ETHYL CORPORATION

INTER-OFFICE

December 14, 1982

TO: ALL TECHNICAL PERSONNEL
Baton Rouge Plant Lab and Ethyl Technical Center

SUBJECT: GUIDELINES FOR HANDLING CARCINOGENS

A manual entitled "Guidelines for Laboratory Handling of Carcinogens" exists and is the official reference setting forth procedures and requirements for handling and use of a specific list of chemical compounds with known or suspected human carcinogenic activity. The compounds on this list are contained in that manual.

This memo is provided to fully apprise all technical personnel as to the existence of a policy and procedures for handling of this type compound, and as a quick reference guide as to what is involved in the use of a material of known or suspected human carcinogenic activity. Please place the memo in your Accident Prevention Manual for future reference as needed.

A BRIEF GUIDE FOR WORKING WITH CARCINOGENS

Should you need to work with any of a group of chemicals widely recognized as or suspected of having human carcinogenic activity (see attached list), you will be required to follow special procedures. A manual entitled "Guidelines for Laboratory Handling of Carcinogens" is available from your supervisor to provide you with the details of these special procedures. This document is intended to provide you with a brief step by step description of what happens and what you need to be aware of should you decide to work with this class of chemical compounds. Place this memo in your Accident Prevention Manual for future reference as needed.

Please be advised of the following procedures and suggestions concerning use of known or suspected human carcinogens.

Preparations

Before ordering or preparing one of the listed compounds, consult the "Guidelines" manual and this memo. After reflecting on the special conditions and responsibilities you are about to incur, you may or may not wish to proceed. This is the time at which any recommended modifications or special considerations should be aired with your supervision, Toxicology and Industrial Hygiene and the Safety Engineer, and suitable procedures agreed upon for the use of these compounds in your specific case.

Ordering Chemical Carcinogens

Should you attempt to order one of the listed carcinogens or suspected carcinogens, the stockroom clerk will, after informing you, refer your order to your Director or Assistant Director for approval. This will automatically provide you and your supervision with an awareness of your plan to utilize this special class of chemical compounds. The amount ordered should be held to the minimum required since you will be responsible for its safe use, inventory and ultimate disposal.

Labeling

A special label which is available in the stockroom must be applied to each container to call attention to the special nature of the contents. Stockroom personnel will apply the labels before delivering your order. The same label should be placed on any subsequent containers you may use for storage of the material.

Submitting Samples for Analysis or Testing

When samples containing carcinogenic material are transmitted to R&D Services or others, it is imperative that samples be well identified with appropriate labels, that the carcinogen(s) be clearly identified on the request forms, and that preliminary contact and discussion be had with the supervisor of the receiving group.

Storage

A special locked central storage is provided for your convenience in storing these materials. All containers must be properly labeled and identified as to the person responsible for the material. We will periodically check contents of this storage, and require that those responsible for the material dispose of any compounds not actively needed.

Storage of limited amounts in labs and other areas is permitted if the materials are being actively used. Containers must be properly labeled, closed and surrounded by a second container capable of holding the contents of the primary container. Storage should be in a secure and appropriate place such that accidental exposure of another individual will not occur. Containers and storage area should be appropriately identified with labels.

Chloroform and carbon tetrachloride which are commonly used laboratory solvents of low carcinogenic potential and carried in inventory in the Stockroom, are exceptions to the above storage rules. Both will continue to be stocked on the open shelving rather than in the locked central storage. However, the bottles will be labeled as potential carcinogens, and should be used and stored in the laboratories in the same way as any other potential carcinogen. No inventory record is required for these two chemicals.

Inventory

An inventory showing usage from receipt of the material through disposal of recorded transfer to another party must be maintained by the user. It is suggested that the inventory be kept in your lab notebook.

Disposal

Final disposal in accordance with approved procedures (check with Safety Engineer) is the responsibility of the person who orders and receives the material, or who is on record as receiving the material from another.

Training

One Supervisor's Safety Meeting, or some portion thereof, shall annually be devoted to reviewing the "Guidelines for Laboratory Handling of Carcinogens" and this supplemental information. Each individual attending will sign a form indicating he attended the review.

For specific usage cases, the Supervisor will review all procedures specific to the use of that material with each individual who will be exposed. Each individual will sign a form indicating he has been so informed.

The signed forms will be forwarded to the central files and maintained therein.

Modifications

The "Guidelines" plus this supplemental information are provided as background for safe use of carcinogens and potential carcinogens. Usage by laboratory, pilot plant and sample preparation personnel can be quite different in scope and scale. No single document can anticipate or adequately serve all needs. Therefore, you must consult with your supervision before using these materials to review procedures. Modifications for practical and safe use may be desirable and necessary and are, of course, permissible so long as they safeguard personnel against overexposure, are evolved cooperatively with the Safety Engineer and the Industrial Hygiene representative from T&IH, are documented in writing, and properly explained to all personnel who will be exposed.

Other Potential Carcinogens

The list of compounds attached hereto does not cover all chemicals that may have carcinogenic potential. If you are suspicious or uncertain of the status of the chemicals you plan to use, consult the literature and the toxicologist representing Toxicology and Industrial Hygiene for your area. If the nature of the compound warrants, formulate a plan for safe handling under "Guideline" procedures or properly modified procedures.

Finally

Please keep this memo and the attached listing of carcinogens and suspected carcinogens in your Accident Prevention Manual for easy reference. A copy of the "Guidelines" can be obtained from your Supervisor, the Safety Engineer, or the central files.

Frank Conrad

Attachment

QUICK REFERENCE TABLE OF TLV'S
OF KNOWN AND SUSPECTED HUMAN CARCINOGENS

Material	TLV OSHA	TLV ACGIH	TLV Ethyl
2-Acetylaminofluorene	--		
Acrylonitrile	2 ppm	2 ppm	
4-Aminodiphenyl (p-Xenylamine)	--	--	
3-Amino 1,2,4-triazole		--	
Aniline and substituted monocyclic anilines-skin			1 ppm
#Antimony trioxide production		--	
Inorganic arsenic	10μg/M³		
Arsenic trioxide production		--	
#Asbestos	--		
Amosite		0.5 fiber >5 μm/cc	
Chrysolite		2 fibers >5 μm/cc	
Crocidolite		0.2 fiber >5μm/cc	
Other forms		2 fibers >5 μm/cc	
Benzene	--	10 ppm	
Benzidine - skin	--	--	
Benz (a) pyrene		--	
Beryllium		2.0μg/M³	
Carbon tetrachloride		5 ppm	
Chloroform		10 ppm	
bis (Chloromethyl)ether	--	0.001 ppm	
Chloromethyl methyl ether	--	--	
Chromite ore processing (chromate)		0.05 mg/M³ (as Cr)	
Chrysene		--	
Coke oven emissions (or coal tar pitch volatiles)	--	0.2 mg/M³ as benzene solubles	
1,2-Dibromo-3-chloropropane	1 ppb		
3,3'-Dichlorobenzidine (or its salts)	--	--	
4-Dimethylaminoazobenzene	--		

-- Indicates the agency involved has recognized that this material has carcinogenic potential but has not assigned a TLV.

Cigarette smoking can enhance the incidence of respiratory cancers from this or others of these substances or processes.

Ceiling - Indicates that the designated level should not be exceeded even instantaneously. Practically, this is usually measured over a 15-minute period.

Skin - Refers to potential exposure by skin absorption. Skin absorption must be prevented if the designated level is not be be invalidated.

Quick Reference Table of TLV's
of Known and Suspected Human Carcinogens

Material	TLV OSHA	TLV ACGIH	TLV Ethyl
Dimethylcarbamyl chloride		--	
1,1-Dimethyl hydrazine		0.5 ppm	
Dimethyl sulfate - skin		0.1 ppm	
Ethylene dibromide - skin		--	0.1 ppm
Ethylenimine	--		
Hexachlorobutadiene		0.02 ppm	
Hexamethyl phosphoramide - skin		--	
Hydrazine		0.1 ppm	
Lead chromate (as Cr)		0.05 mg/M^3	
4,4'-Methylene bis (2-chloroaniline) - skin		0.02 ppm	
Methyl hydrazine		0.2 ppm	
Methyl iodide - skin		2 ppm	
alpha-Naphthylamine	--		
beta-Naphthylamine	--	--	
Nickel sulfide roasting, fume and dust		1.0 mg/M^3 (as Ni)	
4-Nitrodiphenyl	--	--	
2-Nitropropane		25 ppm (ceiling)	
N-Nitrosodimethylamine - skin	--	--	
N-Phenyl-beta-naphthylamine		--	
Propane sultone		--	
beta-Propiolactone	--	--	
Propylene imine - skin		2 ppm	
o-Toluidine		--	1 ppm
Vinyl bromide		5 ppm	1 ppm
Vinyl chloride	1 ppm	5 ppm	
Vinyl cyclohexene dioxide		10 ppm	
Zinc chromate (as Cr)		0.05 mg/M^3	

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