



**UNION CARBIDE CORPORATION**

CHEMICALS AND PLASTICS

P. O. BOX 471, TEXAS CITY, TEXAS 77590

September 28, 1967

Mr. Warren Cook  
Institute of Industrial Health  
University of Michigan Medical Center  
Ann Arbor, Michigan 48104

Dear Mr. Cook:

Further to our conversation, I am enclosing a simplified flow diagram and process description of our solvent (solution) process for making VCl/VAc copolymers. No PVC is made by this process, although one maleic acid modified VCl/VAc resin is occasionally produced.

Under separate cover, I am forwarding the suspension vinyl recipe information to Dr. Magnuson. If I can be of further service, please let me know.

Yours very truly,

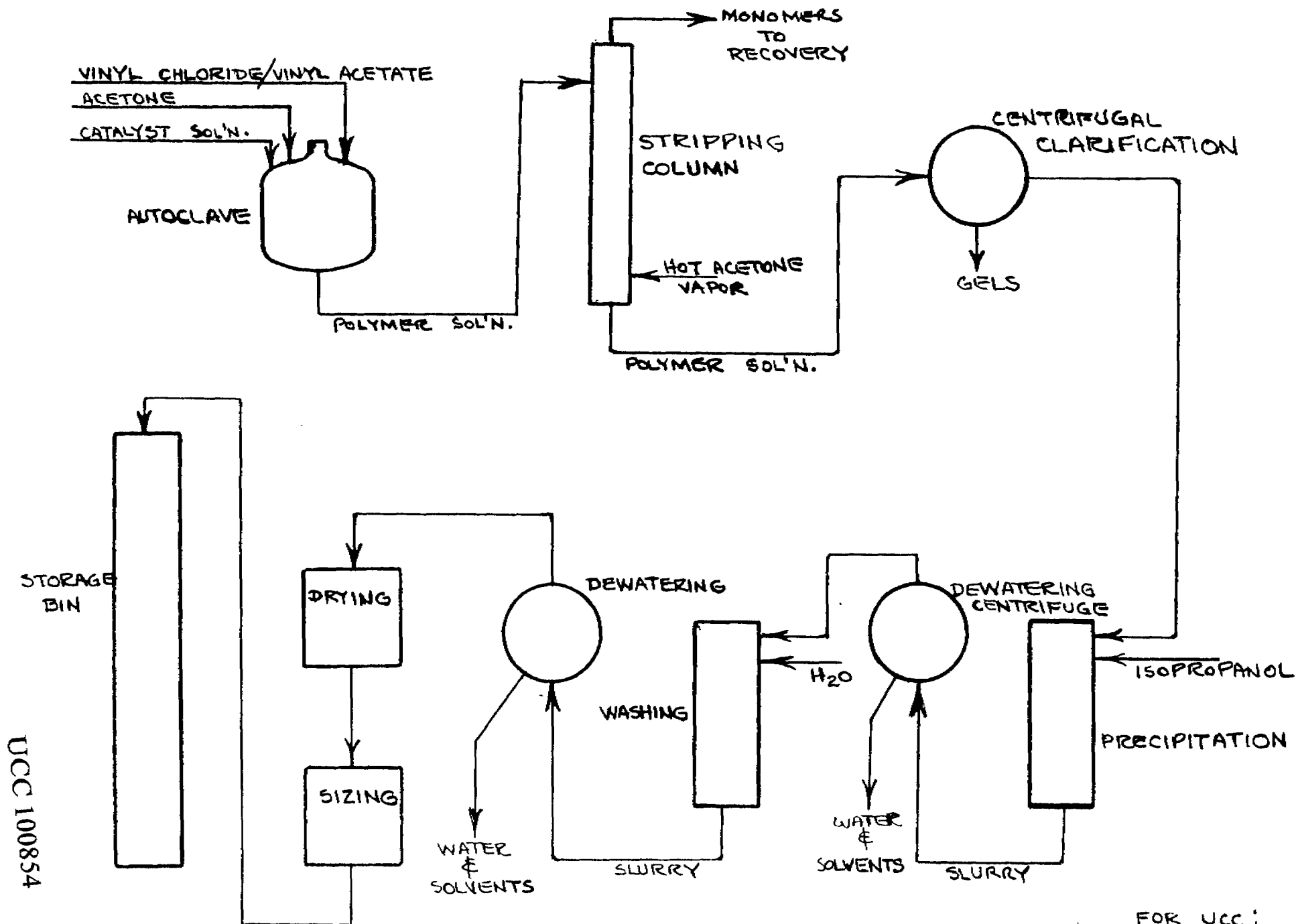
Dean E. Richardson

DER/sj

Enclosure

cc: Dr. F. E. Bailey, Jr.  
Mr. J. H. Barrett  
Mr. O. T. Carlisle  
Mr. Don Deese  
Dr. Bert Dinman  
Mr. J. F. Erdmann  
Mr. J. H. Field  
Dr. R. E. Joyner  
Dr. Harold J. Magnuson

UCC 100853

SOLVENT PROCESS VINYL POLYMERIZATION  
SIMPLIFIED SCHEMATIC FLOW DIAGRAM

UCC 100854

FOR UCC:  
DER

C O N F I D E N T I A L

PROCESS NOTES

SOLVENT (SOLUTION) VINYL PROCESS:

The polymerization is carried out in acetone in jacketed, agitated lead-lined autoclaves. Acetone, monomers and catalyst solution (isopropyl peroxydicarbonate) are fed to the autoclaves continuously. The resin solution, a thick, clear, syrupy liquid, is withdrawn continuously and fed to a stripping column where unreacted monomers are stripped out by a countercurrent flow of hot acetone vapor. The resulting solution of polymer in acetone is centrifuged (clarified) to remove gels and foreign particles.

In the processing unit, the resin is precipitated from the solution by adding isopropanol, after which the resin is dewatered in a continuous centrifuge. The dewatered resin is reslurried in water to remove residual solvents, after which the dewatering is repeated. The wet resin is dried in flash dryers, any oversized particles are removed and the finished resin is conveyed to a bin for storage. Like PVC, it is in the form of fine, white powder.

FOR UNION CARBIDE CORPORATION:

  
Dean E. Richardson

9-28-67

UCC 100855