PRODUCT DATASHEET

Fixed-Bed Catalyst Test Unit

Fixed-bed micro-reactor for catalyst testing





DETAIL – REACTOR IN SPLIT-TUBE FURNACE

OVERVIEW

The Tech Inc. Fixed-Bed Catalyst Test Unit tests catalysts under controlled pressure, temperature and feed conditions in a tubular fixed-bed reactor. Refinery and petrochemical R&D centres use it to screen catalysts, measure activity and selectivity, and study ageing before scale-up. Micro-activity test (MAT) units for FCC catalysts and continuous fixed-bed units are built on the same platform.

MODELS AND CONFIGURATIONS

- **Single-reactor unit** – one fixed-bed reactor for screening and kinetics.
- **Twin or parallel unit** – two or more reactors for side-by-side catalyst comparison.
- **MAT unit** – micro-activity test unit for FCC catalyst evaluation.
- **Continuous pilot unit** – larger fixed-bed reactor for longer runs and product collection.

TYPICAL DESIGN DATA

Reactor	Tubular fixed bed, size to client specification
Pressure and temperature	To client specification
Wetted materials	SS316 or Alloy C-276, or to client specification
Feeds	Gases by mass flow controller; liquids by metering pump
Analysis	Online GC connection, or liquid product collection
Design code	Designed to ASME VIII or client specification

APPLICATIONS

Hydroprocessing, FCC, reforming and isomerisation catalyst testing, petrochemical and fine-chemical catalysis, CO_2 conversion and university catalysis research.

KEY ADVANTAGES

- **Unattended running** – recipe control and interlocks for long runs
- **Repeatable data** – mass flow control and multipoint bed temperatures
- **Configurable** – one, two or more reactors on one platform
- **Integrated analysis** – GC sampling built into the design
- **Corrosion options** – Alloy C-276 wetted parts for sour or acidic feeds

Designed and built by Tech Inc. · **Part of the Davey Group since 1990**

Offices: Chennai · Toronto · Tallinn · Al Khobar

mail@techincresearch.com · +1 (289) 622-1032 · www.techincresearch.com

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