

DATE : July 11, 1972

cc. D. B. Hosmer

SUBJECT : PCB System Changeovers

P. B. Hodges ✓

P. W. Gann

REFERENCE

J. F. Winkler

P. R. Parker

TO : W. B. Papageorge
St. Louis

D. C. Hoegel

At the request of P. B. Hodges, I forwarded to P. W. Gann one sample of HB40 from the Phthalic Anhydride Unit on June 26, 1972.

The discussion below summarizes the actions taken at the Plant during the changeover from PCB's to HB-40 on the Phthalic and Tetraphthalic Anhydride Units.

General

System changeovers were prompted by company policy on continuing PCB use in "open" heat transfer systems. To our knowledge regulatory officials have never conducted PCB analysis on the Plant's effluent. In-house sampling and analysis indicated effluent levels in the 30 - 40 ppb range.

Project design was based primarily on work already completed on similar high temperature systems at W. G. Krummrich. Following start-up of the TCPA and coincident safety problems, a detailed safety audit was performed. The recommendations were successfully implemented in the Phthalic Unit and start-up was accomplished without safety problems.

TCPA System

The original charge ~ 2000 gallons of FR-2 material was removed by drumming and a 500 gallon charge of HB-40 was added and circulated at 300°C through the system to remove residual PCB. This charge which contained 35% PCB was drummed and shipped with the 2000 gallons to W. G. K. for incineration. The system was then filled with HB-40.

Upon start-up of the thermol furnace and the TCPA process, numerous problems including corrosion and resultant fires occurred. Production operations continued and the system was closed by temporary measures. During June, the Department was shut down, the HB-40 has again been drained and 1000 gallons of

HB-40 added to flush the system. Throughout the TCPA run heat transfer efficiencies continually declined. At this time, the intent is to clean the system with Oakite 190 following the 1000 gallon flush in order to restore efficiencies. All cleaning materials will be drummed for incineration. Once the system is refilled, circulated and brought to operating temperature, a sample will be taken for PCB analysis.

Phthalic Anhydride System

The changeover in Phthalic was handled much more simply than TCPA. The initial 2500 gallon charge was shipped to W.G.K. for incineration via an old gasoline tank truck. The system was charged with 2000 gallons of HB-40 and has been operating without problems. Initial laboratory analysis showed 23% PCB in the system. Recent analyses by P. Gann and the Plant Lab have verified this level. The total system is essentially loss free with only minor amounts trapped in the vent cold trap (not enough to coat bottom of 55 gallon drum.)

Please contact me if additional information or samples are required.

M. A. Pierle
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