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Detailed Technical Specifications for Fully Automated Robotic Station

Capable of faster investigation of Reaction, Reagent and Molecule space
Integrated with reactor block in inertizable system for library synthesis and route scouting in glass disposable vials, suitable for e.g.:

- Organic / organometallic / ligand library synthesis
- Ambient pressure catalysts screening, e.g. CC-/CN-coupling
- Route scouting / early process research
- Kinetic reaction profiling
- Reaction screening / late-stage drug discovery, 48 x 8 total volume
- Poly-/oligosaccharide library synthesis and 1st stage optimization

Array reactor block shall be equipped with:

- 48 x 8mL disposable glass vials reactors with below capabilities
- heating / cooling (-20 to 150°C)
- refluxing
- mixing by shaking for liquid-phase and solid-phase chemistry
- vacuum for e.g. inertization and solvent evaporation

The workstation should include an exchangeable robotic tools for e.g. gravimetric & volumetric dispensing of solids and volumetric dispensing of liquids as and when required during course of reaction

Should have a provision for automatic reactor opening during reaction for automated addition of solid reagents or solvents directly into the reactors while under vortex, whenever required.

The system should include a 4 channel Liquid Handling Unit for automated Liquid dispensing while the reactors are under stirring and Heating/cooling.

Accuracy: < 0.40% per stroke

Precision: < 0.12% per stroke

Max. Viscosity: < 100 mPa·s

Should be equipped with independent needles for volumetric dispensing and aspiration of low viscous liquids equipped with 4 x independent high-resolution syringe pumps with corresponding 10mL syringes, (other sizes of 1, 10 and 25 ml should be optionally quoted) and 4 septa piercing stainless steel needles should be supplied. Optionally peek coating to be quoted

The dispensing unit should include a multi-way & port valves for connecting up to min 14 different solvents

Rinse stations for the needles inside / outside rinsing are needed

The workstation should include one Solid dispensing handling tool for gravimetric dispensing directly into conditioned, measured, stirred reactors

Should be integrated with 20g balance with resolution 0.1mg

Independent source material 8 x 20mL containers to avoid cross contamination

Containers for multiple source materials and the holding station

There should be provision on the workstation to hold the solid powder containers.

There should be a provision for Liquid transfer and Solid Dispensing protocols such as 1-to-1, 1-to-many, many-to-1 and many-to-many basically provision of multiple way transfer of solution/powder from sample container to reactor

The workstation should include Sample /Reagent racks for holding 80 x 8 ml and 30 x 60 ml vials including vials

Should include two separate cryostats one for the reactor block and one for the reflux circuit

Vacuum pump and condenser for Inertisation, Evaporation, Degassing applications is required

Temperature (0-60 °C) and humidity (0-100%) monitoring facility should be included

The workstation should come with operation software to control the experiments and the operation of the workstation with perpetual licenses

Operation software shall be intuitive, easy to use and enable to configure instrument changes, create/change experiment workflows and operation parameters

Operation software shall enable visualization data acquisition, the data integration

Safety feature provision for shutdown in case of emergency is needed

CE compliance is required

Instrument should be supplied with standard One year warranty