

[REDACTED]

E. I. du Pont de Nemours and Company
Haskell Laboratory for Toxicology and Industrial Medicine

HASKELL LABORATORY REPORT NO. 66-76 [REDACTED]

Material Tested

Haskell No.
9542-3

Other Codes

Submitted by

[REDACTED] Jackson Lab.,
Organic Chemicals Dept.

CARDIAC SENSITIZATION

Procedure: Ten healthy male beagle dogs were exposed to the test mixture via face mask [REDACTED] while having their electrocardiogram recorded on Lead I; the two active electrodes were placed on the right and left sides of the chest and the indifferent electrode over midback. The test animals received a control injection of epinephrine (0.008 mg/kg) intravenously five minutes prior to exposure and a challenge injection of the same dosage after breathing the test mixture for five minutes. Exposure to [REDACTED] was continued for five minutes following the challenge injection to observe recovery.

The test material, a liquid, was vaporized by bubbling four liters of air per minute through an "NO₂ Scrubber" containing 60 milliliters of test compound. The scrubber was housed in a warm water bath (38°C). After each exposure the material remaining in the scrubber was discarded and replaced with a fresh sample.

The vapor mixture reaching the dog was monitored by two sampling methods. (1) A one-half milliliter air sample was taken every minute during exposure with a gas tight syringe from the line leading to the dog mask. (2) A portion of the mixture 0.33 to 1.0 liters per minute was drawn from a point near the dog mask through two impingers containing 20 ml of absolute ethanol. Both the air and impinger samples were analyzed on a gas chromatograph equipped with a flame ionization detector and a 6' x 1/8" stainless steel, 10% FFAP on chromasorb W column. Only the main component [REDACTED] was measured analytically. Standards had been made previously by using a relatively pure (93.5%) sample of [REDACTED]

Results: The mean exposure concentration of [REDACTED] as measured by air samples was 110.3 ± 11.1 mg/L (6047 ± 608 ppm). As measured by impinger, it was 104.5 ± 15.6 mg/L (5729 ± 855 ppm). The concentrations of the other components were relatively low in relation to the main component, especially the "high boilers." The concentration of the "low boilers" (not the main component) decreased over the course of the exposure. During the exposure the color of the mixture in the NO₂ scrubber changed from clear purple to clear yellow.

Results (Continued)

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None of the ten dogs tested had any serious arrhythmias as judged by the criteria of the cardiac sensitization test (multiple consecutive ventricular beats or ventricular fibrillation). During the first minute of exposure to [REDACTED] the animals struggled--perhaps due to the presence of an irritating constituent.

No attempt was made to expose dogs to a higher test concentration, since based on the design of the test the animals were for all practical purposes exposed to a saturated vapor.

Summary: According to the conditions of this study, concentrations of 105-110 mg/L of [REDACTED] the main component of the [REDACTED] did not produce cardiac sensitization in any of the animals tested.

Report by:

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