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Industrial BIO-TEST *Laboratories, Inc.*
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REPORT TO

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ACUTE VAPOR INHALATION TOXICITY STUDY WITH [redacted] IN ALBINO RATS

OCTOBER 14, 1975

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Industrial **BIO-TEST** *Laboratories, Inc.*

(b) (4)

ACUTE VAPOR INHALATION TOXICITY STUDY IN RATS

Test Material: (b) (4) (b) (4)
Form Administered: Vapor
Acute LC_{50}: < 369,440 mg/m^3 air

Strain: Charles River Rats
Exposure Time: 30 minutes
Observation Period: 30 minutes
(b) (4)

Generation of Material Exposure:

The vapor was generated by passing a stream of clean, dry air (-40°C dewpoint) over the undiluted test material. The test material was heated to 300°C. The air-vapor mixture was then introduced into the exposure chamber.

Chamber Conditions Group No.	Size (liters)	Atmospheric Pressure (inches Hg)	Temperature (°C)	Air Flow (l/min)
I	80	30.18	28	4.56

Results Group No.	Total Number of Animals Male/Female	Nominal Concentration	Mortality Male-Female	Weight Gain Male-Female (grams)
I	5/5	369,440 mg/m^3 air	5/5 - 5/5	0-5

Remarks

Reactions are presented in Table I.

All rats died within 30 minutes into the exposure.

The test material, under the conditions used in this experiment, was lethal to rats. All male and female rats used in this experiment died during the exposure period. Necropsy, conducted as quickly after death as possible, did not reveal any gross pathologic alterations.

Respectfully submitted,

INDUSTRIAL BIO-TEST LABORATORIES, INC.

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TABLE I

TEST MATERIAL: (b) (4) (b) (4)

Acute Vapor Toxicity Study - Rats

Reactions

Reaction	Number of Animals Affected	Time of Onset After Start of Exposure (min)	Duration (min)
Ptosis	10	2	28
Ruffed fur	10	2	28
Enophthalmus	10	2	28
Hypoactivity	10	3	27
Dyspnea	10	4	26
Lacrimation	10	5	25

PROCEDURE FOR ACUTE VAPOR INHALATION TOXICITY STUDY

Young adult albino rats were employed as test animals. The rats were selected after having been under observation for at least 5 days to insure their general health and suitability for testing. The animals were housed in stainless steel cages and permitted a standard laboratory diet* plus water ad libitum, except during inhalation exposure.

During the exposure period, observations were made with respect to incidence of mortality and reactions displayed. At the end of the exposure period, the rats were returned to their cages for observation.

A body weight was determined for each animal prior to inhalation exposure and for each surviving animal at the end of the observation period. The data were recorded as an index to growth.

Gross pathologic examinations were scheduled to be conducted upon all animals which might succumb during the test period and upon those sacrificed at the end of the observation period.

Test animals were exposed in a specially constructed inhalation chamber. The chamber was designed so that the animals could be introduced into the test atmosphere after 99 percent of the maximum vapor concentration was established. Each animal was caged separately during exposure to minimize filtration of inspired air by animal fur.

Vapor was generated by bubbling a stream of clean, dry air (-40°C dewpoint) through the undiluted test material. The resulting air-vapor mixture was introduced into the exposure chamber at the top center, dispersed by a baffle plate and exhausted at the bottom of the chamber. The vapor generator was of all-glass construction and was linked to the exposure chamber by a short length of Tygon tubing. The air flow rate through the system was measured with a rotameter connected upstream of the generator. The rotameter was calibrated with a wet-test meter after the exposure was completed. The average nominal vapor concentration was calculated by dividing the generator weight loss by the total volume of air used during the test.

Whenever possible, the LC_{50} was calculated using the method of Litchfield and Wilcoxon**.

* Wayne LAB-BLOX for Rats, Allied Mills, Inc., Chicago, Illinois.

** Litchfield, J. T., Jr. and Wilcoxon, F., "A Simplified Method of Evaluating Dose-Effect Experiments," J. Pharm. & Exp. Ther. 96, 99 (1949).