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August 31, 1995

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ATTN: Section 8(e) Coordinator
Office of Toxic Substances
U.S. Environmental Protection Agency
401 M Street, SW
Washington, DC 20460



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INIT 09/06/95

Contains No CBI

Dear Sir:

Bayer Corporation is submitting a recently received one-page summary of an acute inhalation toxicity study of 2-Chloroacrylonitrile (CAS# 920-37-6).

Rats were exposed to vapor concentrations of 2-chloroacrylonitrile of 62, 87, 128, 201, or 396 mg/m3 air for a 4-hour period. Clinical signs of toxicity were observed in all treatment groups and some of these signs lasted for up to 9 days post-exposure. Necropsy findings supported treatment-related lung damage. Mortality was seen at exposures of 87 mg/m3 and above, resulting in an LC50 of 102 mg/m3 air.

The LC50 value obtained in this study places 2-chloroacrylonitrile in the "extremely toxic" category of EPA's TSCA 8(e) Reporting Guidance Document. Such results, according to this document, are to be submitted without regard for exposure potential. Hence, these results are being brought to your attention. We will provide this information in our regular hazard communications literature.

Please contact me if you have any questions.

Sincerely,

MR
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10-24-95



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Donald W Lamb
Donald W. Lamb, Ph.D
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2-Chloroacrylonitrile
CAS # 920-37-6

4. SUMMARY

A study on the acute inhalation toxicity of 2-CHLORACRYLNITRIL (hereafter referred to as *test substance*) in rats has been conducted in accordance with OECD Guideline No. 403. Groups of rats were exposed to average vapour concentration of 62, 87, 128, 201, and 396 mg/m³ air. The results can be summarized as follows:

| | |
|---|---|
| <p>LC₅₀ inhalation (vapour, 4 hr) Males & females combined: 102 mg/m³ air¹ Confidence interval (95%): 87 - 121 mg/m³</p> | <p>NO(A)EL Males & Females: < 62 mg/m³ air¹</p> |
|---|---|

Observations and Measurements

Vapour concentrations up to and including 62 mg/m³ did not induce test substance related mortality. Exposure to 87 mg/m³ air and above was followed by mortality occurring within post exposure days 1 through 5. Marked gender specific differences in susceptibility could not be observed. Exposures to concentrations of 62 mg/m³ and above were followed by a concentration-dependent bradypnoea, dyspnoea, laboured breathing pattern, rales, nose/snout area with red encrustations, cyanosis, prostration (lying on belly), reduced motility, ungroomed haircoat, hypothermia, decrease in body weights, and piloerection. The duration of signs (maximum duration up to day 9) and, in most instances, was dependent on respiratory signs. Gross necropsy revealed distended, dark-red lungs. Clinical observations and necropsy findings support the conclusion that a causal relationship between lethality and lung damage existed.

Evaluation and Assessment

The evaporated test substance proved to have a high acute inhalation toxicity to rats. Cumulative evidence suggest that there is a causal relationship of local effects to the respiratory tract and the observed findings. The ratio of saturation vapour concentration (@ ca. 20 °C) and LC₅₀-value appears to be greater than 2000. Accordingly, the hazard potential of 2-CHLORACRYLNITRIL is considered to be high.

¹ All concentration data represent actual concentrations of the test substance in the rats' breathing zone.