Monsanto

COMPANY CONFIDENTIAL

FROM (NAME & LOCATION) J. N. Maloney - Pensacola Textiles Division

DATE : October 24, 1969

SUBJECT : Monthly Report, October,1969, Analytical Development

REFERENCE :

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Highlights

"Imine" blitzes in refined and blended HMD have been traced to diamine synthesis. They were caused by high levels of N-hexyl-azacycloheptane (HHMI)produced in crude HMD during a feed distribution test. Water samples from various locations in the plant and river have been analyzed for Arochlor 1254. This monitoring will continue on a weekly basis.

Summary

HMD

Continued surveillance of crude HMD, using the new cyane extraction-VPC procedure, showed high levels (300mpm) of HHMI in 414B unit on September 24. Samples from other units at the same time analyzed less than 5 mpm HHMI. At this time a multiple feed injection test was being run on "B" unit while all other units were operating under standard conditions. Immediate termination of the test unit prevented another "Imine" blitz in the refining system. Isolation and tentative identification of N-aminohexylazacycloheptane and higher molecular weight polyamine homologs was carried out with crude HMD from this aborted test. The presence of these compounds, (at least 0.5%) supports the theory of poor reactanta mixing in the test unit.

PCB Analysis

Thirteen samples have been analyzed showing periodic releases of Arochlor 1254 from Bldg 408 into the east ditch. The decanter of Bldg 408 contained 6.5 ppm Arochlor 1254. Since this decanter sporadically overflows into the east ditch it explains the variable range observed. Samples are now analyzed on a weekly basis.

Two electron capture detectors have been received and characterized for the analysis of Arochlor 1254 in aqueous streams. The tritium detector was found to be more versatile in the analysis than the Nickel-63 detector since it showed greater linear range and greater sensitivity.

DSW 373138

IN-10 REV. 11-65

STLCOPCB4098944

Sample Load: September 16, through October 15.

Project:	No. Samples:
Chemical Support:	
HMD Pensacola	111
NAOC	3
EHD Catholyte	19
PXD	21
PCB	13
HMI Conversion (W.A.Heckle)	30
DBA Evaporator (J.J.Hicks)	12
ADN,ACN,Caprolactam	1
	210

Nylon Salt

The fluorescence spectra of nylon salt that meets plant specifications reveals two regions of emission. The primary fluorescence occurs at 365 mu.- when excited with 295 mu energy. Data obtained to date indicate that the fluorescence impurities come from HMD.

The fluorescence of nylon salt crystallized in the pilot plant was reduced from 0.98ppm to 0.06ppm as quinine sulfate. Other preliminary data show that, pH will be 7.74 and all routinely measured impurities will be reduced by 2 to 10-fold.

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