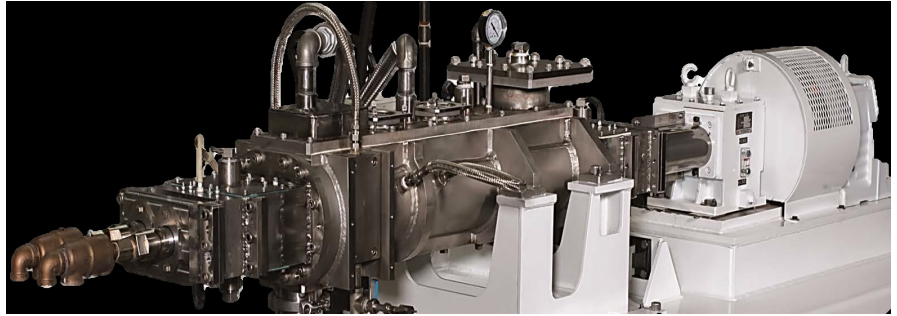




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Styrene-Butadiene Rubber (SBR) Case Study

Application:

Styrene-Butadiene Rubber (SBR) is a synthetic rubber which is a copolymer of styrene and butadiene. During synthesis **moisture and volatiles must be removed**. SBR is being utilized in the tire industry as well as roofing and other industries where high performance rubber is required.

Challenge:

Remove solvent (n-hexane) from S-SBR solution with a target of 0.1% volatiles/moisture.

Prevent material adhesion to side surface of inside barrel at discharge area.

Process Conditions:

SBR Slurry (solids and volatiles)	
Jacket Temperature	356°F
Shaft Temperature	356°F
Shaft Speed	150 rpm
Vacuum	5-15 inHg—variable



Solution:

Material was pumped into the SCP, heat was applied through the Processor's jacketed screw shafts and barrel. **The process was run continuously under vacuum**. This in combination with the heat **produced a material at the discharge containing less than 0.1% volatiles**. The self-wiping action and differential speed of the **Processor's screw shafts prevented material buildup and fouling**. The volatile vapors were drawn through a condenser where they were converted to liquid and reclaimed in a collection tank.

Benefits:

The self-wiping design **prevents material buildup** while processing high viscosity materials. Volatiles are **safely captured** for proper disposal or recycling.

SC Processor—SCP

Features and Benefits:

- Constant Vacuum*
- Less Equipment*
- Uniform Heat Transfer*
- Self-Wiping Flights*
- Lower Energy Consumption*