



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUN 16 1981

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

DATE: June 12, 1981

SUBJECT: EPA Reg.#677-269; Methane arsonates; Addendum (Pathology) to
2-Year Rat Feeding Study
CASWEL #549A Accession#245234

FROM: William Dykstra, Toxicologist
Toxicology Branch, HED (TS-769)

WHD for LDC

TO: Richard Mountfort (23)
Registration Division (TS-767)

6/12/81
WHD for WLB

Recommendations:

1. The pathological report submitted has been statistically analyzed using Fisher's Exact Test. Comparison of 4 thyroid tumors out of 66 thyroids evaluated in the control male rats (0 ppm) to 13 thyroid tumors out of 68 thyroids evaluated in the high-dose male rats (200 ppm) yielded a p value of .021 which is statistically significant. Toxicology Branch concludes that methane arsonic acid was oncogenic to the thyroid of male rats at 200 ppm.

Review:

1. SUBJECT: Summary - Thyroid Histopathology

TABLE: 1

Group Identification:	1	2	3	4	5	6	7	8	9	10
Initial Group Size:	75	75	75	75	75	75	75	75	75	75
Histologic Change or other status:										
Not evaluated-										
Not submitted	2	17	8	17	4	8	28	32	35	2
Tissue not in section	5	3	3	1	3	11	7	1	4	1
Tissue section incomplete	2	0	4	2	0	1	0	1	3	0
Autolysis - evaluated	24	29	32	32	21	9	17	20	14	28
Not remarkable	36	24	22	21	30	42	21	13	15	37
cyst	0	0	0	0	0	0	0	1	0	0
cyst, colloid	2	0	0	0	0	0	0	0	0	1
cyst, ultimobranchial-duct	0	0	0	0	0	0	0	0	1	0
subacute thyroiditis, focal										
minimal	0	0	1	0	0	0	0	0	0	0
moderate	0	0	0	0	1	0	0	0	0	0
hyperplastic, follicular										
diffuse	0	0	0	0	0	0	0	1	0	0
focal	0	0	0	0	2	0	0	0	0	1
hyperplastic, medullary cell										
focal	0	0	0	0	1	0	0	0	0	0
adenoma, follicular	0	0	0	0	4	1	1	0	0	2
adenoma, papillary	2	0	2	1	1	0	1	0	0	2
adenoma, medullary cell	2	2	2	1	4	2	0	2	1	1
carcinoma, follicular	0	0	0	0	2	1	0	3	1	0
carcinoma, papillary	0	0	1	0	1	0	0	0	1	0
carcinoma, medullary cell	0	0	0	0	1	0	0	1	0	0

2. Statistical analysis of the above data using One Tail P Statistic of Fisher compared 4 thyroid tumors out of 66 thyroids evaluated in the control male rats (0 ppm) to 13 thyroid tumors out of 68 thyroids evaluated in the high-dose male rats (200 ppm).

This statistical analysis gave a $p = .021$ which is statistically significant.

Test for Significance of Differences Between Proportions 6/11/01

Thyroid Tumors

ppm	#	RLSP	Total	$\pm 2(S.D.)$	One Tail P Statistic
0.000	4	66		6.05+/- (8.51)	Fisher's
200.000	13	66		19.12+/- (18.00)	0.021