This summary contains information which may be of general interest to our clients and colleagues. It supplements more detailed monthly reports made to each business group.

Aroclor - 24 Applied Science Monthly Summary Aug 1974

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PROJECT HIGHLIGHTS

- Laboratory measurements show that the cause of foaming during the oxidation step of the Riedel Ethavan process is due to a 25% increase in surface tension during the reaction.

- Thermal stability measurements show that
  - o-nitrochlorobenzene still residue can be safely shipped by tank car for marketing purposes.
  - no safety hazards exist in the tentative process for specialty product MCS 1659;

    and in the solvent stripping step of the new Santoflex 67 process.

- Wet chemical procedures have been set up to monitor the sugar, sulfonate sulfur, nonsulfonate sulfur and methoxyl content of spent sulfide liquors (SSL). The data obtained are being analyzed statistically to determine the potential of various sources of SSL for vanillin.

- Microbial degradation studies using the Thompson-Duthie carbon dioxide evolution test have positively confirmed that Santicizer 160, Santicizer 711, and di(2-ethylhexyl) phthalate undergo essentially complete degradation to carbon dioxide and water.

- Initial biodegradation data on Santicizer 334F using the Thompson-Duthie carbon dioxide test indicate that degradation to carbon dioxide is greater than 75 percent of theory.

- Analyses with EPA methodology have shown that Aroclor 1016 contains only 2.3% PCBs compared to 23% for Aroclor 1242. This is based on the proposed definition of PCBs as those isomers with a relative retention time >60 compared to p,p'-DDE [1,1-dichloro-2,2-bis(p-chlorophenyl) ethylene].

- Two components in laboratory treated Aroclor 1016 were shown by gas chromatography/mass spectrometry to be trichlorobiphenyls rather than pentachlorobiphenyls as suspected. If these components had been pentachlorobiphenyls, this product would have been well out of specifications.

- Tanatex monoisopropyl biphenyl (MIPB) was shown by gas chromatography/mass spectrometry to have a significantly different impurity composition than Monsanto supplied MIPB for Santosol 220. This difference will prevent Tanatex from making valid claims for their product based upon our toxicological data.

- PVC formulated with and without plasticizers did not evolve vinyl chloride monomer (VCM) to air under standard and extreme cold milling conditions. Low levels of VCM were observed under pyrolyses conditions at 530°C.