

Introducing

# CondensSyn™

## the waterless condenser



- Robust
- Easy to clean
- High performance
- Simple and safe to use
- Environmentally friendly
- Short pay-back time
- No risk of flooding
- Single or parallel use

Asynt hotplate stirrer kit, DrySyn Scholar, clamp and support shown for illustration purposes. All are available separately

At Asynt our customers are concerned about both the environmental impact and indeed costs of running a research facility. A condenser is often required for synthetic experiments and therefore an essential tool for the research chemist. Condensers cooled by a circulating fluid such as water are effective and common; however these are often simply used directly with tap water which creates an environmental and cost issue. Ideally such condensers should be attached to a recirculating chiller unit which will not just reduce the environmental impact but also the long term running costs.

Now there is an alternative which used correctly can be used to replace the water condenser in many bench scale reactions; the **CondensSyn** and the **CondensSyn MINI**.

We used our 34 years of scientific glass manufacturing knowledge to come up with a design that offers effective condensing by not just increasing surface area but also by having thicker glass than traditional glass condensers.

The CondensSyn is manufactured from borosilicate glass; the design also allows for easy cleaning and has a non-roll feature to stop accidents when left on a bench. Available in a wide range of sizes with fittings to suit all standard flasks, find out how much you could be saving!

## CondensSyn - simple, safe, & no risk of flooding



[www.CondensSyn.com](http://www.CondensSyn.com)  
[enquiries@asynt.com](mailto:enquiries@asynt.com)  
Tel: +44 1638 781709

# CondensSyn™



Independent tests were performed by a leading UK University to evaluate the performance for safe use in their research and teaching laboratories. Evaluations were based upon a basic 350mm effective length CondensSyn, a 250ml round bottom flask with 150ml of solvent. CondensSyn is currently available in two lengths, 350mm (as tested) and 450mm for enhanced performance for more demanding applications. You can also choose from a variety of socket sizes. Due to the light weight of CondensSyn two can easily and safely be stacked on top of each other for longer term critical low loss experiments.

Solvent	DCM	Acetone	THF	Ethanol	Acetonitrile	Water*	Toluene
bp [°C]	40	56	66	78	82	100	110
oil bath [°C]	50	71	78	100	100	120	125
difference [°C]	10	15	12	22	18	20	15
time [min]	240	360	300	300	300	240	300
%-loss (total)**	-0.8%	-1.3%	-1.4%	-0.5%	-0.9%	-1.6%	-0.9%
%-loss per hour	<b>-0.2%</b>	<b>-0.2%</b>	<b>-0.3%</b>	<b>-0.1%</b>	<b>-0.2%</b>	<b>-0.4%</b>	<b>-0.2%</b>

In these tests the weighed contents were stirred at the given temperature for the stated time to test the loss of solvent, *i.e.* how much solvent would be lost once the contents have cooled to room temperature.

In a teaching environment the temperature of the heating element is often set higher by students than necessary to ensure a fast heating and vigorous, *i.e.* clearly visible, boiling of the solvent / reaction mixture. Thus, the temperatures were set to higher values than recommended in research labs for *e.g.* stills.

*\*The higher loss of water measured is due to its high surface tension that resulted in droplets of water sticking to the inside of the entire length of the condenser, rather than all running back to the RBF as was observed for all other solvents. \*\*It is recommended that to prevent further losses a temperature differential is kept below 10C, especially when using solvents below 60 °C boiling point. With Diethyl Ether then this should be no more than 4 °C.*



## Save time, money & water!

The average rate of water used in a condenser is 2 litres per minute; this rate was confirmed by a major UK research institution as the average measured use per water condenser in their facility.

The water costs used below are at £1.00 per cubic metre supply and £1.10 per cubic metre waste which is equivalent to 0.21p per litre.

This commercial rate cost is from a water supplier here in the UK, Anglian Water. See table (left) for savings.

	5 hours per day	24 hours per day
Water used per day	600 litres	2880 litres
Cost per day	£1.26	£6.05
Cost per month (working days)	£25.20	£121.00
Cost per year (working days)	£302.40	£1452.00

**Order Information: (key sizes shown below but other sizes are also available)**

**GB-C-350-B14** 350mm with B14 socket  
**GB-C-350-B19** 350mm with B19 socket  
**GB-C-350-B24** 350mm with B24 socket  
**GB-C-350-B29** 350mm with B29 socket

**GB-C-450-B14** 450mm with B14 socket  
**GB-C-450-B19** 450mm with B19 socket  
**GB-C-450-B24** 450mm with B24 socket  
**GB-C-450-B29** 450mm with B29 socket

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