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INTERNAL CORRESPONDENCE

CHEMICALS AND PLASTICS

SOUTH CHARLESTON PLANT

P. O. BOX 2001, SOUTH CHARLESTON, W. VA. 25303

To (Name) Dr. T. T. Szabo
Division Mr. J. B. Hollingsworth
Location

Date January 16, 1976

Originating Dept.

Receiving Dept.

Copy to Dr. S. Gates
Mr. R. W. Lasher

Subject Vinyl Chloride, DENKA
Visit to Discuss Control

On January 14, 1976 Messrs. S. Gates, R. W. Lasher and R. N. Wheeler, Jr. met with a group from Denki Kagaku Kogyo K. K. (DENKA) to discuss control of vinyl chloride safety. (See attached list of representatives from DENKA.) Per agreement there was no discussion of solvent vinyl resins. Miscellaneous items of interest resulting from that discussion are as follows:

1. DENKA feels they are achieving 2 ppm VCM concentration in their plants. This, however, is based on monitoring two days each month.
2. They operate a "closed" reactor technology on suspension resins, but they open reactors and hydraulically clean them when needed.
3. Their reactors are glass lined ranging in size from 5,500-gallon old reactors to 13,200-gallon new reactors. The current largest reactor (glass ?) is about 20,000 gallons. These reactors are equipped with reflux condensers. They are investigating external recirculating slurry coolers.
4. Reactor short stop is MMHQ or "bis amide". (?)
5. New glass-lined reactors have a surface treatment in which the hydrogen ion in the glass surface is replaced by silver ion. The treatment is commercially available from the Japanese subsidiary of Pfaunder. This technology has been practiced about three years and started in the ABS resin and latex industries first. The function of the treatment is to reduce fouling. DENKA was satisfied that the initial results were good but they did not know how long it would be effective, particularly as the surface became rough. The treatment can only be done when reactors are reglassed.

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6. DENKA has computer control of polymerization plants. The hardware was purchased from Foxboro. Software was generated internally. They say they were the second plant to go to computer control in the world (Huls first).

7. DENKA favors fluid bed dryers for PVC manufacture.

8. Vinyl chloride monomer remaining in the homopolymer was comparable to Union Carbide Corporation's results. They do not make copolymers, i. e. high V.A. resins.

9. A sample of SS-70 containing 2 parts tin stabilizer showed yellowing at 110 minutes (190°C) and blackening at approximately 200 minutes. A press-molded plaque of this resin 0.25 inches thick was very clear, only a very faint haze.

10. DENKA expressed an interest in the mini-computer system on Union Carbide Corporation's automatic analyzers.

11. There was no discussion of dispersion resin technology. This is being handled by another group.

An informal agreement was reached to exchange data on governmental regulations and safety or health items.

Attached is a copy of the Japanese VCM regulation and a list of the items discussed.

R. N. Wheeler, Jr.

RNWJr. /pm

Attachments

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New York Office
Pan American Bldg.
200 Park Ave.
New York, N. Y. 10017, U. S. A.

DENKA
DENKI KAGAKU KOGYO KABUSHIKI KAISHA

Telephone : (Area Code 212) TN-7-1381
Cable Address : DENKASHA NEW YORK
Telex : 224717
Answer Back Code : DENKA

December 26, 1975 -

Mr. R. N. Wheeler, Jr.
Union Carbide Corporation
437 MacCorkle Avenue, South West,
South Charleston, W.Va. 25303

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R N WHEELER, JR.

Dear Mr. Wheeler:

It is our pleasure to have an opportunity to write to you.
We are one of leading chemical company in Japan and in our
line of products we also have polyvinylchloride and its mono-
mer.

In Japan we are also facing severe restrictions of VCM emission
and working to reduce VCM emission and residual monomer content
in polymer.

As I called you the other day, three of our technical people
in PVC plant are planning to come to this country and want to
visit you to talk over VCM stripping from PVC especially
solution or dispersion type polymers.

If possible we would like to visit you on Jan. 15 or Jan. 14.
We will appreciate your informing us your convenience.

Thanking you for your attention to this matter.

Very truly yours,

Denki Kagaku Kogyo K.K.

T. Sugimori

T. Sugimori
New York Office

cc: Mr.S. Gates
Licensing Mgr,UCC

T. Sugimori

Head Office : Sanshin Bldg., 10, Yuraku-cho 1-chome, Chiyoda-ku, Tokyo, 100 Japan

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Questionnaires

1. Method to meet VCM regulation
 - Installation and operation to keep VCM level low;
 - Working area
 - General circumstance (The atmosphere, drainage)
 - Remainning Monomer
2. Clean reactor technology
 - Solvent cleaning
 - Coating
 - Hydraulic cleaning
3. Automation of VCM, PVC process
 - Computer control
4. Continuous Polymerization
5. Large size reactor of PVC polymerization
6. Increased STY by means of
 - a) reflux condenser
 - b) slurry recirculating cooler
7. Safety control for emergency stop of PVC reactor (agitator, cooling water)
8. Corrosion of reactor jacket by water
9. Type of PVC drier
 - heat efficiency and steam cost
10. Method to remove static electricity in PVC drying section
11. Area monitoring system

12. Quality of general purpose resin

Heat stability

Plasticizer absorbability

Gelation speed

13. Special purpose resin

High impact resin

Graft resin

Heat resistant resin