Inter-Office Memo

TENNECO CHEMICALS, INC.

To H. B. Carr At Burlington Date August 20, 1969

From F. W. Kanzler At Burlington Copy to R. S. Cole
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Subject Monomer Recovery System
Project No.: 70-001

As decided in the meeting on 8/15/69 in Burlington, the following analyses were performed on samples from the monomer recovery system:

1. Phenol in the fume scrubber overflow water.
2. Phenol and peroxides in the copolymer plant monomer recovery, before and after the compressor.
3. Phenol and peroxides from the plastisol plant recovery storage tank with and without caustic scrubbing.

In addition, samples of solids formed in the pipes of the first stage suction and second stage discharge of the copolymer compressor were scheduled to be analyzed for peroxide content. Since samples are not readily available from this sample source, these analyses will be run at a future date.

Table I shows the analysis results which gave rise to the following observations:

1. The phenol level in the fume scrubber overflow water is about the level expected.
2. The monomer sample from the copolymer recovery system before and after the compressor contained recovered vinyl acetate monomer only. It is expected that the peroxide level of a mixed monomer sample will be in about the same range. The "after compressor" phenol level is questionable since the sample was discolored (dark brown) which could yield a stronger signal in the spectrophotometer.
3. The peroxide level of the plastisol recovered monomer storage tank sample showed no difference between the scrubbed and non-scrubbed sample. The efficiency of the scrubber is doubtful, howev r, since sodium hydroxide

flakes were used. A scrubbing with a sodium hydroxide solution may be more effective.

It may be of interest that a sample of solids from the strainer basket between the first stage discharge and the second stage suction in the plastisol monomer recovery system had a total peroxide level of 15 PPM as hydrogen peroxide. This analysis was made at an earlier date.

In view of the results found, it is recommended to monitor the peroxide levels in the monomer recovery system at a set frequency. Inhibitor levels should be analyzed on a once a week basis. The effectiveness of a liquid scrubber on reduction of peroxides should be investigated.

Fred W. Kanzler.

F. W. Kanzler

FWK/rjl

Attachment

TABLE I

1. Phenol in fume scrubber overflow

Date and Time of Sample	Phenol, PPM
8/18/69	
0945 (1 hr. 30 min. after charge)	14
1430	8
1630	8
8/19/69	
0900 (45 min. after charge)	14
1200	12
1500	11

2. Copolymer recovery vinyl acetate monomer before and after compressor

	Peroxide, PPM as H_2O_2	Phenol, PPM
Before compressor	7	9
After compressor	11	24

3. Plastisol recovery storage tank, VCM/VA monomer

	Peroxide, PPM as H_2O_2	Phenol, PPM
*With scrubbing	1	6
Without scrubbing	1	7

*The scrubbing was accomplished by connecting a pipe section filled with sodium hydroxide flakes upstream of the sample bomb.