

# DrySyn

## Reaction Blocks

**FAVS**  
Scientific Equipment

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*Sustainable  
solutions for  
laboratory heating  
and cooling*



**Asynt** 

*Collaborate | Innovate | Create*

# About Asynt

***Formed in 2003 with the aim to develop, supply and support new, sustainable and novel products central to the laboratory***

Since inception, we have developed many laboratory tools including the DrySyn range (a clean, safe alternative to oil baths and heating mantles) which both reduces costs in purchasing / disposal of oil and offers a reduction in energy consumption.

We also pride ourselves in reducing laboratory water consumption using our CondenSyn waterless air condenser units which offer the benefits of reducing the risk of flooding whilst saving valuable budget and planetary resources.

Other key product lines available include Asynt ReactoMate Lab Reactors, Asynt High Pressure Reactors, and tools from complimentary high end manufacturers; Grant, Huber, IKA, Julabo, Porvair, Telstar and Vacuubrand amongst others.





We also serve other markets such as biology with products of our own manufacture; one such example is the ChilliBlock for precision homogeneous temperature control of multiple biological samples. In addition, Asynt also provides solutions for automotive/aerospace electronics and battery research development.

Our sales team are all chemists who are both knowledgeable and dedicated to customer support, with a combined experience of over 100 years in the scientific sector. We work hard to help our customers find the best possible solutions for their requirements, whether this means an off-the-shelf solution or something custom manufactured specifically – or “Asyntised” to meet their needs.

*“Asynt’s broad offering, including own-label off the shelf solutions, bespoke custom designs and complimentary high-end products from alternative manufacturers, allow us to be the one-stop equipment supplier, especially for chemistry research labs..”*

**Martyn Fordham,  
Managing Director, Asynt**



**Asynt**

# DrySyn – The Complete Solution

*The DrySyn range of heating & cooling blocks*

## **New ideas... complete solutions**

The DrySyn range of heating & cooling blocks enable clean, safe synthesis for single or multiple reactions. Developed by chemists, including valued contributions from organisations such as the University of Cambridge, DrySyn is an established technology, chosen by the leading laboratories around the world.

Precision engineered in the UK, all DrySyn blocks are manufactured from traceable aluminium and are anodised to give a chemical resistant finish.

DrySyn allows for the complete replacement of unsafe oil baths in the lab. So whether you use round bottom flasks, tubes or vials, either one at a time or in parallel, there are DrySyn options available for all.

*“We used to use oil baths to heat reactions but these are a fire hazard as well as being messy and leaving residues which can be a source of contamination. DrySyn offers us the freedom to heat different sizes of flask and tube and has a convenient place for a thermocouple for controlled heating. The advantages of the DrySyn are obvious to even the most hardened researcher.”*

**Dr Richard Turner,  
University of Cambridge.**



## **The Benefits Over Oil Baths:**

- ✓ Removes risk of oil fires
- ✓ No risks associated with oil spillages
- ✓ No toxic fume emission
- ✓ Reduction in electrical energy consumption
- ✓ No costly maintenance or disposal of oil

# Why DrySyn?

The long-term safe & cost effective solution

Asynt

Traditionally, oil baths have been used to heat reactions within the laboratory even though they pose a number of health and safety risks.

DrySyn not only reduces these risks but also provides a long-term and cost effective solution.

## DrySyn Safety & Versatility

- ✓ Removes the fire-risks associated with oil baths
- ✓ Low well design prevents cracking or jamming of glassware & provides excellent reaction visibility
- ✓ Chemical & solvent resistant anodised finish
- ✓ Secure lifting handles to ensure the safe removal from heat sources
- ✓ Accommodate the full range of laboratory glassware from <1 mL up to 5000 mL
- ✓ Adjustable bases offer compatibility with any hotplate stirrer
- ✓ Suitable for use with multi-neck flasks
- ✓ Modular system with small footprint



*“ We invested in DrySyn because it is a cleaner, safer, and in the long run cheaper solution compared to oil baths. DrySyn lets you carry out synthesis with your regular hotplate equipment while at the same time providing a uniform heat transfer to the flask, better temperature control compared to a heating mantle and eliminating the risk of oil spillage which is potentially harmful. It is a good helping hand in our synthesis and it helps us to better follow our University safety policies. ”*

**Iacopo Benesperi,**  
Monash University, Australia.



## Key Features of DrySyn

- Excellent reaction visibility
- Heat-resistant handles
- Temperature probe holes
- Chemical resistant finish
- Universal hotplate compatibility
- Uniform heat transfer
- All key sizes catered for as standard
- Fully customisable
- Single-position or parallel-position synthesis
- Designed for use with ISO standard round bottom flasks
- Easy to clean



# DrySyn Single Position Heating Blocks

## DrySyn Classic

25 mL to 1000 mL

The original member of the DrySyn family, the DrySyn Classic allows the scientist to use any standard round-bottom flask from 25 mL to 1000 mL.

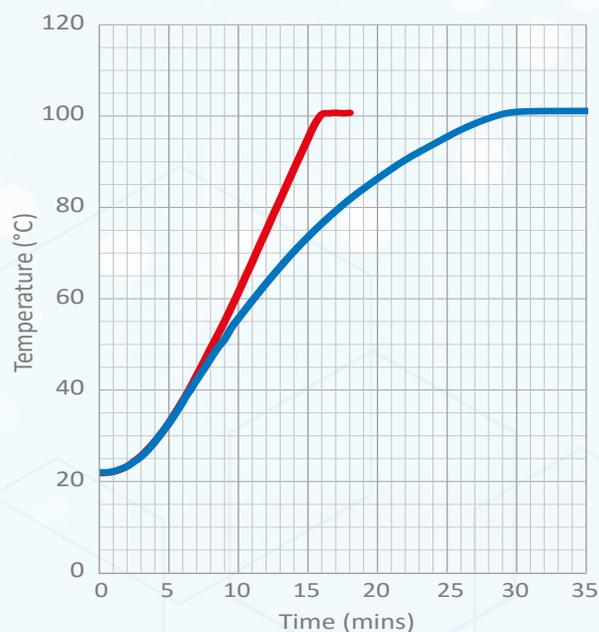
The base unit of the DrySyn Classic accepts a standard 1000 mL round bottom flask, the base also allows the inserts to be used to adapt it to all standard flask sizes from 500 mL to 25 mL. A popular sale for us is a complete kit which includes the base and 4 x inserts allowing reactions to be performed from 50 mL to 1000 mL in the same unit,

All single-position base units include two heat-resistant handles for safe handling when hot and adjustable feet to allow complete compatibility with any hotplate stirrer.



## DrySyn CLASSIC Heat Up Times

100 mL Flasks & Inserts, 50 mL Water



— Water Temperature (hotplate set to 300 °C)  
— Water Temperature (hotplate set to 120 °C)

\* Comprehensive parts & price list available



### Popular Purchase Options\*

#### ADS1: DrySyn Classic Kit

Includes 1000 mL base and 4 x adapter inserts for 50, 100, 250 & 500 mL round bottom flasks.

#### ADS1-25: DrySyn Classic 25 mL Adapter Insert

#### ADS1-A: DrySyn Classic Starter Kit

Includes 1000 mL base and 1 x adapter insert (specify size).



## DrySyn Scholar & Scholar Plus

25 mL to 250 mL

For those working only with smaller volumes, the DrySyn Scholar offers a no-compromise solution.

- Base unit accommodates a 250 mL round bottom flask
- Flask inserts available for 100 mL, 50 mL and 25 mL
- Ideal for academic teaching laboratories



### Popular Purchase Options\*

#### ADS14: DrySyn Scholar Kit

Includes 250 mL base and adapter insert for 100 mL round bottom flasks.

#### ADS14-50: DrySyn Scholar 50 mL Adapter Insert



“Investment in DrySyn technology has allowed us to reproducibly scale-up our customer’s synthetic reactions from milligrams to hundreds of grams scale.”

*Dr Michael McKenzie,  
Head of Operations,  
Charnwood Molecular.*



## DrySyn MAXI

2000 mL & 3000 mL

- Stand-alone bases for both 2000 mL and 3000 mL round-bottom flasks.
- 2000 mL flask insert available for use with larger base.



### Popular Purchase Options\*

#### ADS2: DrySyn MAXI Complete Kit

Includes 3000 mL base and adapter insert for 2000 mL round bottom flasks.



## DrySyn Super MAXI

4000 mL & 5000 mL

- Stand alone base for 5000 mL round bottom flasks.
- 4000 mL flask insert available for use with larger base.



### Popular Purchase Options\*

#### ADS4: DrySyn Super MAXI 5000 mL Base

\* Comprehensive parts & price list available

# DrySyn Multi Position Heating Blocks

for vials and flasks  
up to 500 mL

## Why DrySyn MULTI?

The DrySyn MULTI range of reaction blocks convert any hotplate stirrer into a flexible, parallel synthesis platform, whilst retaining the ability to perform single reactions.

By removing the need for multiple hotplate stirrers, DrySyn MULTI provides a cost effective, space-efficient solution.

With a wide range of fully-interchangeable inserts available for tubes, vials and round-bottom flasks, the DrySyn MULTI also allows for fast, energy-efficient heating.



The unique DrySyn MULTI clamps allow for a tidy and compact setup of 3 parallel reactions



1 Reaction



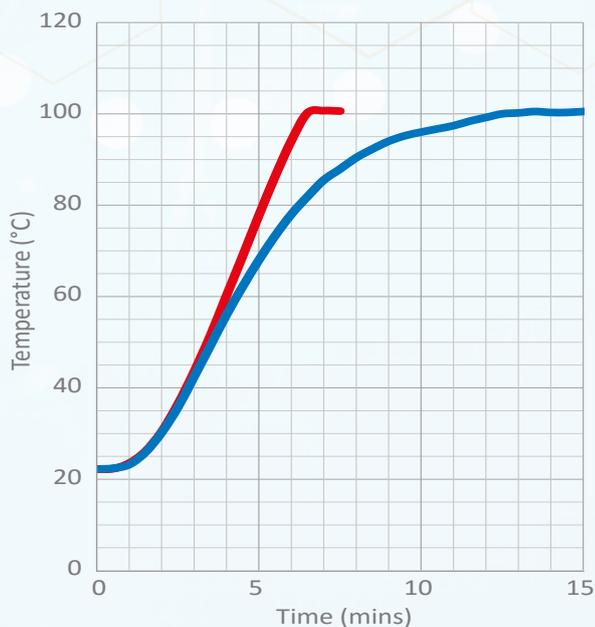
3 Reactions



Up to 27 Reactions

## DrySyn MULTI-E Heat Up Times

100 mL Flasks & Inserts, 50 mL Water



- Water Temperature (hotplate set to 300 °C)
- Water Temperature (hotplate set to 120 °C)



# DrySyn Multi Position Heating Blocks

for vials and flasks  
up to 500 mL



To see DrySyn parallel stirring in action visit the Asynt YouTube channel.

**Four bases. Endless possibilities.**



**UNO**

Up to 1 x 500 mL



**MULTI-E**

Up to 3 x 100 mL



**MULTI-M**

Up to 3 x 250 mL



**MULTI-S**

Up to 3 x 500 mL



**MULTI-E CLAMP**



**MULTI-M CLAMP**



**MULTI-S CLAMP**

All bases in the DrySyn MULTI range are designed to allow placement of one insert in the centre position, providing a stable and secure single-reaction setup.

Every MULTI insert has the same footprint meaning that any sized insert can be used with any base in this way. We realise that flexibility is key & so, by ensuring that the footprint of every DrySyn MULTI insert is the same, you can easily mix and match the sizes you use for parallel reactions.



The largest sized insert you use in parallel will determine the DrySyn base plate you'll need!

As round-bottom flasks sizes increase so do the profiles of the MULTI inserts. For this reason we offer three different bases depending on the largest flask size you wish to work with in parallel.

The MULTI-E base can accommodate up to 3 x 100 mL inserts, the MULTI-M base up to 3 x 250 mL inserts & the MULTI-S base up to 3 x 500 mL inserts.



# DrySyn Reaction Vial Inserts



## DrySyn Reaction Vial Inserts

- Available in packs of 3 in a wide range of standard sizes to suit many popular vials.
- Compatible with all DrySyn MULTI bases to allow up to 27 parallel reactions, depending on insert size.
- Can be used interchangeably and in conjunction with DrySyn MULTI inserts for round-bottom flasks.
- Custom manufacture also available for your vial of choice.

### Full Range of Sizes

Hole size (Ø mm)	Holes per insert	Suited for:
11.80 Ø	9	2 mL HPLC sample vials
15.00 Ø	5	1 dram vials
16.20 Ø	4	CEM microwave tubes
17.40 Ø	4	Biotage 2-5 mL microwave tubes & 2 dram vials
20.20 Ø	4	Robot tubes
24.40 Ø	4	24mm boiling tubes
25.75 Ø	4	Wheaton reactor vials
27.65 Ø	4	20 mL Scintillation vials
28.20 Ø	4	Biotage 10-20 mL microwave tubes
17.20 Ø	5	Biotage 0.5 – 2 mL microwave vials (holes are tapered).
5.5 Ø	10	NMR tubes.
Custom	Custom	Customers own vials.
Custom	1	Schlenk tubes.



### Popular Purchase Options\*

#### ADS3-R-(size): DrySyn Reaction Vial Inserts

Includes 3 x inserts of one size.

#### ADS3-R-A: DrySyn Reaction Vial Starter Kit

Includes 3 x inserts of different sizes.

#### ADS3-RT-17.20: DrySyn Tapered Reaction Vial Inserts

Pack of 3.

“Absolutely essential for any modern chemistry lab! A simple way of being able to effectively carry out multiple reactions at once, using one heater-stirrer. The ability to be able to use with disposable microwave vials and screw cap vials is their best-selling point, I do all my reactions in these.”

**Dr Liz Jones,**  
Team Leader, Chemistry.



\* Comprehensive parts & price list available

# DrySyn Multi Popular Purchase Options



## **MULTI-E** Up to 3 x 100 mL

- Up to 3 x 100 mL round-bottom flasks in parallel.
- Compatible with all inserts in the DrySyn MULTI range in a central single position.

## **MULTI-M** Up to 3 x 250 mL

- Up to 3 x 250 mL round-bottom flasks in parallel.
- Compatible with all inserts in the DrySyn MULTI range in a central single position.



### **Popular Purchase Options\***

#### **ADS3: DrySyn MULTI-E Complete Kit**

Includes MULTI-E base, 3 x 25 mL inserts, 3 x 50 mL inserts & 3 x 100 mL inserts.

#### **ADS3-A: DrySyn MULTI-E Starter Kit**

Includes MULTI-E base, 1 x 25 mL insert, 1 x 50 mL insert & 1 x 100 mL insert.

#### **ADS3-C: MULTI-E 3-Position Clamp**



### **Popular Purchase Options\***

#### **ADS5: DrySyn MULTI-M Complete Kit**

Includes MULTI-M base, 3 x 100 mL inserts & 3 x 250 mL inserts.

#### **ADS5-S: DrySyn MULTI-M Super Kit**

Includes MULTI-M base, 3 x 25 mL inserts, 3 x 50 mL inserts, 3 x 100 mL inserts & 3 x 250 mL inserts.

#### **ADS5-C: MULTI-M 3-Position Clamp**

## **MULTI-S** Up to 3 x 500 mL

- Up to 3 x 500 mL round-bottom flasks in parallel.
- Compatible with all inserts in the DrySyn MULTI range in a central single position.

## **Parallel Synthesis Kits**

- Up to 3 x reaction vial inserts in parallel.
- Ideal for reaction screening.



### **Popular Purchase Options\***

#### **ADS6: DrySyn MULTI-S Complete Kit**

Includes MULTI-S base, 3 x 250 mL inserts & 3 x 500 mL inserts.

#### **ADS6-C: MULTI-S 3-Position Clamp**



### **Popular Purchase Options\***

#### **ADS3-PS: DrySyn Parallel Synthesis Kit**

Includes MULTI-E base and 3 x vial inserts of one size.

#### **ADS3-PSS: DrySyn Parallel Synthesis Starter Kit**

Includes MULTI-E base and 3 x vial inserts of different sizes.

\* Comprehensive parts & price list available

# DrySyn OCTO & OCTO Mini

## DrySyn OCTO

- 8 parallel positions.
- Powerful magnetic stirring.
- Compact size.
- Gas tight closure allowing inert atmosphere to be used.
- Ideal for working volumes up to 6 mL.
- Low cost consumables.
- Additions or sampling possible whilst under inert conditions.
- Air-cooled condensing.
- Upgrade to OCTO+ to run up to 24 reactions simultaneously.



## Popular Purchase Options\*

### ADS19-A: DrySyn OCTO Reaction Station Starter Kit

Includes OCTO reaction station and 10 each of tubes, caps, septa & stirrer bars.

### ADS19-BASE: DrySyn UNO Base

### ADS19-PLUS: DrySyn OCTO PLUS Reaction Station

Includes 3 x OCTO reactions stations, DrySyn MULTI-M base, 72 tubes, 300 caps, 300 septa & 30 stirrer bars.



## DrySyn OCTO Mini

- Designed for shorter length tubes, allowing for easy sampling using a standard syringe needle.
- Conversion kit available for modification of standard DrySyn OCTO Reaction Station.
- Consumables available.



## Popular Purchase Options\*

### ADS19-MINI: DrySyn OCTO Mini Reaction Station

### ADS19-MC: DrySyn OCTO Mini Conversion Kit

includes central support rod, hex key & 24 x short tubes.

“ We have used the DrySyn OCTO to perform a variety of heterogeneous catalysis reactions under nitrogen to eliminate formation of side products. Using DrySyn OCTO – parallel reactions are very easy to set up saving time on the degassing and space on the heating arrangement required. We all like the unit and it has particularly helped us improve workflow when tasked with doing arrays of heated reactions in early discovery chemistry. ”

**Peter Blencowe PhD,  
Senior Scientist,  
CRUK Theapeutic Discovery  
Laboratories, UK**



\* Comprehensive parts & price list available

# DrySyn Spiral Evaporator

## DrySyn Spiral Evaporator

- Developed by Asynt, in conjunction with BioChromato (Japan).
- Patented spiral plug technology enables scientists to evaporate tubes directly in DrySyn Reaction Vial Inserts, up to 4 samples at a time without bumping.
- Rapidly concentrate even high boiling solvents such as DMSO, DMF, NMP and water in tubes, without heating to high temperatures.
- Glass enclosure allows nitrogen purging for air-sensitive samples.
- Requires house vacuum or suitable vacuum pump for operation†
- Consumables and accessories available separately.
- Compatible with the DrySyn MULTI Reaction Vial Inserts - or choose custom inserts to suit your needs



### Popular Purchase Options\*

#### ADS16-4: DrySyn Spiral Evaporator

Includes evaporator manifold, blanking plugs and 4 x spiral plugs of one size.

#### ADS3-R-(size): DrySyn Reaction Vial Inserts

Includes 3 x inserts of one size.

1. Vacuum pulled
2. Promotes gas influx through a groove on the spiral plug
3. Generating spiral air flow
4. Increasing the contact surface area between liquid and gas
5. Promotes solvent evaporation



† To discuss vacuum requirements and suitability contact your local representative

### Evaporation Rates

Solvent (5 mL in 20 mL vial)	Flow Rate per Tube (m <sup>3</sup> /h)	DrySyn Block Temperature		
		26 °C	40 °C	70 °C
Hexane	1	5	3	3
Acetone	1	7	4	3
Ethyl Acetate	1	9	6	5
Acetonitrile	1	18	9	8
Methanol	1	31	10	6
Ethanol	1	31	10	6
Deionized Water**	2	95	49	28
DMF**	2	68	43	24
DMSO**	2	241	195	69
NMP**	2	N/A	N/A	71

\*\* Gas purge data



To see DrySyn parallel stirring in action visit the Asynt YouTube channel.

\* Comprehensive parts & price list available

# DrySyn SnowStorm ONE

## Sub-ambient reactions with a small footprint

Built on the success of the DrySyn heating blocks, DrySyn SnowStorm is an integrated concept for heating and cooling from -30 to +150 °C; offering options for standard round bottom flasks from 25 mL to 1000 mL in addition to reaction vials of all sizes. Compatible with many laboratory heater-chiller circulator systems, the DrySyn SnowStorm range offers a cost-effective alternative to smaller, jacketed, glass reactors.

- Temperature range from -30 to +150 °C (dependent upon chosen circulator).
- Stable temperature control for prolonged periods allowing for extended, unattended operation.
- Ideal for precise temperature ramping.
- Exchange glassware and reconfigure systems in seconds, without disrupting the thermal bath fluid.



## DrySyn SnowStorm ONE

### For 50 mL to 1000 mL

The DrySyn SnowStorm ONE offers a single-position temperature controlled base compatible with a range of adapters for round-bottom flasks from 50 mL to 1000 mL.

- Each flask adapter is supplied with a sealing ring and weight to prevent ice formation between the flask and block.
- Can be used with a magnetic stirrer plate or bench-mounted for use with an overhead stirrer motor.

*We can supply heater/chiller systems from key manufacturers such as Grant, Huber and Julabo, amongst others. Contact us for further information.*



### Popular Purchase Options\*

#### ADS8: DrySyn SnowStorm ONE Kit

Includes single-position base plate with hose-barb connectors, 1 x 50 mL adapter with weight & seal, 1 x 100 mL adapter with weight & seal, 1 x 250 mL adapter with weight & seal, 1 x 500 mL adapter with weight & seal and 1 x 1000 mL adapter with weight & seal.

# DrySyn SnowStorm Parallel Cooling



## DrySyn SnowStorm MULTI

For 25 mL to 100 mL

The DrySyn SnowStorm MULTI allows up to 3 parallel, temperature-controlled, reactions in round-bottom flasks from 25 mL to 100 mL.

- The specially designed SnowStorm MULTI inserts are supplied with sealing rings and weights to prevent ice formation between flask and block.
- For use with any magnetic stirrer plate.
- SnowStorm MULTI base also compatible with DrySyn reaction vial inserts.



## DrySyn SnowStorm Reactor

For 2 mL to 20 mL vials

The DrySyn SnowStorm Reactor allows for parallel, temperature-controlled, reactions in tubes and vials of various sizes.

- Utilises standard DrySyn reaction vial inserts.
- The use of a borosilicate glass inverting dome prevents ice formation within the block wells.
- For use with any magnetic stirrer plate.



### Popular Purchase Options\*

#### ADS10: DrySyn SnowStorm MULTI Kit

Includes MULTI base plate with hose-barb connectors, 3 x 25 mL inserts, weights & seals, 3 x 50 mL inserts, weights & seals and 3 x 100 mL inserts, weights & seals.

#### ADS3-C: MULTI-E 3-Position Clamp



### Popular Purchase Options\*

#### ADS13-S-(size): DrySyn SnowStorm Reactor Kit

Includes MULTI base plate with hose-barb connectors, glass inverting dome and 3 x DrySyn reaction vial inserts of one size.

#### ADS13-S-RC: DrySyn SnowStorm Custom Reactor Kit

As above, but supplied with 3 x DrySyn reaction vial inserts in one custom size.

\* Comprehensive parts & price list available

# DrySyn Vortex

## Key Features of DrySyn Vortex

- DrySyn Vortex offers our customers the ability to work with higher viscosity materials in parallel where magnetic stirring is not strong enough or indeed where materials could be damaged by the grinding effect of a stirring bar.
- The DrySyn Vortex works with our standard DrySyn MULTI inserts for round-bottom flasks, from 100 mL up to 500 mL.
- A mechanical gearbox converts the drive of one standard overhead stirrer motor into 3 shafts for powerful overhead stirring.
- Heating is provided by any standard laboratory heating plate.
- Cooling base available upon request.
- Optionally available for use with laboratory beakers up to 600 mL volume.



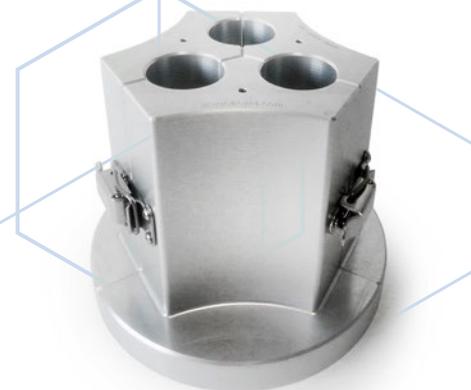
## Popular Purchase Options\*

### ADS11: DrySyn Vortex Kit

Includes DrySyn Vortex unit, clamp, 3 x stirrer shafts and guides and 3 x 500 mL DrySyn MULTI inserts.

## Custom Solutions for Your Laboratory

- Need something different for your research? We offer a complete design & manufacture service to provide bespoke solutions for your laboratory requirements.
- For further information, and to see more examples of our custom projects, visit [www.Asyntise.com](http://www.Asyntise.com).



\* Comprehensive parts & price list available

# DrySyn Accessories

## Asynt Hotplate Stirrer Kit

- This complete magnetic hotplate stirrer kit comprises: hotplate stirrer, temperature sensor, electronic contact thermometer, holding rod, support rod, boss head clamp.
- Offers three independent and adjustable safety circuits within the kit.
- Digital display with precise temperature control and stability to  $\pm 0.5$  °C.
- High power bar magnet drive, ideal for viscous samples and parallel synthesis applications.
- CE Certified, manufactured for Asynt in Germany.
- Ask us about our special package deals!



### Popular Purchase Options\*

#### ADS-HP-S-NT: Asynt Complete Stirrer Kit

Includes magnetic hotplate stirrer, temperature sensor, electronic contact thermometer, holding rod, support rod and boss head clamp.



## Compact Safety Shields

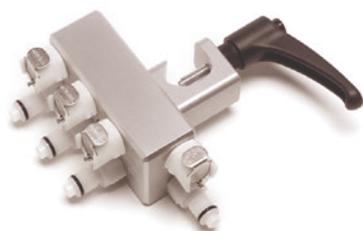
- Provide protection from heating components.
- Fit neatly around any stirrer hotplate to provide robust, convenient protection from splashes, aerosols and spills.
- Shield apparatus from fumehood draft.
- Available in two convenient sizes.



### Popular Purchase Options\*

#### ADS-LSS: Compact Laboratory Safety Shield

#### ADS-LSS2: Larger Laboratory Safety Shield



### Popular Purchase Options\*

#### ADS3-WM: DrySyn Water Manifold

#### ASY-1025-D: DrySyn Water Manifold Fittings

## DrySyn Water Manifold

- Converts a single cooling stream into three separate feeds and into one drain.
- Ideal for pairing with a recirculating chiller.
- Avoid daisy-chaining set up.

## Other Accessories

- Other accessories include Wheaton V-vials, NMR tubes, magnetic stirrer bars and more.

\* Comprehensive parts & price list available

# CondensSyn

Waterless Reflux Condenser

## Key Features of CondensSyn

- Robust
- Easy to clean
- High performance
- Simple and safe to use
- Environmentally friendly
- Short pay-back time
- Eliminates flood risks



## Popular Purchase Options\*

### **GB-C-200-(cone size): CondensSyn MINI Waterless Reflux Condenser**

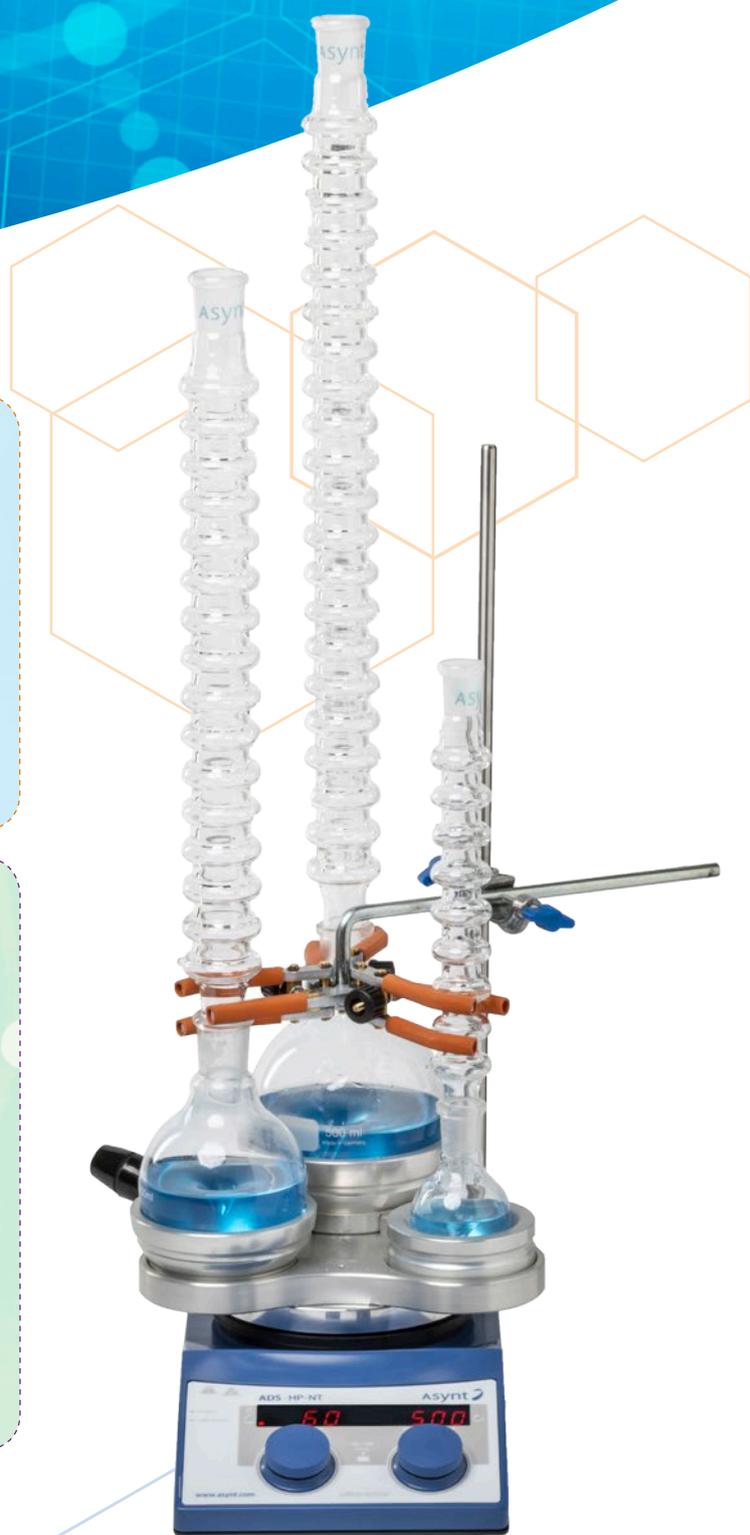
Recommended for use with flasks up to 100 mL in size.†

### **GB-C-350-(cone size): CondensSyn 350 Waterless Reflux Condenser**

Recommended for use with flasks up to 500 mL in size.†

### **GB-C-450-(cone size): CondensSyn 450 Waterless Reflux Condenser**

Recommended for use with flasks up to 1000 mL in size.†



## CondensSyn Distillation Adapter

Allows the CondensSyn to be used in a vertical orientation for distillation purposes.



## Popular Purchase Options\*

### **GB-C-DIST-B24: CondensSyn Distillation Adapter**

For use with B24 CondensSyn.

† Flask no more than half-filled with solvent

\* Comprehensive parts & price list available