

SECTION I

TOXICITY STUDY RESULTS

I. MODEL III ENAMEL SYSTEM

In December, 1968, Marshall Laboratory formally requested Haskell Laboratory to conduct an investigation to obtain a comparison of the hazards involved in spraying the following paint systems:

1. 836-0185 Model II "Imron" 836-Line enamel (white)
2. LBA Model III urethane enamel (white)
3. U.S. Paint urethane enamel (red)
- C 4. 823-8022 Corlar® epoxy enamel (white)
- C 5. RK-808 Flintflex® moisture cure polyurethane (blue)
6. MMA/HEA Model III urethane enamel (white)
- C 7. 183-508 Dulux® enamel (white)

Samples 1, 2, 3 and 6 contained Desmodur N while samples 4, 5, and 7 were current DuPont products included as controls. Desmodur N was also tested as a raw material in its 75% solids form.

Haskell was asked to carry out:

1. Spray inhalation - one hour exposure to spray mist
2. Primary irritation and sensitization
3. Eye irritation

Haskell Laboratory found the following:

1. Spray Inhalation: Gross and histopathologic examination revealed that although the test material produced some discomfort during exposure, there was no tissue damage observed from one to 14 days post-exposure in any of the animals tested. Particles probably representing the test material were found in the lungs of almost all animals throughout the recovery period; however, not enough to make any comparison. Their location in the lung cells was consistent with a normal reaction to biologically inert, insoluble materials. It appeared that these particles might remain in the lungs for a rather long time and would finally be eliminated without injury to the animal.

Desmodur N must be considered a skin sensitizer although not as strong as toluene diisocyanate. (As regards to human experience with TDI, there has been no reported cases of skin sensitization according to Haskell.)

III. ACETYL ACETONE H-449

Haskell reports oral toxicity to rats to be similar to formaldehyde. Inhalation tests show it resembles cyclohexanone. In primary skin irritation, it acts in a manner similar to ethyl alcohol. In eye injury from fluid, it acts in a manner similar to acetone.

Toxicity of acetylacetone is covered in more detail in a paper by H. F. Smyth, Jr. and C. P. Carpenter, *Journal of Industrial Hygiene and Toxicology*, 26 269-273 (1944).