

## The MAX300™ platform allows customers to gain efficiency by using one analyzer to monitor the gas phase composition at different levels of distillation columns.

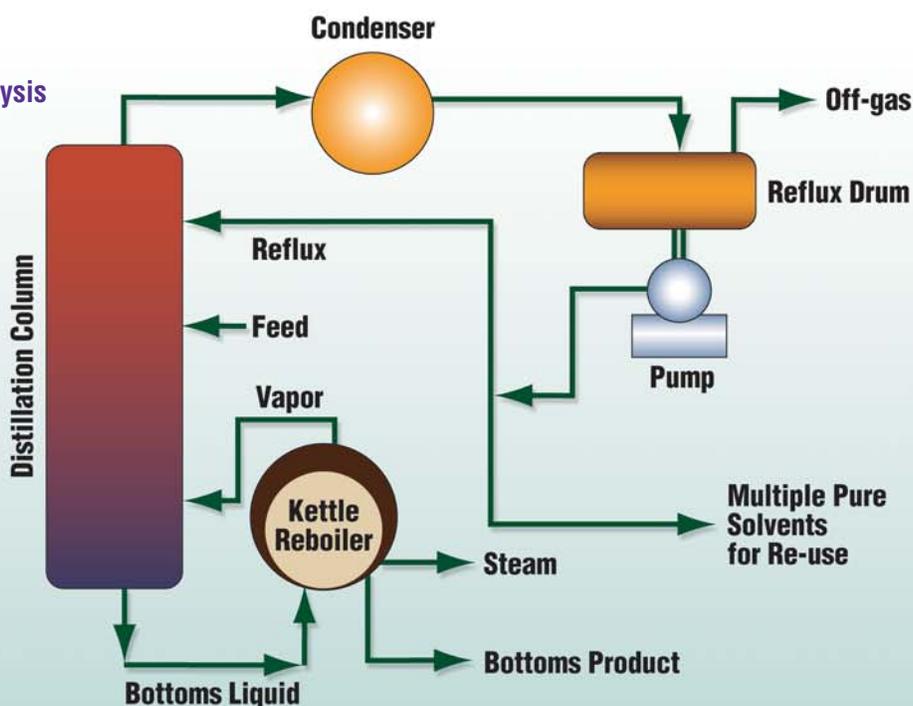
The Pharmaceutical industry continues to be an essential element of healthcare systems worldwide. Today's manufacturers need to know about the latest Process Analytical Technologies (PAT). Implementing the most innovative, cutting-edge technologies gives pharmaceutical manufacturers the tools needed to gain position in the marketplace. Significant opportunities exist to improve product development and to better analyze and control the manufacturing processes. In addition, the pharmaceutical industry has the same

basic needs as many other industries. Reducing production downtime and increasing productivity are the main goals.

For analysis and control, engineers rely on Quadrupole Mass Spectrometers. Extrel's MAX300 Quadrupole Mass Spectrometers can be found in pharmaceutical plants around the world. These advanced systems provide an array of analyses which give engineers the ability to better control processes.

### MAX300 Pharmaceutical Advantages

- **Speed of response**  
Faster analysis than GCs
- **Multi-point/Multi-component Analysis**  
Both Organic & Inorganic  
Flexible Methods
- **Lower Cost of Ownership**  
Disposable Ionizer  
Quick Inlet  
No consumable gases
- **High Sensitivity**  
100% - 10 PPB  
w/Smart Detector
- **Reliability**  
Demonstrated 98%  
or greater uptime
- **Web/Server based software**  
Accessible via LAN  
21 CFR 11 compliant
- **Flexible Platform**  
Transportable  
Lab → Pilot Plant → Production



# SOLVENT RECOVERY

## Application Background

Pharmaceutical distillation is a separation method for mixtures containing multiple solvents. In a typical Pharmaceutical plant, numerous solvents will be used to obtain a variety of products. Once used, the solvents in their vapor phase are sent to the Solvent Recovery Unit (SRU). In the first step of the SRU, the solvent vapors are collected in Adsorbers. Here solvents are separated from a carrier gas. Next, in the Regeneration stage,

the solvent mixture is heated, and sent to the distillation column. Based on the differences in boiling point, individual solvents will be collected at different stages of the column. Pure solvents are recovered for re-use.

## Key Application Facts

- Instantaneous results of all solvent concentrations during the recovery process.
- Monitor both Continuous and Batch distillation.
- Monitor Adsorber saturation.
- Analyze multiple solvents.
- One analyzer may be coupled with other pharmaceutical applications (Fermentation, Solvent Drying).



MAX300-LG



MAX300-IG

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