



DuPont Central Research
and Development

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8EHQ-1196-13758

Contains No CBI

November 19, 1996

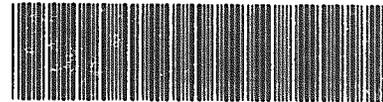
EXPRESS MAIL- RETURN RECEIPT REQUESTED

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Attention: 8(e) Coordinator
Office of Pollution Prevention and Toxics
U. S. Environmental Protection Agency
401 M Street S.W.
Washington, D.C. 20460

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Dear 8(e) Coordinator:

8EHQ-1096-13758
2-Propenenitrile, 2-chloro-
CAS Number 920-37-6



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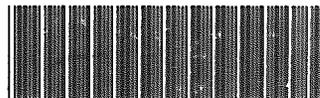
This letter informs you of the results of a one-week inhalation study we recently conducted with this material.

Three groups of ten male rats each were exposed (nose-only) by inhalation to vapor atmospheres of 2-chloroacrylonitrile (2-CAN) at concentrations of 0.24, 1.3, or 19 ppm six hours/day, for a total of five exposures. A positive control group of ten male rats was exposed simultaneously to 19 ppm acrylonitrile. Rats were weighed and observed daily for clinical signs of toxicity during the exposure period, and had a modified functional observational battery assessment performed prior to and following the exposure period, and on the final day of the recovery period. At the end of the exposure period, five rats/group were sacrificed and necropsied. Following a 17-day recovery period, all surviving rats were sacrificed and necropsied. All rats on the study were examined for gross and microscopic pathological changes.

Rats exposed to 19 ppm 2-CAN had significantly decreased mean body weights during the exposure period and most of the recovery period; in addition, lung noise, irregular respiration, and gasping were observed in these rats. One rat exposed to 19 ppm 2-CAN died on the 10th day of recovery, and two rats from this group were sacrificed in extremis (one on the 10th day of recovery and the other on the 11th day of recovery).

The modified functional observational battery findings following the fifth exposure demonstrated that some rats exposed to 19 ppm 2-CAN

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had a statistically significantly increased incidence of abnormal gait and posture when compared to controls, and one rat had intermittent head jerks (shakes).

Rats exposed to 19 ppm 2-CAN had lung weight effects following the recovery period, in addition to significant gross and microscopic observations. Microscopically, the target organs were the nose, trachea, larynx, and the lungs. Many cells lining the respiratory tract were lost (necrosis) by the end of the exposure period. Following the recovery period, repair of these cells (hyperplasia) was predominant in the trachea, larynx, and lungs. The olfactory regions of the nose had significant areas denuded of epithelium, although regeneration was observed in those olfactory areas that had sustained lesser degrees of necrosis. One of five rats exposed to 1.3 ppm 2-CAN had minimal nasal olfactory degeneration/regeneration following the exposure period, but no adverse effects were observed in rats following the recovery period. No compound-related effects were observed in any rats exposed to 0.24 ppm 2-CAN or 19 ppm acrylonitrile.

The effects described above are being reported in accordance with the guidance given in the EPA TSCA Section 8(e) Reporting Guide (June, 1991).

Sincerely,

Charles F. Reinhardt

Charles F. Reinhardt, M.D.
Director

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