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MEMORANDUM

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HEALTH EFFECTS DIVISION
SCIENTIFIC DATA REVIEWS
EPA SERIES 361

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

SUBJECT: Cacodylic Acid Qualitative Risk Assessment Based On
Charles River Fischer F344 Rat Dietary Study

Caswell No. 133
PC Code: 012501

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Summary

This qualitative risk assessment of Cacodylic Acid was based upon a chronic toxicity/oncogenicity study conducted in Charles River Fischer F344 rats. The male rats were fed 0, 2, 10, 40 or 100 ppm of Cacodylic Acid for 105 weeks. The female rats were fed 0, 2, 10, 40 or 100 ppm of Cacodylic Acid for 107 weeks.

The statistical evaluation of mortality indicated no significant incremental changes with increasing doses of Cacodylic Acid for male or female rats.

Male rats had no significant dose-related increasing trends and no significant differences in the pair-wise comparisons of the dosed groups with the controls with respect to tumor incidence.

Female rats had significant dose-related increasing trends in urinary bladder transitional cell papillomas, carcinomas and combined papillomas and/or carcinomas. There were significant differences in the pair-wise comparisons of the 100 ppm dose group with the controls for urinary bladder transitional cell carcinomas, and combined papillomas and/or carcinomas.

Table 1. Cacodylic Acid - Charles River Fischer F344 Rat Study
Male Mortality Rates^{*} and Cox or Generalized K/W Test Results

Dose (ppm)	<u>Weeks</u>				Total
	1-26	27-52	53-78	79-107 ^f	
0	0/60	0/60	3/60	22/57	25/60 (42)
.2	0/60	0/60	2/60	21/58	23/60 (38)
10	0/60	1/60	1/59	20/58	22/60 (37)
40	1/59 ^a	0/58	2/58	22/56	25/59 (42)
100	5/60	0/55	4/55	17/51	26/60 (43)

^{*}Number of animals that died during interval/Number of animals alive at the beginning of the interval.

^aOne accidental death at week 12, dose 40 ppm.

^fFinal sacrifice at week 105.

() Percent.

Note: Time intervals were selected for display purposes only.

Significance of trend denoted at control.

Significance of pair-wise comparison with control denoted at dose level.

If *, then $p < 0.05$. If **, then $p < 0.01$.

Table 3. Cacodylic Acid - Charles River Fischer F344 Rat Study

Male Urinary Bladder Transitional Cell Tumor Rates[†] and
Exact Trend Test and Fisher's Exact Test Results (p values)

	<u>Dose (ppm)</u>				
	0	2	10	40	100
Papillomas (%)	0/60 (0)	0/59 (0)	1 ^a /59 (2)	1/57 (2)	0/55 (0)
p =	0.618	1.000	0.496	0.487	1.000
Carcinomas (%)	0/60 (0)	1 ^b /59 (2)	0/59 (0)	0/57 (0)	2/55 (4)
p =	0.071	0.496	1.000	1.000	0.227
Combined (%)	0/60 (0)	1/59 (2)	1/59 (2)	1/57 (2)	2/55 (4)
p =	0.105	0.496	0.496	0.487	0.227

[†]Number of tumor bearing animals/Number of animals examined, excluding those that died or were sacrificed before week 53.

^aFirst papilloma observed at week 106, dose 10 ppm.

^bFirst carcinoma observed at week 54, dose 2 ppm.

Note: Significance of trend denoted at control.

Significance of pair-wise comparison with control denoted at dose level.

If *, then $p < 0.05$. If **, then $p < 0.01$.

References

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