

# Coflore® ACR system

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## Objective

- Developing scalable flow chemistry solutions in a laboratory environment

## Operating range

- Working volume: 30 mL, 50 mL, 70 mL, 100 mL
- Residence time: 10 seconds to 8 hours
- Agitation speed: 2 – 9 Hz
- Reactor temperature: -40°C to +140°C
- Pressure: 0 to 20 bar (300 psi)
- Throughput: 0.1 mL/min to 300 mL/min

## Equipment

- Addition/measurement points: 10 side ports, one for each cell
- Measurement equipment: T type thermocouples
- Different agitators: variable volume, high shear and catalyst basket
- Two cell block designs: Reactor Cell Block and Extractor Cell Block
- Different materials: Hastelloy, PTFE, Ceramic
- Digital control panel
- Anti-Vibration Table



Further information see:

- <https://www.amt.uk/laboratory>

## Description

The Coflore® Agitated Cell Reactor was developed for establishing novel continuous processes in a small scale when only limited quantities of reactants are available or required. The reactor is suitable for liquid-liquid, liquid-gas and liquid-solid-gas reaction mixtures. Mechanical mixing in 10 reaction cells is generated by the horizontal agitation of the process plate. This mixing technology ensures a straight-forward scale-up path to pilot or production plant via further flow reactors by AM Technology. A temperature measurement as well as sample or addition points can be added to any of the 10 reaction cells for a flexible handling. Interchangeable agitators with different designs meet the requirements of an active mixing at different types of chemistry. The cell block is available in two designs: A reactor cell block and a counter current extractor cell block. Agitators inside the heat transfer flange generating an active mixing which enables accurate control of the reaction temperature. The simple disassembly of the reactor block makes all wetted surfaces accessible for cleaning.

## Experience

- Continuous synthesis of citronellaloxime:

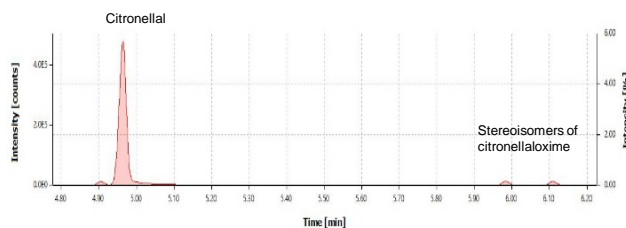
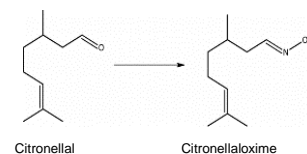
Production of fragrances

Biphasic reaction in toluene / water

Toluene: reaction phase

Water: aqueous reactant

T = 60 °C



## ACR Cell Block

Process connection

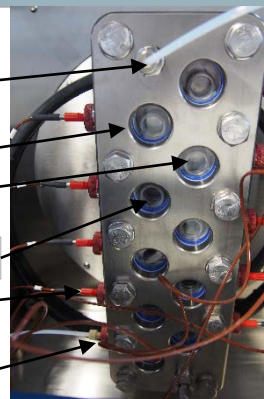
Reaction cell

Agitator (high shear)

Glass window

T-type thermocouple

Side ports



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