At Amar PRESSURE and FLOW is our religion

Pressure Reactor Specialist®
Flow Chemistry Specialist®

Your Research Partner
High Pressure Autoclaves
- Pressures up to 350 bar at 500 °C
- SS316/316L, Hastelloy B/C, Monel, Inconel, Nickel, Titanium, Tantalum, etc.
- Ex-proof / ATEX / CE / PED / ASME U, U2 / CRN / CSA / UL certified systems
- 50 ml - 100 ltrs. volume
- Pressures up to 100 bar at 350 °C
- SS-316/316L, Hastelloy B/C, Monel, Inconel, Titanium, Zirconium, etc.
- High mass transfer gas induction impeller
- PBT impeller for liquid-liquid reactions

High Pressure Reactors
- 100 ltrs - 2000 ltrs. volume
- Pressures up to 100 bar at 350 °C
- SS-316/316L, Hastelloy B/C, Monel, Inconel, Titanium, Zirconium, etc.
- High mass transfer gas induction impeller
- PBT impeller for liquid-liquid reactions

Catalyst Screening System
- 50 ml - 1000 ltrs. volume
- Pressures up to 100 bar at 350 °C
- SS-316/316L, Hastelloy B/C, Monel, Inconel, Titanium, Zirconium, etc.
- High mass transfer gas induction impeller
- PBT impeller for liquid-liquid reactions

Automated Multiple Autoclaves
- 4 nos or 6 nos parallel reactors
- 25 ml - 2 ltrs. for high throughput testing
- Fully automated with SCADA software
- Bottom stirred or overhead stirring

Glass - Metal / PEEK Autoclaves
- 100ml-2ltrs volume glass autoclaves
- MOC: SS316 / Hastelloy / PEEK / glass
- Upto 10 bar pressure @ 200 °C
- Interchangeable metal & glass reactors

Magnetic Drive Couplings / Stirrers
- For reactor volumes from 50ml to 10,000L
- For high vacuum distillation in RBF
- Full vacuum to 690 bar pressures
- MOC: SS-316, Hastelloy C, PEEK, etc.
- Mixer with inline motor & coupling
- High torque coupling upto 600 Nm

High Pressure Vessels
- 25 ml - 2000 ltrs. volume
- Pressures up to 689 bar & 600°C
- Can be used with bottom magnetic stirrer
- For gas / liquid storage
- For Hydrogen Induced disbonding tests
- For soaking of diamonds / precious stones

Acid Digestion Bombs
- 50 ml to 750 ml volume
- Teflon lined, SS316 & microwavable hydrothermal acid digestion bomb
- Pressures up to 200 bar & upto 250°C.

Shaker Hydrogenators
- 100 ml to 2 liters volume in glass & metal interchangeable vessels.
- 20 bar for metal vessel & 3 bar for glass vessel
- Used to study catalyst activity or hydrogenation
<table>
<thead>
<tr>
<th>HPHT Corrosion Testing System</th>
<th>Gas Hydrate Formation System</th>
<th>Reaction Calorimeter</th>
</tr>
</thead>
<tbody>
<tr>
<td>• For static, dynamic, loop &amp; electrochemical corrosion studies</td>
<td>• For production &amp; study of artificial gas hydrates</td>
<td>• For heat flow, isothermal &amp; non-isothermal calorimetry</td>
</tr>
<tr>
<td>• 450 ml to 25 ltr. volume</td>
<td>• 50 ml to 2000 ltrs.</td>
<td>• Fully automated to measure heat flow, reaction enthalpy, adiabatic temperature rise, specific heat</td>
</tr>
<tr>
<td>• Pressures upto 350 bar &amp; 600°C</td>
<td>• Pressures upto 350 bar and 100°C.</td>
<td>• 500ml to 5 ltrs.</td>
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<tr>
<td>• MOC: SS316, Hastelloy C, Inconel, Titanium</td>
<td>• Glass window with camera to observe gas hydrate formation</td>
<td>• Interchangeable glass &amp; high pressure metal reactors</td>
</tr>
</tbody>
</table>

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<tr>
<th>Supercritical Fluid Extraction Technology (SCFE)</th>
<th>Continuous Stirred Tank Reactors (CSTR)</th>
<th>Packed Bed Tubular Reactors</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 100 ml to 1000 ltr. extractors</td>
<td>• Single or multiple reactors connected in series.</td>
<td>• Tubular micro reactors with packed catalyst</td>
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<tr>
<td>• Pressures upto 689 bar</td>
<td>• Multiple inlets and outlets for addition &amp; transfer / removal of gases &amp; liquids.</td>
<td>• Fixed, fluidized &amp; trickle bed reactors</td>
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<tr>
<td></td>
<td>• Stirred tank reactors of 50 ml to 2000 ltrs.</td>
<td>• Pressures upto 350 bar &amp; 1000°C</td>
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<tr>
<td></td>
<td>• Pressures upto 350 bar &amp; 500°C</td>
<td>• For catalyst testing / screening, oxidation, reforming, hydrogenation, liquefaction, fischer tropsch process, hydro-cracking etc.</td>
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</tbody>
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<tr>
<th>Continuous Flow Microreactors</th>
<th>Continuous Flow Reactors Pilot to Plant Scale</th>
<th>Photochemical Reactors</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Modular metal microchannel reactors from 1 ml (AMaR-1) to 2 litres. (AMaR-2) volume</td>
<td>• 3D flow reactor (AMaR-3) with volumes upto 1 ltr. &amp; flow rates upto 360 lph</td>
<td>• UV transparent Chemically inert tubes</td>
</tr>
<tr>
<td></td>
<td>• Glass microreactors from LTF, Germany</td>
<td>• Reactor volume 12, 50, 200, 1000 &amp; 2000 ml</td>
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<tr>
<td></td>
<td>• Flow rates upto 240 lph</td>
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<tr>
<td></td>
<td>• For liquid-liquid, gas-liquid, homogeneous &amp; multi phase reactions</td>
<td>• Pressure up to 35 bar &amp; temperature 175°C</td>
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<tr>
<td></td>
<td></td>
<td>• For photochlorination, photobromination, photo alkylation etc.</td>
</tr>
</tbody>
</table>
High pressure automated / ex-proof / customised systems

100 ltr. ex-proof hydrogenation pilot plant with catalyst charging, catalyst filter with recycle, auto cooling system, vacuum pump & catch pot

10 ltr. fully automated ex-proof alkoxylation pilot plant

Continuous emulsion polymerisation pilot plant

High pressure polytest reactor system

100 ltr. polymerization reactor for 2 million cP viscous polymer with hydraulic vessel raising lowering & tilting mechanism

Phase transfer catalyst continuous reactor system with simultaneous 3 different impeller speeds at 3 different levels
High pressure automated / exproof / customised systems

500 Ltr. hydrogenation pilot plant with catalyst filter & recycle

100 ltr reactor with hydraulic lid lifting arrangement

Multiple glass & metal autoclaves

Multipurpose pressure reactor with column & distillation assembly

Ex-proof pilot plant for EO-PO reactions

Ex-proof autoclave with load cell arrangement

Fully automated & semi continuous pilot plant for styrene butadiene emulsion polymerisation with pneumatic vessel raising, lowering & tilting

Ex-proof autoclave with load cell arrangement
Continuous flow / CSTR / fixed bed tubular reactor systems

High throughput multi tube reactor system for catalyst screening

1 ltr. AMaR-3 with flame proof pumps, control panel & control valves

Table top tubular reactor system (TTRS)

CSTR for hydro-cracking of heavy hydrocarbon oils

High pressure CSTR for hydrogenation

Pilot scale tubular reactor with purge panels for continuous biojet fuel production
About AMAR

Serving Industry Since 1974

ISO, CE-PED, ASME U/U2, CSA, UL, Ex-Proof, ATEX certification

Largest manufacturer & exporter of reactors in India

Inline with government's MAKE IN INDIA campaign

Exports to over 50 countries worldwide

More than 40 distributors worldwide for local support

Over 5000 successful installations worldwide

More than 2000 delighted customers globally

Unmatched quality & safety standards

Manufacturing on CNC/VMC & automated machines

Prompt & efficient after sales service

Expertise in custom designing high pressure & flow systems

Highly skilled & trained team of more than 100 people
Some of our valued customers

Our motto, customer's delight & not mere satisfaction

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• High Pressure Autoclaves • Multiple Reactor Systems • Gas Induction Reactors
• Ex-Proof & Automated Pilot Plants • Glass Autoclaves • Super Critical Fluid Extraction
• HPHT Corrosion Testing • Magnetic Drive Couplings & Agitators
• Metal Micro Reactors • Glass Flow Reactors • Photochemical Reactors
• Packed Bed Tubular Reactors • Continuous Stirred Tank Reactors