

US EPA ARCHIVE DOCUMENT

MRID No. 438698-03

**DATA EVALUATION RECORD**  
**§ 71-2(B) -- WATERFOWL DIETARY LC<sub>50</sub> TEST**

1. **CHEMICAL:** Captan PC Code No.: 081301

2. **TEST MATERIAL:** Captan Technical Purity: 90%

3. **CITATION:**

Authors: B. Hakin, A.J. Johnson, A. Anderson, and I.S. Dawe

Title: Captan: Dietary Toxicity (LC<sub>50</sub>) to the Mallard Duck

Study Completion Date: December 10, 1990

Laboratory: Huntingdon Research Centre Ltd.,  
Huntingdon, Cambridgeshire, U.K.

Sponsor: Zeneca Inc.

Laboratory Report ID: ISN 229/901208

MRID No.: 438698-03

DP Barcode: Not available.

4. **REVIEWED BY:** Rosemary Graham Mora, M.S., Environmental Scientist, KBN Engineering and Applied Sciences, Inc.

Signature: *[Handwritten Signature]* for RBM Date: 4/2/96

**APPROVED BY:** Pim Kosalwat, Ph.D., Senior Scientist, KBN Engineering and Applied Sciences, Inc.

Signature: P. Kosalwat Date: 4/2/96

5. **APPROVED BY:**

Signature: *[Handwritten Signature]* Date: 6/6/96

6. **STUDY PARAMETERS:**

**Scientific Name of Test Organism:** *Anas platyrhynchos*

**Age of Test Organisms at Test Initiation:** 8 days old

**Definitive Study Duration:** 8 days

7. **CONCLUSIONS:** This study is scientifically sound and meets the guideline requirements for an acute avian dietary toxicity study using mallard ducks. The LC<sub>50</sub> was >5200 ppm nominal, which classifies the test material as practically non-toxic to mallards. The NOEC was 1300 ppm nominal since no birds at or below this test level demonstrated signs of toxicity during the study.

**Results Synopsis**

LC<sub>50</sub>: >5200 ppm

95% C.I.: N/A

NOEL: 5200 ppm

Probit Slope: N/A



8. ADEQUACY OF THE STUDY:

- A. **Classification:** Core
- B. **Rationale:** Fulfills guideline requirements.
- C. **Repairability:** N/A

9. GUIDELINE DEVIATIONS: The brooder temperature was not reported. The guidelines recommend a brooder temperature of 35°C.

10. SUBMISSION PURPOSE:

11. MATERIALS AND METHODS:

A. **Test Organisms**

Guideline Criteria	Reported Information
<b>Species:</b> A wild waterfowl species, preferably the mallard ( <i>Anas platyrhynchos</i> ).	<i>Anas platyrhynchos</i>
<b>Age at beginning of test:</b> 5-10 days old (preferably 5).	8 days old
<b>Supplier</b>	The County Game Farms, Ashford, England
<b>Chicks appeared healthy and did not have excessive mortality before the test?</b>	Not reported.
<b>Acclimation period:</b> As long as possible.	7 days

B. **Test System**

Guideline Criteria	Reported Information
<b>Pen size:</b> about 70 x 100 x 24 cm	84 x 57 x 27 cm
<b>Brooder temperature:</b> about 35°C (95°F)	Not reported.
<b>Room temperature:</b> 22-27°C (71-81°F)	Minimum: 26 (±1.6)°C Maximum: 29 (±1.4)°C

Guideline Criteria	Reported Information
<b>Relative humidity:</b> 30-80%	65 ±6.7%
<b>Adequate ventilation?</b>	Yes
<b>Photoperiod</b> Minimum of 14 h of light.	Continuous light
<b>Diet:</b> A commercial waterfowl feed.	Standard HRC chick diet in meal form

### C. Test Design

Guideline Criteria	Reported Information
<b>Range finding test?</b>	None reported.
<b>Definitive Test</b> <b>Nominal concentrations:</b> Four minimum, 5 or 6 strongly recommended, in a geometric scale, unless $LC_{50} > 5000$ ppm.	163, 325, 650, 1300, 2600, and 5200 ppm (not adjusted for purity).
<b>Controls:</b> Control group tested with diet containing the maximum amount of vehicle used in treated diets?	Yes. Three negative control groups were used.
<b>Number of birds per group:</b> 10 (strongly recommended)	10 birds per group
<b>Vehicle:</b> Distilled water, corn oil, propylene glycol, 1% carboxymethyl cellulose, or gum arabic.	None
<b>Vehicle amount (% of diet by weight):</b> Not more than 2%.	N/A
<b>Test durations:</b> 5 days with treated feed and at least 3 days observation with "clean" feed.	3 days pretreatment 5 days with treated diet 3 days observation period
<b>No mortality during last 72 hr of observations?</b>	None

**12. REPORTED RESULTS:**

Guideline Criteria	Reported Information
Quality assurance and GLP compliance statements were included in the report?	Yes
Body weights measured at beginning and end?	Group mean body weights were recorded 3 days prior to test initiation, at test initiation and on Days 5 and 8.
Estimated consumption per pen reported for pretreatment, treatment, and observation periods?	Yes
Control Mortality: Not more than 10%	One bird in the third control group died on Day 3.
Raw data included?	Yes
Signs of toxicity (if any) were described?	All surviving birds remained in good health throughout the study.

**Mortality**

Conc. (ppm)		No. of Birds	Cumulative Number of Dead							
Nominal	Mean Measured		Day of Study							
			1	2	3	4	5	6	7	8
Control	<12	30	0	0	1	1	1	1	1	1
163	154	10	0	0	0	0	0	0	0	0
325	325	10	0	0	0	0	0	0	0	0
650	611	10	0	0	0	0	0	0	0	0
1300	1290	10	0	0	0	0	0	0	0	0
2600	2730	10	0	0	0	0	0	0	0	0
5200	5330	10	0	0	0	0	0	0	0	0

**Other Significant Results:** There was a reduction in food consumption and body weight gain in birds exposed to 2600 and 5200 ppm test concentrations during the exposure period.

