connector for electronic temperature control
- Enhanced heavy-duty stirring magnet drives stirring bars with ease
- Excellent stirring results in volumes up to 20 litres (H₂O)
- High efficiency motor with low power consumption
- Hot plate extremely resistant against scratches and chemicals through silumin surface
- Electronic current limiting to protect the motor



Ordering Information:
ADS-HP1

Support rod fits hotplate stirrer
ADS-SR1

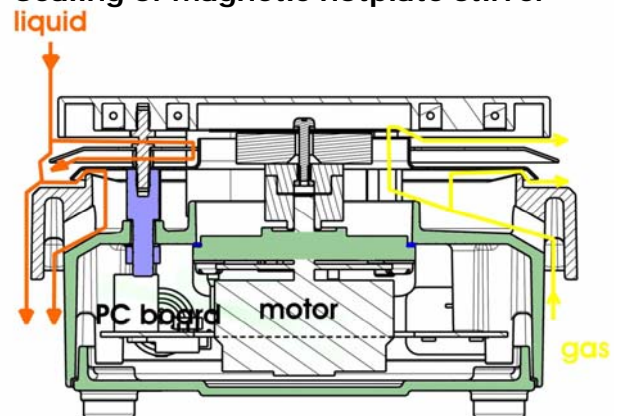
Green: hermetically sealed housing protects motor and PC board

Orange: path of liquid; even if liquid reaches heat shields it cannot penetrate to PC board or motor and will be led outwards

Yellow: gas cannot penetrate to PC board and motor

Blue: pins are screwed hermetically sealed

Sealing of magnetic hotplate stirrer



Technical Information	
Speed, max. (rpm)	1,400
Speed accuracy (%)	± 2
Heating Power (W)	800
Hot plate temp. (°C)	20-300
Medium temp. max. (°C)	250
Temperature accuracy, hotplate	± 5
External temperature control	Asynt Electronic Temperature Controller
Temperature accuracy with external temp. sensor (K)	± 1
Stirring capacity, max. (H ₂ O)	20

Asynt Electronic Temperature Controller

- 3 year warranty
- Compatible with the Asynt and Heidolph magnetic hotplate stirrers
- Fuzzy logic (i.e. fast heating) no temperature overshoot
- Sensor short-circuit and breakage protection
- Acid proof stainless steel temperature sensor
- Please order support rod separately



Temperature range (°C)	-50 to 300
Resolution (K)	1
Accuracy of measurement (K)	± 1
Measuring cycle (sec)	1.5
Control accuracy (K)	± 0.5
Sensor length (mm)	210
Cable length (mm)	700
Min. immersion depth (mm)	20
Ambient temperature range (°C)	-5 to 60
Housing	Polyamide
Weight	0.3
Dimensions l x w x h (mm)	54x 22x 126
Power supply	9-15V, max. 20mA

Ordering Information:
ADS-TC1

Support rod fits hotplate stirrer ADS-SR1

FlowSyn

Continuous Flow Reactor

FlowSyn is a fully integrated, easy to use continuous flow reactor for seamless optimisation, synthesis and scale up from milligrams to hundreds of grams.

It has been designed by a team of experienced flow chemists and engineers as a modular system, capable of being easily upgraded as the chemist's knowledge and needs grow.

Why choose FlowSyn?

- **Space saving**—Compact footprint, fully integrated system
- **Safety**— All pressurised parts are protected and isolated. An active pressure monitoring system is standard
- **Time saving**— Short set up and reaction times
- **Efficiency**— Offers unattended operation. System will equilibrate, run reaction and clean automatically. Collect all material or steady state fraction.
- **Future proof**—Base system has been designed to support all future features

Product specification

- 2 Ceramic/Hastalloy® HPLC pumps
- Optional injection loops (manual or automated)
- Automated switching valve for solvent/substrate
- Automated collection/waste valve
- Pressure sensor for detecting leaks or blockages
- Coil reactor for reactions up to 260°C; 500psi
- Temperature controlled heat exchanger
- Column reactor for clean up/reactions up to 150°C
- Pressure regulator—superheat reactions
- Software interface for easy reaction set up, no calculations required

Benefits of Flow Chemistry

- Excellent control of exothermic reactions
- Excellent heat transfer and mixing to produce reproducible results
- Rapid optimisation of conditions with minimal material
- Scale up using optimised conditions
- Improved selectivity of reactions

Contact us for further information on running multiple experiments and integrating a fraction collector.



Ordering Information:

Please contact us to discuss your specific requirements.

ReactoMate

Controlled Lab Reactors

The ReactoMate laboratory reaction system offers precise control of reaction variables, a powerful direct drive overhead stirrer and excellent reaction visibility with the vacuum jacket option. The standard systems available are fully customisable to the user's requirements with an extensive range of options. Asynt also supplies Heidolph Overhead Stirrers (see page 17) to complement ReactoMate.

Our team of experts will work in close cooperation with you to ensure you obtain the exact product required, to the highest possible standard.



Pictured:
1000mL
ReactoMate CLR with the vacuum jacket
option.

Standard ReactoMate systems are available at scales from 50mL to 30L and comprise of the following:

- Single jacketed reaction vessel with zero dead space bottom drain valve (vessel can be linked to a suitable heater/chiller)
- Glass multi neck reaction lid (PTFE option including clamp and o-ring)
- Support system

Common options for the ReactoMate range include:

- Heating/Cooling circulator (-80°C to +200°C)
- Vacuum jacket for low temperature performance and better visibility when sub-ambient
- Overhead stirrer, stirrer guide, shaft blade
- Quick release connections for easy vessel change
- Data logging of pH, temperature etc.

Other available accessories include:

- Addition vessels
- Condensers
- Distillation glassware
- Oil bubblers

All of our reaction systems can be designed to the customer's individual requirements and specifications.

Ordering Information:

Please contact us to discuss your specific requirements.

ReactoMate Accessories

PTFE Reactor Lids

- Robust material offers reduced risk of damage to lid from dropping or fractures
- Designed to securely support a wide range of standard and analytical probes
- Reduced lid condensation during reaction
- Improved thermal insulation compared to glass
- Flat, dished design of lid reduces deadspace and overall system height
- Extremely versatile and cost effective
- Chemically inert
- Optional integral stirrer guides
- Fit with standard glass flanged vessels



- The Reactor lid system is designed to provide a versatile and cost effective means for the assembly of a whole range of components in flanged reactors and similar vessels.
- Manufactured from fully traceable PTFE materials, lids and fittings are chemically inert and very durable.
- The system consists of a basic plate into which are screwed a whole range of fittings to accommodate virtually every kind of component; condensers, columns, stirrers, temperature probes, *in-situ* analysis probes, sampling tubes etc.
- Allows you to plug unused openings, thus increasing versatility.

Technical Data	
Material	Pure PTFE or Glass filled PTFE
Plate Sizes	Internal diameter, Schott type profile 60, 100, 150, 200mm. Others available on request
Fittings	Standard Taper / NPT Thread. Compression—Bore (mm)/ NPT Thread Plugs— NPT Thread.
Ports	Vertical Angled Compound

Ordering Information:

Please contact us to discuss your specific requirements.

ReactoMate Accessories

Other PTFE components

We can offer a broad range of PTFE components which are

- Chemically Inert
- Designed to reduce contamination and simplify cleaning
- Non-Scratch
- Unbreakable

Shaft Stirrers

Shaft stirrers have a unique, fully moulded construction featuring a PTFE rotor moulded to a fully PTFE encapsulated steel reinforced drive shaft.

Different rotors are available.



Bellows

Flexible bellows connectors are machined from pure PTFE and are used to correct mis-alignment and relieve stress in glassware assemblies.

Connect directly to standard ground glass joints where trapezoidal sealing rings give medium to high vacuum performance. Inert and usable to ca. 280°C.



Shaft Guides

A simple shaft guide which features an adjustable replaceable compression seal.

- PTFE is the only media contact material
- For use with glass and metal shaft stirrers only
- Fits all standard glass joints



Joint Clamps

- Chemically inert and totally unaffected by laboratory chemicals
- Temperature resistant and maintain strength right up to 300°C
- Manufactured from pure PTFE with totally encapsulated steel springs
- Can be adjusted simply by compressing by hand
- Fit all standard ground glass joints



Stirrer Guides

For Glass, Metal and PTFE Stirrer Shafts

- High level of chemical resistance
- Anti-whip and reduced vibration
- Vacuum (5mmHg) and pressure (3-5psi) performance
- No shedding
- Self-releasing joint ring
- Maximum recommended speeds: continuous 500rpm, intermittent 800rpm



Temperature Probes

Combine the outstanding properties of PTFE with the reliability and accuracy of platinum resistance and thermocouple thermometry.

- Inert and Non Contaminating
- -180°C to +300°C
- Pressure Resistant



Probe/Thermometer Holder

Enables standard probes and thermometers to be assembled in standard taper laboratory glassware.

- Body is pure PTFE
- Fully adjustable with replacement Viton® seal
- Contact materials are glass and PTFE only



Ordering Information:

Please contact us to discuss your specific requirements.

Bespoke Scientific Glassblowing

Asynt offer specialist scientific glassblowing services made to the customer's requirements and specification.

High Quality Standards:

- All glassware is made to the highest quality standards, working to precise scientific specifications
- We are highly experienced in dealing with different industries and applications

Free consultation service:

- Together with our partner company we have got many years of experience
- We offer you free consultation service throughout the whole design process

Non-Standard equipment:

- We offer a full-bespoke service for your scientific glassware, enabling you to design (with our help if required) the piece of equipment that you specifically require

Modifications:

- Contact us if you would like an existing piece of glassware modified

Glassware meets all safety requirements:

- We ensure that all our products leaving the factory meet any important safety requirements



Ordering Information:

Please contact us to discuss your specific requirements.

Heidolph Electronic Overhead Stirrers

Electronic Stirrers are especially suitable for applications in which the viscosity varies during process, either through reaction or due to mixing.

Asynt supplies the complete range of Heidolph Overhead Stirrers which can be used for the Vortex Overhead Stirrer System and the ReactoMate Controlled Lab Reactors.

- Monitoring of viscosity changes
- Encapsulated housing, partly sealed against aggressive substances
- High and constant torque
- Excellent mixing properties even of high viscosity substances
- Maintains exact speed even under changing load
- Smooth start prevents spilling of media
- Accepts 200% peak overload
- Designed for continuous operation
- Ideal for use with DrySyn Vortex



Ordering Information:

Please contact us to discuss your specific requirements.

Pictured: RZR 2052 control.
Single speed gear, high torque

Heidolph Rotary Evaporators

Heidolph Rotary Evaporators are used for standard distillations, crystallisation, product concentration, powder drying and separation of one or several solvents.

High distillation rates and available vacuum/temperature programmability guarantee the fastest and most economical results for your application.

Laborota 4002 Control with hand lift

Rotary Evaporator including all general advantages plus additional features

- Set your required bath temperature, vapour temperature and vacuum with the user-friendly digital control panel
- Digital display for rotation speed, vapour temperature and bath temperature
- Evacuation can be stopped by the press of a button without opening the vacuum valve
- Start rotation, vacuum control and process timer all together with just one press of a button
- Set and program the 9 most common applications into memory
- Program your required vacuum changes in a ramp
- Process timer allows for unattended operations
- One heating bath for water and oil: 20°C—180°C
- Safety bath temperature backup system with additional control



Please contact us for ordering information

Heidolph Rotary Evaporators

Laborota 4000 eco

Analog Rotary Evaporator with hand lift

- Convenient large dial controls for adjustment of rotation speed (rpm) and heating bath temperature
- Rotation speed from 20 to 270 rpm
- Easy to operate smooth running hand lift
- Economical model, but very high quality construction
- Available with 3 glassware assemblies
- Plastic safety coating available
- Non-sticking vapour tube removes easily, eliminating broken glass
- Flask ejector presses off sticking evaporation flasks
- Unique large vapour tube offers fast distillation rates
- Three years warranty

Water bath

- Individual power switches for control panel and heating bath offers additional safety
- Bath features non-slip safety handles for safe and easy transport of bath
- Heating bath is constructed of an insulated double wall for your protection against burns and scalding



Technical Data	
Maximum temperature for water bath	100 °C
Temperature accuracy	±1 K
Overheat protection	110 °C
Material bath	stainless steel
Diameter bath	240 mm
Volume bath	4.3 l

Please contact us for ordering information

Heidolph Parallel Synthesis 1

Synthesis 1 is a modular concept with a wide scope of applications. The base unit can accommodate both reaction blocks for **solid phase synthesis** and **liquid phase synthesis** and can be used for **multiple evaporation** as well.

General Advantages

- Up to 24 samples to be synthesised simultaneously: volumes from 8 to 50ml
- 4 heating zones with individual heat control allow for different temperatures
- No counter contamination due to separate caps on all reaction vessels when performing parallel evaporation
- Quick and easy mixing of sample due to constant shaking
- Exceptional visual control of reaction due to circular design of reaction block and transparent reaction vessels
- Built-in process timer for unattended operation
- Cooling down to -80°C in conjunction with a glove box by connection to an external chiller circulator



Multiple Evaporator



Liquid Phase Synthesis



Base Unit



Solid Phase Synthesis

Ordering Information:
Please contact us

Technical Data

Number of reaction vessels	12 reaction vessels of 50ml each 16 reaction vessels of 25ml each 24 reaction vessels of 10ml each
Temp. range/ heating and cooling	Up to $+160^{\circ}\text{C}$ Down to -80°C with external chiller
Footprint	310mm x 500mm
Heating	4 different heating zones with individual heat control and temperature display

Heidolph Synthesis 1 for Solid Phase Synthesis

For chemical reactions and processes using scavenger resins or solid supported reagents.

Synthesis 1 allows for adding samples, detaching from the resin, filtration of by-products and purification of the product.

- Simple dismantling of reaction vessels
- Reaction vessels feature valves and eliminate the use of needles
- Reaction vessel screw fittings allow access for cleaning and filter replacement
- Washing and recovery of product by vacuum filtration
- All reaction vessels feature bottom valves for draining of washing solvent and for product collection
- Central connection and distributor for vacuum and inert atmosphere



Heidolph Synthesis 1 for Liquid Phase Synthesis

For solution phase chemical reactions and processes.

Synthesis 1 allows for set up and work up of a classical chemical synthesis.

- Simple dismantling of reaction vessels
- Reaction vessels feature valves and eliminate the use of needles
- Reaction vessel screw fittings allow access for cleaning and filter replacement



Vacuubrand PC 3001 Vario Chemistry Pump Unit

For evaporation, distillation, drying and all other processes that require precise vacuum control, continuously adjustable pumping speed or demand-oriented vacuum supply.

Vacuubrand Vario chemistry pumping units control the vacuum level with pinpoint precision by adjusting the diaphragm pump's motor speed continuously. They enable automatic detection of vapour pressure and variable adjustment of the vacuum level to the process. The fast and precise adaptive control always adjusts the pumping speed to the optimal level, regardless of installation size or gas volume.

Process times are shortened by the high evaporation rate. Through constant evaporation, an optimal solvent recovery rate can be achieved.

Advantages

- **Intuitive Operation** through clear text menus and easy to handle rotary jog wheel control
- **Over 30% shorter process times** through continuous optimal high evaporation rates and speed control
- **Ideal for high boiling point solvents** with ultimate vacuum down to 2 mbar (even with gas ballast 4 mbar)
- **Safe reproducibility** for complex applications *via* user programmable process cycles
- **Automatic boiling point detection** genuine fully automatic process control without user programming
- **Proven reliability** even in touch operating conditions (successor to the market leading PC 2001 Vario)
- **Bi-directional interface** (RS 232C)



Technical Data	
Diaphragm pump	chemistry diaphragm pump MD 1C VARIO-SP
Vacuum controller	CVC 3000
Max. pumping speed (DIN 28 432) 50/60 Hz m ³ /h	1.7
Ultimate vacuum (total) mbar	2
Ultimate vacuum with gas ballast mbar	4
Dimensions (L x W x H)	294 x 328 x 480
Mass ca. kg	7.7

Please contact us for ordering information

Vacuubrand Diaphragm Pumps A new class of oil-free diaphragm pumps

Improved performance

- Increased pumping speed (approx. 10% more than the predecessors) and better ultimate vacuum extend the application field both in the laboratory as well as for industrial purposes

Uncompromising chemistry design

- Chemically resistant fluoroplastics for all gas contacting parts

Long diaphragm lifetime

- PTFE sandwich design and stress-free fixing of the diaphragms

Easy service

- Independent changing of diaphragm or valves due to novel integrated valve head assembly
- Easy dismantling, cleaning and safe reassembling without the need for readjustment

Whisper quiet and ultra low vibration

- Due to compact drive with patented motor drive system
- Built in component for sensitive equipment in both the laboratory and the industry

Superior vapour tolerance

- Due to integrated tubing connections

Technical Data MZ2C	
Max. pumping speed 50/60 Hz m ³ /h	2.0/2.3
Ultimate vacuum (total) mbar	7
Ultimate vacuum with gas ballast (mbar)	12
Dimensions (L x W x H in mm)	243 x 243 x 198



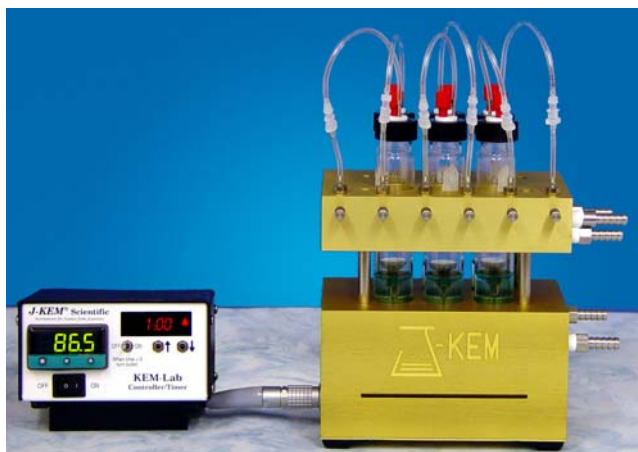
Pictured: MZ2C

Please contact us for ordering information

J-KEM Personal Reaction Station Heat, Cool, Reflux– Classical Synthesis in a Parallel Format

The Personal Reaction Station is excellent for lead development and high throughput applications.

- Precise temperature control
- Powerful magnetic stirring
- Inert atmosphere for each reactor
- Reactions are run in 50ml glass tubes that fit inside a heated and cooled reactor base
- Six built in magnetic stirrers provide powerful and even stirring even for viscous and heterogeneous reactions
- Reflux condenser plate surrounds the midsection of each tube allowing a continuous reflux with no cross contamination or solvent loss
- Reactors connect to an inert gas manifold through separate needle valves and quick disconnect fittings, so that individual reactors can be added or removed without disturbing the atmosphere in other reactors
- All reactors have Teflon septummed needle ports for adding reagents and sampling



Technical Data

Temperature range	-80 to 130°C
Temperature variation	±0.5°C
Stirring speed	60-1000 rpm
Condenser efficiency	2% loss of CH ₂ Cl ₂ after 7 days at reflux

J-KEM Digital Temperature Controllers

Precision Controllers for Research

- Regulate volumes from 100 µl to 22L

High Power Temperature Controller

- High current controllers for 22L to 100L

Economy Temperature Controller

- Digital temperature controllers
- PC control and data logging
- Compact size
- Custom made



All J-KEM products can be manufactured to individual customer requirements.

Please contact us for ordering information

Julabo Cryo-Compact Circulator CF41 For Internal and External Temperature Applications

The new CF series offers compact refrigerated/heating circulators.

With small overall dimensions the units can even be placed on a very small footprint or within a complex installation.

The maximum temperature of +40°C as well, as a ventilation air cooling, allow easy installation of units side by side or directly under a fume hood. Furthermore all the models feature pump connections for external temperature applications and a bath opening for temperature control of small objects directly in the circulator bath.

Wetted parts are made of high quality stainless steel or plastic.

The instruments provide reliable Microprocessor electronics with high temperature stability as well as warning and safety functions.

- Ergonomic design and easy operation
- Small overall dimensions for lowest space requirement
- Splash-proof keypad
- Bright VFD display and interactive LCD dialog display
- Highly precise ICC cascade temperature control
- RS232/RS485 interface for PC connection
- Electronically adjustable pump stages
- External Pt100 sensor connection
- Integrated programmer with 6x60 program steps
- Early warning system for low liquid level



Technical Data	
Working temperature range	-40 to 200 °C
Temperature stability	±0.02 °C
Display resolution	0.01 °C
Heater capacity	2000 W
Cooling capacity	20 0 -20 -30 °C 470 400 280 120 W
Pump capacity	Pressure: 0,7 bar Suction: 0,4 bar Flow rate: 22-26 L/min
Filling volume	5.5 L

Please contact us for ordering information

Julabo Refrigerated/Heating Circulator FP50-HL

Refrigerated/Heating Circulator for internal and external temperature applications with proportional cooling control

JULABO Refrigerated & Heating Circulators for heating and cooling are suitable for external temperature tasks and for temperature applications directly in the bath.

Powerful circulating pump systems and high heating and cooling capacities guarantee short heat-up and cool-down times. The inevitable dust accumulation that occurs in refrigeration systems is solved by means of an easily removed venting grill, which allows for easy cleaning. All models have a drain tap on the front allowing the fluid to be drained easily.

- Keypad for setpoints, warning/safety values and menu functions
- TCF Temperature Control Features to optimize the control behaviour
- Pt100 External sensor connection for measurement and control
- SMART PUMP, electronically adjustable pump stages
- Proportional cooling control
- Active Cooling Control



Technical Data	
Working temperature range	-50 to 200 °C
Temperature stability	±0.01 °C
Display resolution	0.01 °C
Pump capacity	Pressure: 700 mbar Suction: 400mbar Flow rate: 22-26 l/min
Cooling capacity	20 0 -20 -40 °C 900 800 500 160 W
Temperature control	ICC
Ambient temperature	5 to 40 °C

Please contact us for ordering information

Julabo High Dynamic Temperature System Presto LH40

Instruments of the PRESTO series are the ideal solution for highly precise, external temperature applications. They offer rapid heating and cooling, wide working temperature ranges without changing fluids as well as highest performance with a small footprint.

The self-optimising controller (ICC - Intelligent Cascade Control) provides excellent temperature stability and optimised control.

- For highly precise, external temperature applications
- Rapid heating and cooling
- For isotherm realisation of chemical processes
- Wide working temperature ranges without changing fluids
- Highest performance with small footprint
- Bright VFD-Info-Display and interactive LCD display
- Stand-by input for external emergency switch-off
- Integrated programmer stores up to 6 profiles (60 sections each)
- Upper and lower temperature warning functions with interval tone
- High temperature cut-out (safety value) adjustable on the front



Technical Data	
Working temperature range	-40 to 250 °C
Temperature stability	±0.01 °C
Display resolution	0.01 / 0.01 °C
Pump capacity	Pressure: 1600 mbar Flow rate: 33l/min.
Cooling capacity	200 20 -20 -40 °C 1500 1000 400 50 W
Temperature control	PID+ICC
Ambient temperature	5 to 40 °C

Please contact us for ordering information

Custom Synthesis, API Manufacturing, Molecular Building Blocks



PharmaCore® offers:

- Custom organic synthesis
- cGMP scale-up
- Contract research
- Molecular building blocks
- Medicinal chemistry services

PharmaCore is a leader in fostering the commercial development of small molecule drug discovery and development in pharmaceutical discovery platform and biotechnology companies. The service PharmaCore offers parallels the drug discovery process and provides significant advantages at each step from lead discovery to lead optimisation, chemical synthesis and scale-up of pharmaceutical intermediates as well as chemical process R&D.



- PharmaCore is an industry leader in **custom organic synthesis** using diverse chemistries to produce active pharmaceutical ingredients and scaffolds
- PharmaCore has specialized GMP facilities for **scale-up** of pharmaceutical chemicals in multi-kilogram quantities. These include two GMP clean room synthesis laboratories. PharmaCore assures the highest standards of quality management backed by an extensive GMP documentation system
- PharmaCore's novel, drug-like **molecular building blocks** have been developed to be chemically unique, providing discovery chemists with new directions to novel compounds. PharmaCore continues to introduce new molecules, often unavailable elsewhere, that have broad application in medicinal and combinatorial chemistry
- PharmaCore can provide **medicinal chemistry services** to support the needs of companies seeking to discover new small molecule pharmaceutical products



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