D R Bryant
770-444

PLAINTIFF'S EXHIBIT

UC-3719

MEMORANDUM

Technical Center R/D management has asked that a list of known and suspected carcinogenic compounds be published. The attached Table includes many compounds or types of substances that are generally considered as proven carcinogenics in man, have induced cancer in animals under appropriate experimental conditions, or are regulated by specific Occupational Safety and Health Standards.

The chemicals shown do not include all substances that may cause cancer in man or animals. For instance, in 1975 NIOSH published a list of 1,500 chemical agents as "suspected carcinogens." Compounds were included which caused both benign and malignant tumors regardless of experimental conditions, dose, or practical significance for industrial exposure.

The American Conference of Governmental Industrial Hygienists (ACGIH) does not currently consider a substance an occupational carcinogen of any practical significance which:

1) Reacts by the respiratory route, at or above 1,000 mg/m^3 for the mouse or 2,000 mg/m^3 for the rat.

2) Reacts by the dermal route, at or above 1,500 mg/kg for the mouse or 3,000 mg/kg for the rat.

3) Reacts by the gastrointestinal route at or above 500 mg/kg/day for a lifetime; equivalent to about 100 g. total dose for the rat and 10 g. total dose for the mouse.

These dosage limitations exclude such substances as dioxane and trichloroethylene from consideration as carcinogens.

The National Cancer Institute's list of known human carcinogens has been included for interest even though there is no direct interest by R/D personnel in many of the substances.

As new information is published, the list of carcinogens will be revised.

R. W. Cope

Attachment
January, 1977

UCC 011903

Union Carbide trial exhibit UC-3719: R. W. Cope Memorandum Listing Known and Suspected Carcinogenic Compo... Published by AsbestosClaims.Law
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UCC 011904

KNOWN AND SUSPECTED CARCINOGENS

Specifically Government Regulated	Recognized as Human Carcinogens by ACGIH	Suspected Carcinogens by ACGIH	NCI List of Known Human Carcinogens
Asbestos	Asbestos		Asbestos
4-Nitrodiphenyl	4-Nitrodiphenyl		4-Nitrodiphenyl
alpha-Naphthylamine			
Methyl Chloromethyl ether			
3,3'-Dichlorobenzidine and its Salts		3,3'-Dichlorobenzidine	
bis(Chloromethyl) ether	bis(Chloromethyl) ether		bis(Chloromethyl) ether
beta-Naphthylamine	beta-Naphthylamine		beta-Naphthylamine
Benzidine	Benzidine		Benzidine
4-Aminodiphenyl	4-Aminodiphenyl		4-Aminodiphenyl
Ethyleneimine			
beta-Propiolactone		beta-Propiolactone	
2-Acetylaminofluorene			
4-Dimethylaminoazobenzene			
N-Nitrosodimethylamine			
Vinyl chloride	Vinyl chloride		vinyl chloride
	Arsenic trioxide	Antimony trioxide	Chlornaphazine(bis-2-chloro-ethyl-2-naphthylamine)
	Chromite ore	Benzene	Mustard gas (bis-chloroethyl sulphide)
	Nickel sulfide	Benz(a)pyrene	Nickel carbonyl
	Particulate polycyclic aromatic hydrocarbons	Beryllium	Diethylstilboestrol
		Cadmium oxide	
		Chloroform	
		Chromates of lead & zinc	
		Dimethylcarbamyl chloride	
		1,1-Dimethyl hydrazine	
		Dimethyl sulfate	Aflatoxin
		Epichlorhydrin	
		Hexamethyl phosphoramide	Arsenicals
		Hydrazine	Chromates
		4,4'-Methylene bis(2-chloro-aniline)	Estrogenic compounds
		4,4'-Methylene dianiline	Tobacco
		Monomethyl hydrazine	Tobacco smoke
		Nitrosamines	Soots
		Propane sultone	Tars
		Thallium	Pitches
		Vinyl cyclohexene dioxide	Asphalts
			Cutting oils
			Shale oils
			Creosote oils

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Specifically Government Regulated	Recognized as Human Carcinogens by ACGIH	Suspected Carcinogens by ACGIH	NCI List of Known Human Carcinogens
			High boiling petroleum oils
			Coke oven effluents
			Various combustion products
			Betel nut (chewing)
			Radium (Note a)
			Thorotrast (Note b)
			Uranium ores (radon and radon daughters)
			Other radioactive materials (Note a)
			Auramine (Note b)
			Magenta (Note b)
			Isopropyl oil
			Wood dust (Note b)

Note a: Carcinogenicity due to radiation.

Note b: Manufacturing exposure to these materials has been related to cancer induction; the materials themselves may not be carcinogenic.

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