

Description

Condensation Polymerization Reactor

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The polymerization reaction can be acid catalyzed or self-catalyzed.

Condensation Polymerization Reactor
JLab is used to carry out a condensation polymerization reaction under batch condition.

The set-up can be used to measure the extent of reaction & also the reaction rate constant.

An outlet is given to condenser fitted with a perkin's triangle for collecting the condensate.

The set-up consists of jacketed type ss reactor fitted with variable speed agitator & baffles.

Metered quantity of nitrogen gas from a cylinder, allowed entering the reactor.

The set-up is complete & self-contained with sampling ports.

The top cover can be removed for cleaning purpose.

Feed is fed from the top through a funnel provided with S.S. Ball valve.

Vapours are allowed to enter in the shell of the condenser and cooling water is allowed to pass through the tube and condensate is collected.

The reactor is fitted with nichrome wire heaters and temperature is controlled by the digital temperature controller.

Objectives:-

To calculate the rate constant and extent of reaction with and without an acid catalyst.

To study the kinetics of condensation polymerization in a batch reactor under isothermal condition.

Required for operation:-

Electricity supply: single phase, 220v ac, 50 Hz, 5-15 amp. Combined socket with earth connection.

Floor area : 1.5 x 1 m

Instruments, laboratory wares, and chemicals required for analysis as per the system adopted.

Water supply

High purity n₂ gas cylinder with pressure regulator, end connection 1/4" BSP female.

Specifications:-

Heater: nichrome wire heater

Stirrer (2 nos.): stainless steel impeller and shaft coupled with the motor.

Stopwatch: Electronic


The whole set-up is ingeniously
designed and schematically arranged
on a powder-coated rigid structure.

Condenser: 18 long 1., concentric tube
type


Reactor: material stainless steel,
volume- 1 ltrs. (approx.)

Water bath: Material stainless steel,
double wall, insulated with ceramic
wool.

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