NEW from Asynt:

the CondenSyn™

Air condenser

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

Asynt hotplate stirrer kit, DrySyn, 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 NEW **CondenSyn.**

We used our 32 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 CondenSyn 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.

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Independent tests were made by a UK University to evaluate the performance for safe use in their research and teaching laboratories. Tests were made using a basic 350mm effective length CondenSyn, a 250ml round bottom flask with 150ml of solvent.

CondenSyn is currently available in two sizes, 350mm (as tested, right) and 450mm for a little extra performance. You can also choose from B24 and B19 socket sizes.

Due to the light weight of CondenSyn two can easily and safely be stacked on top of each other for longer term critical low loss experiments.

Solvent	*DCM*	*Acetone*	*Ethanol*	*Water**
bp [°C]	40	56	78	100
oil bath [°C]	50	71	100	120
difference [°C]	10	15	22	20
*breakthrough [°C]***	55	80	105	125
start weight [g]	**316.30**	**222.52**	**219.59**	**256.88**
end weight [g]	**313.83**	**219.65**	**218.49**	**252.86**
time [min]	240	360	300	240
mass loss [g]	**-2.5**	**-2.9**	**-1.1**	**-4.0**
%-loss (total)	-0.8%	-1.3%	-0.5%	-1.6%
%-loss per hour	-0.2%	-0.2%	-0.1%	-0.4%

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.
Heating block with temperature probe, 250 mL RBF, ~150 mL stirred solvent.
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 breakthrough when using solvents below 60C boiling point that a temperature differential is kept below 10C. With Diethyl Ether then this should be no more than 4C.*

GB-C-350-19	**350mm with B19 socket**
GB-C-350-24	**350mm with B24 socket**
GB-C-450-19	**450mm with B19 socket**
GB-C-450-24	**450mm with B24 socket**

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