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DU PONT CENTRAL RESEARCH AND DEVELOPMENT

Express Mail - Return Receipt Requested
Document Processing Center (TS-790)
Attention: F.Y.I. Coordinator
Office of Pollution Prevention and Toxics
U.S. Environmental Protection Agency
401 M Street SW
Washington, D.C. 20460

Dear Coordinator:

DIMETHYLFORMAMIDE - CAS # 68-12-2

We are submitting for your information the preliminary results from an 18-month inhalation study with DMF in mice. In this study, groups of mice were exposed 6 hours/day, 5 days per week, to either 0 (control), 25, 100, or 400 ppm DMF for 18 months. Our study confirms the previous literature (Clayton, 1963; Craig, 1984) in that the liver is the target tissue. We found increases in relative liver weights in male mice at 100 ppm and at 400 ppm and in female mice at 400 ppm. Hepatocellular hypertrophy was seen in all DMF-exposed groups with the incidence being dose-related. Individual cell necrosis was seen in all groups with the incidence being greater in the DMF-treated groups (see Table). The severity of this lesion in the 25 ppm mice was difficult to distinguish from the background lesion which suggests that 25 ppm, although an effect level, is approaching the no-observed adverse effect level. No other changes are apparent at this time.

We are continuing to examine the data from this study. This study supports the data already developed regarding the known effects in mice following inhalation of DMF. Based on the above finding and considering all the other available data concerning DMF, Du Pont concludes that the minimal effects seen at 25 ppm following 18-months of exposure do not provide evidence of serious or prolonged incapacitation based upon new EPA guidance regarding the reportability of "subacute/subchronic/chronic toxicity studies."

We will forward a copy of the final report to EPA when it is available.

Sincerely,

Charles F. Reinhardt

Charles F. Reinhardt, M.D.
Director

CFR/GLK:dj
Phone: (302) 366-5285

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July 28, 1992

FYI - OTS - 0892 - 0861 INITIAL
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TABLE

INHALATION STUDY WITH DMF-MOUSE
18-MONTH SACRIFICE

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EXPOSURE CONC. (PPM)	SEX	REL. LIVER WT. INCREASE (%)	HEPATOCELLULAR HYPERTROPHY (INCIDENCE)	INDIVIDUAL CELL NECROSIS (INCIDENCE)
0	M	--	0/60	15/60
	F	--	0/61	18/61
25	M	0	8/62	37/62
	F	2	4/63	28/63
100	M	17	32/63	43/63
	F	7	12/61	44/63
400	M	25	44/63	55/63
	F	12	34/63	48/63

0 0 0 3

References

- Clayton, J.W. Jr., Barnes, J.R., Hood, D.W., and Schepers, G.W.H., The toxicity of dimethylformamide, Am. Ind. Hyg. Assoc. J., 24:144:1963
- Craig, D.K., Wier, R.J., Wagner, W., and Groth, D., Subchronic inhalation toxicity of dimethylformamide in rats and mice, Drug Chem. Toxicology, 7:551:1984

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