



Process Reactor



PRODUCT DATASHEET

Process Reactor

Aditya PR is a benchtop jacketed reactor system combining excellent value and high-quality construction with unique, user-friendly features and reliable performance. Designed for daily use, PR's intuitive and thoughtful design makes it incredibly easy to use. PR offers rapid height adjustment and two clamp sizes to accommodate a wide range of vessels from 250 mL to 10 L which can be interchanged rapidly and seamlessly. The system can be used over a wide temperature range for all your lab's chemistry needs. A wide selection of accessories and upgrades for automation are available.

Due to its modular design, wide vessel range, and wide temperature limits, PR can be used in many applications including process development and optimization, advanced synthesis, crystallization, automated synthesis, and more. Passion at work is our main motto which will reflect in our design

1. Easy scale-up with a wide vessel range
2. Work at your height with easy, tool-free adjustment
3. Avoid spills with rapid oil pipe connection and oil drain valve
4. Quick clamp system for fast and safe vessel loading and Unloading
5. Save lab space with one PR frame for all vessels
6. Easy, simple, tool-free motor adjustment

Designed for you

Wide Range of Vessels	Quick Vessel Change	Simple Stirrer lift	Tool Free align
500ml to 20L	Unique vessel clamp, Oil drain, quick connectors	Innovative motor lift, full access to lid and ports	Novel frame to fit all vessel sizes

Features

Condensers & Addition funnel

A wide variety of condensers are available

Easy Lift

Easy unfastening of stirrer and vertical slide will free stirrer rod for easy assembly and dismantling

Lids

is available in two sizes (DN100 & DN150). Ports are included for solid addition, probes, and condensers, with custom options available

Stirrers Blades

PR stirrers are available in anchor, Pitched Blade Turbine, and retreat curve impellor as standard. Customization is available

Drain valve

Aditya straight outlet valves ensure leak-free operation at all temperature ranges and prevent accidental damage through over-tightening



Aditya overhead stirrer – high-torque motor renders performance and reliability for demanding applications

Oil Drain Unit

To limit mess when changing vessels, PR has an optional Oil Drain Unit for easy and mess-free draining of vessel jackets

Clamp is available in two sizes (DN100 & DN150) and allows rapid vessel changes with safe sealing and support. The unique design holds the vessel and lid in alignment with stirrer for vibration free setup.

Vessels

Jacketed vessels are available from 500 mL to 10 L

Oil Pipe Tidy

The Oil Pipe Tidy is easily attached to the main plate on the Clamp and allows leak-free storage of your oil pipes when changing vessels

Base Frame

The PR Base Frame is a rugged and adaptable frame which accommodates all vessel sizes



PRODUCT DATASHEET

The importance of accurate temperature control Intelligent dosing

Round-bottom flasks have long been the mainstay of almost all chemistry labs, but they come with inherent problems that make them unsuitable for more challenging chemistry.

Limited temperature ranges, lack of repeatability, and the need for constant experiment supervision all fly in the face of the ever-growing pressure on synthetic organic chemists to develop innovative chemical reactions and compounds quickly and efficiently. Jacketed reactor systems help combat these issues and enable chemists to perform better chemistry, more efficiently than ever.

The challenge: Accurately maintaining reaction temperatures

Round-bottom flasks are generally limited to 4 temperatures;

- Reflux
- Room temperature (can vary significantly with changes in environment)
- 0 °C (can be achieved with an ice bath)
- -78 °C (a mixture of acetone and dry ice)

Flasks make life difficult if your chemistry requires a different temperature, as most optimized processes do. The variations in temperature when manually controlled, although small, can dramatically impact the reaction yield and reproducibility of results.

The solution: Pinpoint accuracy in temperature control with jacketed reactor vessels and circulators

Jacketed reactors accurately control the temperature of their contents through the use of a “jacket” of heating/cooling fluid which is controlled to fractions of degrees by oil circulators. Not only does this enable much more consistent reaction temperatures, but it also provides easy temperature “ramping”— something that’s virtually impossible with round-bottom flasks.

This advanced temperature control allows chemists to work at a huge range of temperatures and therefore access more complex chemistries. The accuracy also enables far greater repeatability and reproducibility of results.



PRODUCT DATASHEET

Accessories

Aditya PR's has been designed by chemists who understand the issues chemists face with jacketed reactor systems. PR is easy to customize to your exact requirements; simply choose from a range of vessel sizes and types, baffles, probes, sensors, stirrers, stirrer motors, and other glassware accessories.

Jacketed reactors

Choose from a range of glass jacketed and vacuum jacketed reaction vessels. All Aditya reactor vessels are manufactured at our state-of-the-art glass manufacturing site.

 Jacketed Vessels – 500ml, 1L, 2L, 3L, 5L, 10L – 20 liters sizes are available

 Vacuum Jacketed Vessels – 500ml, 1L, 2L, 3L – 5 liters sizes are available

Stirrers

PTFE, glass, and stainless steel stirrers in a variety of geometries are available. Anchor, Pitch blade turbine, Retreat curve impeller
Custom stirrers are also available

Stirrer motors

High torque (200 N/cm), digital display stirrer motors up to 1000 rpm, with timer feature are available.

Lids

PR lids are available in borosilicate glass, PTFE, and stainless steel in various sizes: DN100 (EU and US) and DN150 (EU and US). **Custom stirrers are also available**

Probes and Nodes

Wide range of probes and nodes available in various lengths, including temperature, turbidity, and pH.