



Sustainable Chemistry - Minimising Waste



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To reduce consumption (and waste) in the Synthesis Laboratory we need to:

- Keep the same productivity, or better, increase productivity
- Equipment should be friendly and easy to use for the scientist
- Mostly manufactured from sustainable/recyclable materials
- To look at chemistries that are cleaner and need less energy (For example using H₂O as a solvent)
- Reduce the time scales from development to production

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West Burton Power Station



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Waterless Reflux Condensers



CondensSyn

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Sustainability Working Group operating within the **Biomolecular Science and Medicinal Chemistry Division** at **Nottingham University** (UK)

“Water reflux Condensers - the cooling water used in this process just ends up down the sink!”

“With a typical reflux reaction running for 16 hours, we calculated a single water condenser to use 20 litres of water per hour equating to 320 litres of waste water per reaction.”

“Scaling this by our 37 scientists, doing 2 reactions per week, equates to a saving of 1,231,360 litres of water in a year by using the CondenSyn waterless condensers”

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From **University of Strathclyde's "Good Practice Sustainability Guide."**

The significant benefits of using waterless condensers include:

"Completely omitting the need for water"

"Save money on water usage"

"No risk of flooding"



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The **University of Strathclyde's "Good Practice Sustainability Guide"** continues:

"DrySyn blocks fit various sizes of round bottom flasks. They eliminate the need to purchase and dispose of oil and silicon."

"It takes less energy to heat up a DrySyn block compared to an oil bath to the same temperature."

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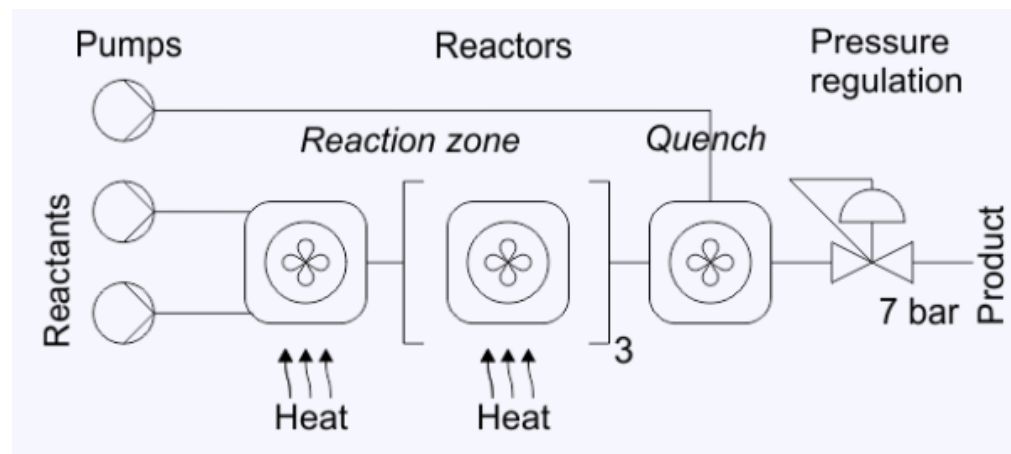


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