

POLYVINYL CHLORIDE (PVC) PRODUCTION

- Recovers valuable VCM with payback of 1 year or less
- Minimizes installation cost with skid-mounted construction
- Contains no moving parts, simple to operate and maintain
- Reduces or eliminates incineration and scrubbing costs

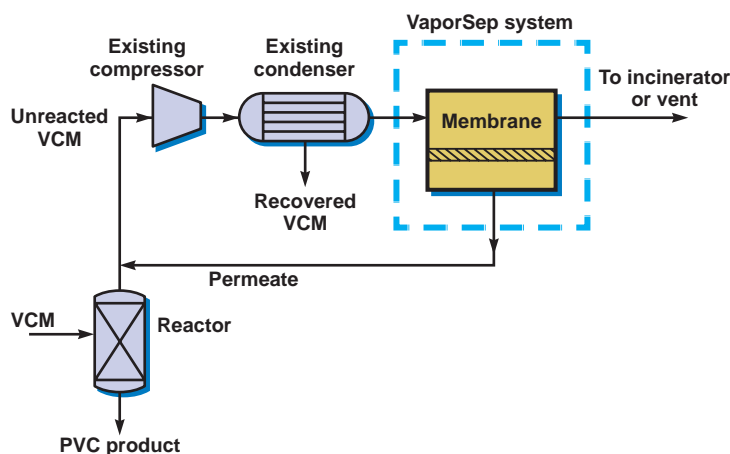
“The MTR system on the vinyl chloride process does an excellent job.”

— Process engineer,
Goodyear Tire & Rubber

Problem

Polyvinyl chloride (PVC) is produced by polymerization of vinyl chloride monomer (VCM). Unreacted VCM is pumped out of the reactor and condensed, and non-condensable gases are vented from the condenser. Depending on the temperature and pressure of the condenser, the vent stream also contains from 50 to 2,000 lb/h of VCM. As VCM emissions are tightly regulated, the vent stream must typically be incinerated and scrubbed before release.

VaporSep® Solution



The vent stream from the existing VCM condenser is sent to the VaporSep® system. VCM passes through the membrane at a greater rate than inert gases, producing a VCM-enriched permeate and a VCM-depleted residue. The permeate is recycled to the inlet of the existing compressor and the residue is incinerated. The VCM recovered by the VaporSep® system is condensed in the existing condenser.

POLYVINYL CHLORIDE (PVC) PRODUCTION

VaporSep® systems allow PVC producers to recover 90% to 99+% of the VCM currently lost in vent streams, providing a significant economic benefit.

VaporSep® systems are currently used by major PVC producers including Oxyvinyls, Westlake, Solvay, and Aiscondel.



This VaporSep® system recovers 1000 tons per year of VCM.

Benefits

- Achieves significantly higher VCM recovery than possible by condensation alone
- Achieves recovery at more moderate temperatures and pressures than condensation alone
- Minimizes footprint and weight
- Minimizes maintenance with no moving parts
- VCM recovery up to 99+%

System Description

- Complete, skid-mounted unit includes all necessary instrumentation and controls
- Unit dimensions: 6 to 15 ft (L) x 6 ft (W) x 6 ft (H); 5,000 to 15,000 lb

System Performance

- Suitable for vent streams from 50 lb/h to greater than 2,000 lb/h, with VCM concentrations from 20 to 80 vol%

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