

**DIPHENYL  
AND  
CHLORINATED DIPHENYL  
DERIVATIVES**

**JUNE 1935**

OSW 001279



**COPY N<sup>o</sup> 2**



#### Aroclor 1260 Operators

1. See that still charges are broken up, weighed correctly and charged to the stills. The day operator has two helpers so that charges for all three shifts may be broken out on the day shift.
2. Operate stills and flaker.

#### Health and Welfare of Operators

In May, 1955, the operators in distilled Aroclors, both Badger and 1260, began to develop a severe type of dermatitis. At that time ventilation facilities in both operations were most inadequate and the men were exposed to dust and fume from the hot Aroclors. However, several of the men had been subject to the same exposure for three years previous to this and had suffered no ill effects. At about the same period the electrical properties of the distilled Aroclors began to fall below specifications, therefore it was assumed that some impurity, hitherto not present, was causing the trouble. Investigation revealed that the benzol then in use contained appreciable quantities of paraffin, which when pyrolyzed with benzol produced styrene as an impurity in the diphenyl. When the diphenyl was chlorinated, styrene dichloride was also formed. This compound is exceedingly unstable, giving up hydrochloric acid very readily. The theory developed from these findings, and almost certainly borne out by circumstances, was that the styrene dichloride entered the pores of the skin with Aroclor vapor and finely divided dust where it decomposed. The acid formed acted as an irritant, infection set in and the skin disease resulted.

Skin specialists were consulted, but cure of the disease was found to be slow and difficult. The company became involved in an expensive litigation since suit was entered by the majority of the men affected.

As a result of this trouble the following precautionary measures were taken,

1. All affected men were removed from the operation and new men substituted as rapidly as they could be trained.
2. Adequate ventilation facilities were installed.

DSW 001398



3. A complete change of clean clothing was and still is furnished to each man daily.
4. Towels, soap, alcohol and cold cream are also furnished. Each man is required to rub his face, neck and arms with cold cream before going to work and to take a thorough bath and rub himself with alcohol after work.
5. The men are examined regularly by the Plant Physician.
6. No man who shows a tendency to dermatitis is employed in the Department.
7. Rigid specifications were set up for benzol so that there could be no recurrence of styrene.

As a result of these precautions there has been no recurrence of dermatitis among the operators.



# DIPHENYL AND AROCLOR ORGANIZATION CHART



