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WHITE



POLICIES/PROCEDURES (CONT'D)

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- o INFORMING EMPLOYEES
- o MANAGEMENT PERFORMANCE
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- o ORGANIZATION/DUTIES - GENERAL OCCUPATIONAL HEALTH COMMITTEE

UNION CARBIDE CORPORATE OCCUPATIONAL HEALTH MANUAL

SUBJECT	SECTION	
EXPOSURE STANDARDS - U.S. AND PUERTO RICO	POLICIES/PROCEDURES	
	DATE 8/26/82	PAGE 1 OF 4
	APPLIES TO ☒ UNITED STATES ☐ INTERNATIONAL	

PURPOSE/BACKGROUND

In the conduct of the Corporation's business there is the potential that employees may be exposed to hazardous substances or physical agents. Exposure standards that the governments and Union Carbide have established are set at a level to protect employees from known adverse acute and chronic health effects.

This policy provides the basis for the exposure standards the Corporation will follow in the United States and Puerto Rico and the procedure used in establishing Union Carbide internal exposure standards.

POLICY

1. The allowable exposure levels permitted in component facilities will be the lowest of the levels mandated by the following:

   A. Current OSHA Standards (29CFR 1910), other OSHA Standards or other governmental (federal, state, local) regulations/standards applicable to the Union Carbide facility.

   B. The 1980 ACGIH Threshold Limit Values List for Chemical Substances after review and endorsement by the Corporate HS&EA Department if more restrictive than the 1968 ACGIH List on which OSHA based its original standards. The Physical agents section of the ACGIH TLV's is not included. Government standards are to be followed for physical agents.

   C. For radiation: OSHA Standards (29 CFR 1910.96) and National Bureau of Standards Handbook #69 ("Maximum Permissible Body Burdens and Maximum Permissible Concentrations of Radionuclides in Air and Water for Occupational Exposure").

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POLICY (CONTINUED)

D. A Union Carbide internal exposure standard established in response to the judgment that governmental and/or ACGIH standards do not provide an adequate margin of safety. The table in the Appendix shows the Union Carbide internal exposure standards that have been established. A list of carcinogens and teratogens is also included.

2. Components are to achieve compliance with these governmental or Union Carbide internal exposure standards using (1) technically and economically feasible engineering controls, (2) administrative procedures and/or (3) personnel protective equipment (in this preferred order).

SCOPE

This policy applies to all parts of UCC and its affiliates in the United States and Puerto Rico in which UCC has greater than 50 percent equity interest, and is recommended for application in affiliates of 50 percent or less equity interest. It does not apply to international components and affiliates.

PRACTICE

1. The Corporate Health, Safety and Environmental Affairs Department maintains a staff of industrial hygienists, physicians, toxicologists and epidemiologists to assist the components in assessing the adequacy of governmental exposure standards and in establishing UCC internal exposure standards.

2. Components and affiliates should not establish and implement their own internal exposure standards without review and endorsement by the Corporate HS&EA Department. The Corporate HS&EA Department will coordinate the establishing of all Union Carbide internal exposure standards.

SUBJECT	SECTION	POLICIES/PROCEDURES	
EXPOSURE STANDARDS - U.S. AND PUERTO RICO	DATE	8/26/82	PAGE 3 OF 4
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PROCEDURE

1. The Corporate Exposure Guidelines Committee routinely reviews maximum exposure level recommendations made by ACGIH and NIOSH concerning substances of interest to Union Carbide. If the Committee decides the scientific evidence suggests Union Carbide establish an internal exposure standard at the ACGIH, NIOSH or some other appropriate level, this recommendation is made.

2. Union Carbide personnel may request scientific review of a specific substance by the Exposure Guidelines Committee. This request should be sent to the Corporate Occupational Health and Medical Directors. The Committee will review and assess the scientific adequacy of the present standard(s). If the Committee feels an internal standard is needed, it writes a position paper containing its recommendations.

3. The Corporate HS&EA department in consultation with the component(s) reviews the recommendation, the position paper and the exposure experience, and establishes a Union Carbide internal exposure standard, if deemed necessary. If more than one Component is involved, understanding and acceptance is reached by all affected Components on a common standard.

4. The Corporate HS&EA Department notifies, if appropriate, the requisite government agencies about the internal exposure standard Union Carbide has established and the reasons for this action.

5. Component(s) notifies employees, customers and others, as appropriate, concerning the Union Carbide internal exposure standard. The component(s) may develop proactive and reactive press statements and questions/answers for use by component(s) management in dealing with the media. These statements and Q/A's shall be reviewed and cleared with the Corporate Communications, HS&EA and Law Departments prior to issue. HS&EA will coordinate development of these communication tools, as appropriate, if more than one component is involved. If the substance involves only one component, HSEA will advise that component to take the lead.

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PROCEDURE (CONTINUED)

6. The component(s) develops and implements action plans to achieve the new lower exposure standard.

7. The Corporate Occupational Health Director will update the table of internal standards and carcinogens and teratogens periodically and issue to holders of the Occupational Health Manual.

APPENDIX

See attached "List of Carcinogens and Teratogens," pages one through sixteen.

REFERENCE

1. The ACGIH Threshold Limit Values List is published annually by the:

   American Conference of Governmental Industrial Hygienists
   Publications Office
   6500 Glenway, Bldg. D-5
   Cincinnati, Ohio 45211

2. Advice and Service:

   Corporate Medical Director
   Corporate Occupational Health Director
   Corporate Industrial Hygiene Director
   Old Ridgebury Road
   Danbury, CT 06817

- END -

UNION CARBIDE CORPORATE OCCUPATIONAL HEALTH MANUAL

SUBJECT	SECTION	INFORMATION/GUIDELINES
ORGANIZATION/DUTIES - CORPORATE HEALTH, SAFETY AND ENVIRONMENTAL AFFAIRS DEPARTMENT	DATE 10/2/80	PAGE 1 OF 2
	APPLIES TO ☒ UNITED STATES ☒ INTERNATIONAL	

PURPOSE

To contribute to the achievement of Union Carbide's objectives by anticipating the Corporation's short and long-term needs in the areas of health, product safety, personnel safety and environmental affairs, and by providing strong leadership and direction in developing:

an integrated Corporate and component system of understanding and forecasting legislative and regulative changes, both Federal and State, and political and social changes related to health, product safety, personnel safety and environmental affairs;

Integrated Corporate and component strategies, policies and ethical legislative programs related to health, product safety, personnel safety and environmental affairs, and assuring their use;

Corporate administrative policies and procedures (standards) related to health, product safety, personnel safety and environmental affairs, with component input;

Corporate audit systems related to health, product safety, personnel safety, and environmental affairs;

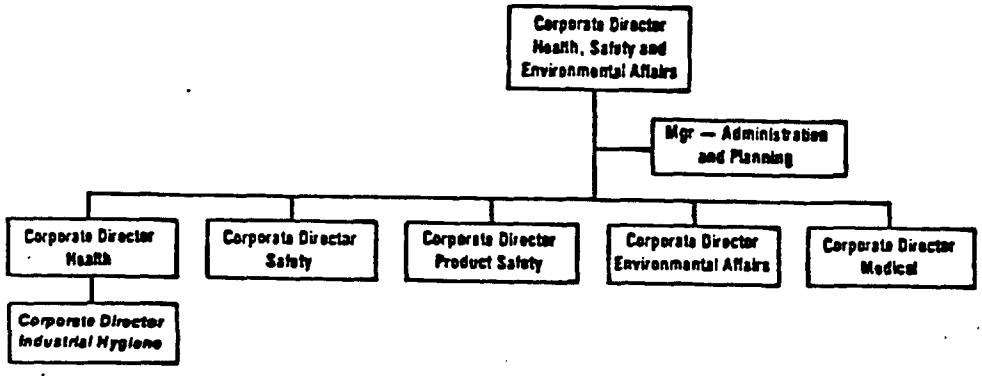
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SUBJECT	SECTION	INFORMATION/GUIDELINES
ORGANIZATION/DUTIES - CORPORATE HEALTH, SAFETY AND ENVIRONMENTAL AFFAIRS DEPARTMENT	DATE 10/2/80	PAGE 2 OF 2
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PURPOSE (CONTINUED)

and by managing the Corporate parts of the health, product safety, personnel safety, and environmental affairs system, including medical and industrial hygiene, and integrating these efforts with the associated activities of the components.

ORGANIZATION



A22081

UNION CARBIDE INTERNAL EXPOSURE STANDARDS LIST

BASED ON CARCINOGENICITY, TERATOGENICITY OR OTHER SIGNIFICANT TOXICITY

(See Reverse Side for Explanations and Definitions)

SUBSTANCE (CAS No.)	CARCINOGENICITY	TERATO-GENICITY	OTHER SIGNIFICANT TOXICITY	EXPOSURE STANDARD FOLLOWED BY UNION CARBIDE (SOURCE)
2-Acetylamino-fluorene (53-96-3)	Animal Carcinogen	Teratogen		OSHA Standard (R)
Acrylic acid (79-10-7)	** (R)	** (R)		2 ppm (UCC)
Acrylonitrile (107-13-1)	Human Carcinogen	Teratogen		2 ppm 10 ppm C (OSHA)
Allyl Methacrylate 96-05-9	** (R)	** (R)		20 ppm TWAs (skin) (UCC) (R)
4-Aminodiphenyl (92-67-1)	Human Carcinogen	N.D.		OSHA Standard (R)

UNION CARBIDE INTERNAL EXPOSURE STANDARDS LIST
BASED ON CARCINOGENICITY, TERATOGENICITY OR OTHER SIGNIFICANT TOXICITY

(See Reverse Side for Explanations and Definitions)

SUBSTANCE (CAS No.)	CARCINOGENICITY	TERATO-GENICITY	OTHER SIGNIFICANT TOXICITY	EXPOSURE STANDARD FOLLOWED BY UNION CARBIDE (SOURCE)
Asbestos (1332-21-4)	Human Carcinogen	(-)		2 Fibers/cc 10 Fibers/cc C >5 μm long (OSHA)
2,2'-Azobis-isobutyronitrile (78-67-1)	**	N.D.		0.5 ppm 2 ppm STEL (UCC)
Benzene (71-43-2)	Human Carcinogen	Teratogen (B)		10 ppm 25 ppm C 50 ppm/10 - min duration (OSHA)
Benzidine (92-87-5)	Human Carcinogen	N.D.		OSHA Standard (R)
Benzidine-derived dyes	Human Carcinogens	N.D.		As Low As Practical (UCC)
Benzyl Chloride (100-44-7)	**	N.D.		1 ppm (OSHA)

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UNION CARBIDE INTERNAL EXPOSURE STANDARDS LIST
BASED ON CARCINOGENICITY, TERATOGENICITY OR OTHER SIGNIFICANT TOXICITY

(See Reverse Side for Explanations and Definitions)

SUBSTANCE (CAS No.)	CARCINOGENICITY	TERATO-GENICITY	OTHER SIGNIFICANT TOXICITY	EXPOSURE STANDARD FOLLOWED BY UNION CARBIDE (SOURCE)
Bis-2-Chloro-ethyl ether (111-44-4)	**	N.D.		15 ppm C (Skin) (UCC) (R)
Bis-2-Chloro-ethyl-2-naphthyl-amine (494-03-1)	Human Carcinogen	N.D.		As Low As Practical (UCC)
Bis-Chloromethyl ether (542-88-1)	Human Carcinogen	N.D.		OSHA Standard (R)
Butadiene (106-99-0)	Animal Carcinogen (R)	(-) (R)		10 ppm TWA8 (UCC) (R)
Cadmium (7440-43-9)	Suspect Cancer Agent (R)	Teratogen		40 $\mu g/m^3$ (F) 200 $\mu g/m^3$ C (UCC) (R)

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UNION CARBIDE INTERNAL EXPOSURE STANDARDS LIST
BASED ON CARCINOGENICITY, TERATOGENICITY OR OTHER SIGNIFICANT TOXICITY

(See Reverse Side for Explanations and Definitions)

SUBSTANCE (CAS No.)	CARCINOGENICITY	TERATO-GENICITY	OTHER SIGNIFICANT TOXICITY	EXPOSURE STANDARD FOLLOWED BY UNION CARBIDE (SOURCE)
Carbon tetra-chloride (56-23-5)	Animal Carcinogen	(-)	Embryotoxic	2 ppm 4 ppm C (UCC)
Chlorodifluoro-methane (Fluorocarbon-22) (75-45-6)	**	Teratogen*		1000 ppm (ACGIH, UCC)
Chloroform (67-66-3)	Animal Carcinogen	Teratogen		10 ppm TWA§ 25 ppm STEL (UCC)
Chloroprene (126-99-8)	**	**	Embryotoxic	10 ppm TWA§ (Skin) (ACGIH)
Chromium-6 compounds	Animal Carcinogen	**		0.05 mg/m^3 (as Cr) (ACGIH)
Diallylamine 124-02-7	N.D. (R)	N.D. (R)		10 ppm TWA§ (UCC) (R)
Di-Sec-butoxy-acetophenone (68109-57-9)	**	N.D.		**

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UNION CARBIDE INTERNAL EXPOSURE STANDARDS LIST
BASED ON CARCINOGENICITY, TERATOGENICITY OR OTHER SIGNIFICANT TOXICITY

(See Reverse Side for Explanations and Definitions)

SUBSTANCE (CAS No.)	CARCINOGENICITY	TERATO-GENICITY	OTHER SIGNIFICANT TOXICITY	EXPOSURE STANDARD FOLLOWED BY UNION CARBIDE (SOURCE)
3,3'-Dichloro-benzidine (and salts) (91-94-1)	Animal Carcinogen	N.D.		OSHA Standard (R)
Dichlorofluoro-methane (Fluorocarbon 21) (75-43-4)	** (R)	** (R)		10 ppm TWA$_8$ (ACGIH)
Diethyl sulfate (64-67-5)	Animal Carcinogen	N.D.		1 ppm No skin or oral contact (UCC)
Diisopropyl sulfate (2973-10-6)	Suspect Human Carcinogen	N.D.		1 ppm No skin or oral contact (UCC)
1,2-Dimethoxy-ethane (110-71-4)	**	Teratogen		10 ppm TWA$_8$ 25 ppm STEL (Skin) (UCC)
Dimethyl-acetamide (127-19-5)	N.D.	Teratogen		10 ppm No skin contact (OSHA)

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UNION CARBIDE INTERNAL EXPOSURE STANDARDS LIST
BASED ON CARCINOGENICITY, TERATOGENICITY OR OTHER SIGNIFICANT TOXICITY

(See Reverse Side for Explanations and Definitions)

SUBSTANCE (CAS No.)	CARCINOGENICITY	TERATO-GENICITY	OTHER SIGNIFICANT TOXICITY	EXPOSURE STANDARD FOLLOWED BY UNION CARBIDE (SOURCE)
Dimethylamine 124-40-3	N.D. (R)	N.D. (R)		10 ppm TWA_8 (ACGIH) (R)
4-Dimethylamino-azobenzene (60-11-7)	Animal Carcinogen	Teratogen		OSHA Standard (R)
Dimethyl formamide (68-12-2)	**	Teratogen		10 ppm No skin contact (OSHA)
Dimethyl sulfate (77-78-1)	Animal Carcinogen	N.D.		0.1 ppm No skin or oral contact (ACGIH, UCC)
Dimethyl sulfoxide (67-68-5)	N.D.	Teratogen		10 ppm (Skin) (UCC)
1,4-Dioxane (123-91-1)	Animal Carcinogen	**		25 ppm TWA_8 100 ppm STEL (Skin) (ACGIH)

UNION CARBIDE INTERNAL EXPOSURE STANDARDS LIST
BASED ON CARCINOGENICITY, TERATOGENICITY OR OTHER SIGNIFICANT TOXICITY

(See Reverse Side for Explanations and Definitions)

SUBSTANCE (CAS No.)	CARCINOGENICITY	TERATO-GENICITY	OTHER SIGNIFICANT TOXICITY	EXPOSURE STANDARD FOLLOWED BY UNION CARBIDE (SOURCE)
n-Dodecyl mercaptan (112-55-0)	**	**		0.5 ppm (UCC)
t-Dodecyl mercaptan (25103-58-6)	**	**		0.5 ppm (UCC)
Dripolenes-A,B,C	Animal Carcinogen (D)	N.D.		600 $\mu g/m^3$ No skin contact (UCC)
Epichlorohydrin (106-89-8)	Animal Carcinogen	N.D.		0.5 ppm (UCC)
Epoxy resin ERL-2774 (25068-38-6)	Animal Carcinogen	N.D.		10 ppm No skin or oral contact (UCC)
Epoxy resin ERL-4205 (2386-90-5)	Animal Carcinogen	N.D.		10 ppm No skin or oral contact (UCC)

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UNION CARBIDE INTERNAL EXPOSURE STANDARDS LIST
BASED ON CARCINOGENICITY, TERATOGENICITY OR OTHER SIGNIFICANT TOXICITY

(See Reverse Side for Explanations and Definitions)

SUBSTANCE (CAS No.)	CARCINOGENICITY	TERATO-GENICITY	OTHER SIGNIFICANT TOXICITY	EXPOSURE STANDARD FOLLOWED BY UNION CARBIDE (SOURCE)
Epoxy resin ERL-4206 (106-87-6)	Animal Carcinogen	N.D.		10 ppm No skin or oral contact (UCC)
Epoxy resin ERL-4234 (26616-47-7)	Animal Carcinogen	N.D.		10 ppm No skin or oral contact (UCC)
2-ethoxyethanol CELLOSOLVE® Solvent 110-80-5	N.D.	Teratogen		For women of childbearing potential: 10 ppm TWA$_8$ 25 ppm, 15 min. STEL (skin) For other persons: 35 ppm TWA$_8$ (skin) (UCC) (R)

UNION CARBIDE INTERNAL EXPOSURE STANDARDS LIST
BASED ON CARCINOGENICITY, TERATOGENICITY OR OTHER SIGNIFICANT TOXICITY

(See Reverse Side for Explanations and Definitions)

SUBSTANCE (CAS No.)	CARCINOGENICITY	TERATO-GENICITY	OTHER SIGNIFICANT TOXICITY	EXPOSURE STANDARD FOLLOWED BY UNION CARBIDE (SOURCE)
2-ethoxyethyl acetate CELLOSOLVE^{R} Acetate 111-15-9	N.D.	Teratogen		For women of childbearing potential: 10 ppm TWA_8 25 ppm, 15 min. STEL (skin) For other persons: 35 ppm TWA_8 (skin) (UCC)
Ethylene dibromide (106-93-4)	Animal Carcinogen	**		0.1 ppm (UCC)
Ethylene dichloride (107-06-2)	Animal Carcinogen	(-)		5 ppm (UCC)
Ethyleneimine (151-56-4)	Animal Carcinogen	**	Embryotoxic	OSHA Standard
Ethylene oxide (75-21-8)	Suspect Human Carcinogen	(-)		1 ppm TWA_8 Refer to OSHA Standards for other details (R)

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UNION CARBIDE INTERNAL EXPOSURE STANDARDS LIST
BASED ON CARCINOGENICITY, TERATOGENICITY OR OTHER SIGNIFICANT TOXICITY

(See Reverse Side for Explanations and Definitions)

SUBSTANCE (CAS No.)	CARCINOGENICITY	TERATO-GENICITY	OTHER SIGNIFICANT TOXICITY	EXPOSURE STANDARD FOLLOWED BY UNION CARBIDE (SOURCE)
Ethylene thiourea (96-45-7)	Animal Carcinogen	Teratogen		As Low As Practical (UCC)
2-Ethylhexyl acrylate (103-11-7)	Animal Carcinogen (E)	N.D.		5 ppm (UCC)
Formaldehyde (50-00-0)	Animal Carcinogen	N.D.		2 ppm (UCC, see also OSHA)
Formamide (75-12-7)	N.D.	Teratogen		20 ppm No skin contact (ACGIH, UCC)
Fuel oil residues	Animal Carcinogen (D)	N.D.		As Low As Practical (UCC)
Hexafluoro-acetone (684-16-2)	N.D.	Teratogen		0.1 ppm No skin contact (ACGIH, UCC)

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UNION CARBIDE INTERNAL EXPOSURE STANDARDS LIST
BASED ON CARCINOGENICITY, TERATOGENICITY OR OTHER SIGNIFICANT TOXICITY

(See Reverse Side for Explanations and Definitions)

SUBSTANCE (CAS No.)	CARCINOGENICITY	TERATO-GENICITY	OTHER SIGNIFICANT TOXICITY	EXPOSURE STANDARD FOLLOWED BY UNION CARBIDE (SOURCE)
Hydrazine (302-01-2)	Animal Carcinogen	(-)		0.1 ppm (Skin) (ACGIH)
Hydrogen Sulfide (7783-06-4)	**	**	Chemical Asphyxiant	10 ppm (ACGIH, UCC)
Itaconic Acid (97-65-4)	**	**		5 mg/m^3 (UCC)
Lead (7439-92-1)	(-)	Teratogen		50 $\mu g/m^3$ 30 $\mu g/m^3$ Action Level (OSHA)
Mercury Alkyl Compounds	** (R)	Teratogens*		0.01 mg/m^3 (as Hg) (ACGIH, UCC)
Mercury, All compounds except Alkyl	** (R)	** (R)		0.05 mg/m^3 (as Hg) (ACGIH)

UNION CARBIDE INTERNAL EXPOSURE STANDARDS LIST
BASED ON CARCINOGENICITY, TERATOGENICITY OR OTHER SIGNIFICANT TOXICITY

(See Reverse Side for Explanations and Definitions)

SUBSTANCE (CAS No.)	CARCINOGENICITY	TERATO-GENICITY	OTHER SIGNIFICANT TOXICITY	EXPOSURE STANDARD FOLLOWED BY UNION CARBIDE (SOURCE)
2-Methoxyethanol Methyl CELLOSOLVE® 109-86-4	N.D. (R)	Teratogen		For women of childbearing potential: 2 ppm TWA$_8$ 5 ppm, 15 min. STEL (skin) For other persons: 10 ppm TWA$_8$ 25 ppm, 15 min. STEL (skin) (UCC) (R)
2-Methoxyethyl acetate Methyl CELLOSOLVE® Acetate 110-49-6	N.D. (R)	Teratogen		For women of childbearing potential: 2 ppm TWA$_8$ 5 ppm, 15 min. STEL (skin) For other persons: 10 ppm TWA$_8$ 25 ppm, 15 min. STEL (skin) (UCC) (R)

UNION CARBIDE INTERNAL EXPOSURE STANDARDS LIST
BASED ON CARCINOGENICITY, TERATOGENICITY OR OTHER SIGNIFICANT TOXICITY

(See Reverse Side for Explanations and Definitions)

SUBSTANCE (CAS No.)	CARCINOGENICITY	TERATO-GENICITY	OTHER SIGNIFICANT TOXICITY	EXPOSURE STANDARD FOLLOWED BY UNION CARBIDE (SOURCE)
Methyl Chloride (74-87-3)	** (R)	** (R)		25 ppm TWA8 50 ppm 15 min STEL (UCC)
Methyl chloro-methyl ether (107-30-2)	Human Carcinogen	N.D.		OSHA Standard
4,4-Methylene-dianiline (101-77-9)	Animal Carcinogen	N.D.		0.1 ppm No skin or oral contact (ACGIH, UCC)
Methylene Chloride (75-09-2)	**	**		50 ppm TWA8 250 ppm 15 min STEL (UCC)
N-Methylpyrro-lidone (872-50-4)	**	**		500 ppm TWA8 (UCC)
1-Naphthylamine (134-32-7)	**	N.D.		OSHA Standard

UNION CARBIDE INTERNAL EXPOSURE STANDARDS LIST
BASED ON CARCINOGENICITY, TERATOGENICITY OR OTHER SIGNIFICANT TOXICITY

(See Reverse Side for Explanations and Definitions)

SUBSTANCE (CAS No.)	CARCINOGENICITY	TERATO-GENICITY	OTHER SIGNIFICANT TOXICITY	EXPOSURE STANDARD FOLLOWED BY UNION CARBIDE (SOURCE)
2-Naphthylamine (91-59-8)	Human Carcinogen	N.D.		OSHA Standard
Neopentyl glycol diacrylate (2223-82-7)	Animal Carcinogen	N.D.		No skin or oral contact (UCC)
Nickel, Inorganic Compounds	Animal Carcinogen	** (R)		1 mg/m^3 (OSHA)
Nitric Oxide (10102-43-9)	**	**	Chemical Asphyxiant	25 ppm (OSHA)
Nitrobenzene (98-95-3)	**	N.D.	Chemical Asphyxiant	1 ppm (Skin) (OSHA)
4-Nitrodiphenyl (92-93-3)	Human Carcinogen	N.D.		OSHA Standard (R)
2-Nitropropane (79-46-9)	Animal Carcinogen	**		25 ppm* (OSHA)

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UNION CARBIDE INTERNAL EXPOSURE STANDARDS LIST
BASED ON CARCINOGENICITY, TERATOGENICITY OR OTHER SIGNIFICANT TOXICITY

(See Reverse Side for Explanations and Definitions)

SUBSTANCE (CAS No.)	CARCINOGENICITY	TERATO-GENICITY	OTHER SIGNIFICANT TOXICITY	EXPOSURE STANDARD FOLLOWED BY UNION CARBIDE (SOURCE)
N-Nitrosoamine compounds	Animal Carcinogen*	N.D. (R)		No skin or oral contact (UCC)
N-Nitroso-dimethylamine (62-75-9)	Animal Carcinogen	(-)	Embryotoxic	OSHA Standard
N-Nitroso-N-Phenylhydroxyl-amine (148-97-0)	Animal Carcinogen	N.D.		*
Ozone (10028-15-6)	** (R)	**	Embryotoxic	0.1 ppm TWA$_8$ 0.3 ppm STEL (ACGIH)
Peracetic Acid 79-21-0	** (R)	** (R)		10 ppm TWA$_8$ (skin) (UCC) (R)
Perchloro-ethylene (127-18-4)	**	(-)		50 ppm (ACGIH)

UNION CARBIDE INTERNAL EXPOSURE STANDARDS LIST
BASED ON CARCINOGENICITY, TERATOGENICITY OR OTHER SIGNIFICANT TOXICITY

(See Reverse Side for Explanations and Definitions)

SUBSTANCE (CAS No.)	CARCINOGENICITY	TERATO-GENICITY	OTHER SIGNIFICANT TOXICITY	EXPOSURE STANDARD FOLLOWED BY UNION CARBIDE (SOURCE)
Polychlorinated biphenyls(PCB's)	Animal Carcinogen	**	Embryotoxic	1 $\mu g/m^3$ * 3 $\mu g/m^3$ C No skin contact (UCC)
β-Propiolactone (57-57-8)	Animal Carcinogen	N.D.		OSHA Standard
Propylene oxide (75-56-9)	Animal Carcinogen	N.D.		20 ppm 100 ppm STEL (UCC)
Pyrolysis fuel oil	Animal Carcinogen (D)	N.D.		200 $\mu g/m^3$ * 600 $\mu g/m^3$ C No skin contact (UCC)
Quench oil	Animal Carcinogen (D)	N.D.		200 $\mu g/m^3$ * 600 $\mu g/m^3$ C No skin contact (UCC)

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UNION CARBIDE INTERNAL EXPOSURE STANDARDS LIST
BASED ON CARCINOGENICITY, TERATOGENICITY OR OTHER SIGNIFICANT TOXICITY

(See Reverse Side for Explanations and Definitions)

SUBSTANCE (CAS No.)	CARCINOGENICITY	TERATO-GENICITY	OTHER SIGNIFICANT TOXICITY	EXPOSURE STANDARD FOLLOWED BY UNION CARBIDE (SOURCE)
Radiation	Human Carcinogen	Known human teratogen		0.5 REMS During Pregnancy 5 REMS-Equiv./yr. (NCRP Report 39, 1971)
Resin B condensates	Animal Carcinogen	N.D.		200 $\mu g/m^3$ * 600 $\mu g/m^3$ C No skin contact (UCC)
Styrene Oxide 96-09-3	**	**		10 ppm TWA8 (skin) (UCC) (R)
Sulfur Dioxide (7446-09-5)	** (R)	N.D. (R)		2 ppm TWA8 5 ppm STEL (ACGIH)
2,3,7,8-Tetra-chlorodibenzo-p-Dioxin (TCDD) (1746-01-6)	Animal Carcinogen	Teratogen		No exposure* (UCC)
Tetramethyl ammonium hydroxide pentahydrate (10424-65-4)	N.D. (R)	N.D. (R)		As Low as Feasible (Skin) (UCC)

A22076

UNION CARBIDE INTERNAL EXPOSURE STANDARDS LIST
BASED ON CARCINOGENICITY, TERATOGENICITY OR OTHER SIGNIFICANT TOXICITY

(See Reverse Side for Explanations and Definitions)

SUBSTANCE (CAS No.)	CARCINOGENICITY	TERATO-GENICITY	OTHER SIGNIFICANT TOXICITY	EXPOSURE STANDARD FOLLOWED BY UNION CARBIDE (SOURCE)
Tetramethylthiourea (2782-91-4)	N.D. (R)	** (R)	Embryotoxic	No exposure* (UCC)
Tetramethylurea (632-22-4)	N.D.	Teratogen		No exposure* (UCC)
Tetrapropyl ammonium hydroxide (4499-86-9)	N.D. (R)	N.D. (R)		As Low as Feasible (Skin) (UCC)
Thionyl chloride (7719-09-7)	**	**		1 ppm or As Low As Feasible (UCC)
Toluene-2,4-diamine (95-80-7)	Animal Carcinogen	N.D.		0.1 ppm* No skin or oral contact (UCC)
Trichloro-ethylene (79-01-6)	**	(-)		50 ppm (ACGIH)

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UNION CARBIDE INTERNAL EXPOSURE STANDARDS LIST
BASED ON CARCINOGENICITY, TERATOGENICITY OR OTHER SIGNIFICANT TOXICITY

(See Reverse Side for Explanations and Definitions)

SUBSTANCE (CAS No.)	CARCINOGENICITY	TERATO-GENICITY	OTHER SIGNIFICANT TOXICITY	EXPOSURE STANDARD FOLLOWED BY UNION CARBIDE (SOURCE)
Trimethoxy Silane 2487-90-3	N.D. (R)	N.D. (R)		0.5 ppm TWA_8 5 ppm, 15 min. STEL (UCC) (R)
Vinyl Chloride (75-01-4)	Human Carcinogen	**		1 ppm TWA_8 5 ppm averaged over 15 min. period (OSHA) (R)

FOOTNOTES

(B) Teratogenic only in the presence of maternal toxicity.

(D) Standard based on suspected presence of Polycyclic Aromatic Hydrocarbons.

(E) Based on chronic skin painting study: To be reviewed on completion of Inter-Industry Acrylate Committee Chronic Toxicity Study.

(F) Values as "Respirable Fraction", measured as Cadmium.

(R) Revision to previous list.

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- o EXPOSURE STANDARDS - U.S. AND PUERTO RICO
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- o MEDICAL SPECIAL EXAMINATIONS GUIDELINE
- o MODEL PROGRAM GUIDELINE
- o NURSING GUIDELINE
- o ORGANIZATION/DUTIES - CORPORATE HEALTH, SAFETY AND ENVIRONMENTAL AFFAIRS DEPARTMENT
- o ORGANIZATION/DUTIES - GENERAL OCCUPATIONAL HEALTH COMMITTEE

CORPORATE POLICY

SUBJECT	DATE	NUMBER	PAGE
OCCUPATIONAL HEALTH	3/31/78	3.5.6	1

APPLIES TO ☒ UNITED STATES ☒ INTERNATIONAL

PURPOSE/BACKGROUND

The Corporate Charter contains the following Employee Commitment:

> "To provide safe working conditions, programs of training and education, and persistent review and improvement of facilities and practices to protect the health and safety of all employees."

The occupational health area is receiving ever increasing attention as our knowledge level increases concerning chronic health effects. Federal and State governments and the public also are giving increasing attention to this area.

To fulfill its Employee Commitment the Corporation must take positive anticipative steps to reduce or eliminate occupational health hazards and to accommodate governmental regulations and concerns of the public.

POLICY

Union Carbide will:

1. Identify occupational health risks.

2. Implement programs to protect against identified occupational health risks as an integral part of component Long Range Plans and Annual Business Budgets.

3. Control exposures to all occupational health risks to comply with governmental or UCC mandated levels; in the event that attainment of lower levels is feasible for carcinogens and other risks having known irreversible chronic health effects, further reduce exposures to these lower levels.

4. Advise employees of identified occupational health risks and protective programs.

5. Advise customers, appropriate government agencies, and the public regarding significant new occupational health information discovered by Union Carbide.

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CORPORATE POLICY

SUBJECT	DATE	NUMBER	PAGE
OCCUPATIONAL HEALTH	3/31/78	3.5.6	2
	APPLIES TO ☒ UNITED STATES ☐ INTERNATIONAL		

POLICY (Cont.)

6. Establish positions on occupational health issues significant to Union Carbide and make public as appropriate.

7. Design new facilities to control exposures to comply with mandated levels, existing or forecasted, and address the feasibility of achieving the lowest levels of exposure to all health risks.

SCOPE

This policy applies to all parts of UCC and to all affiliates worldwide in which UCC has a greater than 50 per cent equity interest, and is recommended for application in affiliates of 50 per cent or less equity interest.

DELEGATION

- United States operating components have a line accountability to:

  1. Identify occupational health risks.

  2. Implement programs to protect against identified occupational health risks as an integral part of component Long Range Plans and Annual Business Budgets.

  3. Control exposures to all occupational health risks to comply with governmental or UCC mandated levels; in the event that attainment of lower levels is feasible for carcinogens and other risks having known irreversible chronic health effects, further reduce exposures to these lower levels.

  4. Advise employees of identified health risks and protective programs.

  5. Advise customers regarding significant new occupational health information discovered by Union Carbide.

  6. Design new facilities to control exposures and to comply with mandated levels existing or forecasted, and address the feasibility of achieving the lowest levels of exposure to all health risks.

  Subject to procedures, policies, and objectives issued by the Health, Safety and Environmental Affairs Department.

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CORPORATE POLICY

SUBJECT	DATE	NUMBER	PAGE
OCCUPATIONAL HEALTH	3/31/78	3.5.6	3
	APPLIES TO ☒ UNITED STATES ☒ INTERNATIONAL		

DELEGATION (Cont.)

- In the United States, the Health, Safety and Environmental Affairs Department has the end-result accountability to:

  1. Advise appropriate government agencies and the public regarding significant new occupational health information discovered by Union Carbide.

  2. Recommend the positions that the Corporation will establish on occupational health issues significant to Union Carbide and make public as appropriate.

  subject to approval from a public and governmental relations standpoint by the External Relations Department.

- Area companies and international affiliates have the end-result accountability for all parts of this policy in their area of jurisdiction and for the development of implementing procedures, policies, and objectives to achieve the objective of this policy. These procedures, policies, and objectives are to be approved by the UCC Health, Safety, and Environmental Affairs Department.

- The UCC Health, Safety, and Environmental Affairs Department has the authority to:

  - Approve all major Capital Budget Proposals for compliance with Occupational Health procedures, policies and objectives.

  - Audit the activities in UCC and its affiliates for compliance with this policy.

PRACTICE

Area companies and international affiliates will adapt the implementing procedures developed by the UCC Health, Safety, and Environmental Affairs Department to the extent necessary to conform to the legal, political, and social constraints on the affiliates.

REFERENCES

1.1 Corporate Charter - Health, Safety, and Environmental Affairs Manual

Advice and Service: Corporate Director of Occupational Health
270 Park Avenue, New York, N.Y. 10017

Authorized by the Operations Committee on March 20, 1978

- END -

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UNION CARBIDE **CORPORATE POLICY**

SUBJECT	DATE	NUMBER	PAGE
OCCUPATIONAL MEDICINE	3/1/83	2.36	1
	APPLIES TO ☒ UNITED STATES ☒ INTERNATIONAL		

PURPOSE/BACKGROUND

The Corporate Charter contains the following Employee Commitment:

> To provide working conditions, programs of training and education, and persistent review and appropriate modification of facilities and practices to protect the health and safety of all employees.

To satisfy this Employee Commitment requires establishing minimum standards for occupational medical practices and services in Union Carbide.

External conditions and events are becoming more significant to the occupational medicine function:

- There are ever increasing governmental requirements for medical surveillance examinations; progressively more stringent exposure standards being developed and enforced by governments and industry based on new toxicological data; and an increasing governmental involvement in toxicology which is reflected in such activities as federal and international standardization of testing procedures.

- Industry in general is expanding health care services in an effort to contain health care delivery costs and keep employees productive; and employees and unions, particularly at the state and national level, are taking a greater interest in occupational health matters.

- There is increased litigation with respect to product liability and the health of employees; the use of toxicological and epidemiological studies to determine occupational health risks and provide safe products and healthy working conditions is increasing, and the results of such studies are receiving greater publicity and causing increased public concern.

- The confidentiality of medical information is increasingly being demanded by the public yet there are pressures from many areas to release medical records to government agencies, to employees and designated third parties thereby making accurate and objective documentation essential.

These considerations necessitate a clearly defined corporate policy statement together with a system of managerial control of occupational medical activities to assure that Corporate objectives and commitments are achieved. This Policy is a formalization and expansion of existing Corporate occupational medicine practices.

UNION CARBIDE **CORPORATE POLICY**

SUBJECT	DATE	NUMBER	PAGE
OCCUPATIONAL MEDICINE	3/1/83	2.36	2

APPLIES TO ☒ UNITED STATES ☒ INTERNATIONAL

POLICY

Union Carbide will:

1. Comply with all applicable governmental laws and regulations relating to occupational medicine.

2. Provide medical and health services that conform to good professional practices and are cost effective.

3. Encourage employee health promotion and the medical aspects of employee assistance programs as well as efforts to reduce disability time resulting from accidents or illness.

4. Participate in appropriate industry sponsored toxicological and epidemiological studies as needed to reach decisions regarding product safety and health in the work place.

5. Respond to responsible public inquiries regarding the health effects of our products.

6. Establish and make known responsible positions on occupational medicine, toxicology, and epidemiology issues significant to Union Carbide.

7. Speak with one consistent voice within each country in contacts with governments and publics on occupational medicine, toxicology, and epidemiology issues.

SCOPE

This policy applies to UCC and to all affiliates worldwide in which UCC has a greater than 50 percent equity interest and is recommended for application in affiliates in which UCC has a 50 percent or less equity interest.

DELEGATION

The assignment of duties and delegation of roles and authorities to carry out the objectives enumerated under Item 1 of the POLICY above are set forth in Corporate Policy 3.5.1., "Health, Safety, and Environmental Laws and Regulations - Compliance and Enforcement" and Corporate Policy 1.5.6., "International Affiliates - Corporate Policy and Procedures Application". The assignment of duties and delegation of roles and authorities to carry out all other provisions of the policy defined herein will be as follows:

- To Components:

  - The line duty and end-result accountability for deciding which non-governmentally mandated medical services (including toxicological and epidemiological studies) are provided and additionally, providing both mandated and elected medical services to employees, except at the UCC headquarters location, Tarrytown and consolidated office buildings (where such services shall be determined by the CEO, Tarrytown site manager and consolidated office building management respectively), in accordance with policies, procedures and objectives issued by the UCC Health, Safety and Environmental Affairs Department.

  - The line duty and end-result accountability for the development and administration of an internal control system to implement the policies enumerated above.

- To the UCC Health, Safety and Environmental Affairs Department

  (1) Line roles in the United States and Puerto Rico to:

  - Provide medical facilities and services for medical and health programs for personnel at the UCC headquarters location.

  - Provide a medical emergency response center.

  - Inform accountable component and corporate department management of their duties and accountabilities under this Policy.

  - Do or have done epidemiological studies and conduct epidemiology surveillance programs which are governmentally mandated or authorized by a component.

  - Render formal medical opinions which could affect other policy areas (e.g., employee relations) or which could affect Union Carbide in external relations including litigation.

  - Establish corporate public policy positions on occupational medicine issues significant to Union Carbide, subject to authorization by the CEO/COO.

(2) Coordinating roles with the duty and authority to develop and issue, after an opportunity to comment has been provided to components, policies, procedures, or objectives, to implement this POLICY as specified below:

- For medical examinations, including surveillance examinations, periodic examinations, preemployment examinations, and examinations to determine medical fitness for jobs.

- For the treatment of, and rehabilitation as a result of, occupational illnesses or injuries including the requirements for medical facilities and staffing, the use of medical facilities and staff in the treatment of non-occupational illnesses or injuries, and the approval of personnel protection equipment.

- For the representation of Union Carbide in trade and professional associations (other than groups primarily composed of attorneys) on matters relating to occupational medicine, toxicology and epidemiology.

- For the preparation, retention, and release of medical records and medical information.

- For publication of medical/toxicological/health effects/ epidemiology data in employee communications, product safety information, and any other means of communications to groups or individuals outside of Union Carbide, including the authority to approve the publication in advance of releases regarding medical/toxicological/health effects data.

- For health promotion programs and medical aspects of employee assistance programs.

- For selection and career development plans of medical personnel in components.

- For interpretation of toxicological data and statements of health effects of materials and products.

- For toxicological testing procedures and laboratories.

(3) The duty and authority to conduct periodic audits in the United States and Puerto Rico relating to occupational medicine for:

- Adequacy of internal control system.
- Compliance with Corporate policies, procedures and objectives.
- Operating practices which raise questions of noncompliance with applicable laws, which questions will be referred to the Law Department.

(4) Coordinating role applicable to area companies and international affiliates, with the duty and authority to issue policies which define the requirements for a management system to achieve the objectives enumerated under POLICY above, including the authority to approve the system for adequacy.

(5) Service roles to components relating to medical and health services on request.

o To the UCC Law Department:

(1) Line roles in the United States and Puerto Rico to:

- Provide legal advice and service with respect to Union Carbide's occupational medicine duties and liabilities under the law, including legal advice and service to components and departments to (a) identify and resolve questions of legal compliance and (b) develop and implement legal compliance programs.
- Represent the Corporation in the handling of legal claims, and litigation seeking recovery for personal injury or property damage allegedly resulting from occupational medicine issues.
- Represent the Corporation on occupational medicine issues in dealing with groups primarily composed of attorneys.

(2) A coordinating role outside of the United States and Puerto Rico with the duty and authority to issue policies, procedures, and objectives for the provision of legal services to international affiliates with respect to occupational medicine.

UNION CARBIDE

CORPORATE POLICY

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REFERENCES

Corporate Policy Manual: Policies 1.5.6, "International Affiliates - Corporate Policy and Procedures Application"; 3.5.1, "Health, Safety, and Environmental Laws and Regulations - Compliance and Enforcement"; 3.5.4, "Product Safety"; 3.5.6 "Occupational Health".

Corporate Environmental Affairs Manual

Medical Policies, Procedures and Guidelines Manual

Occupational Health Manual

Advice and Service:

Director, UCC Corporate Medical Department
Old Ridgebury Rd., Section P2594
Danbury, CT 06817

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-END-

UNION CARBIDE **CORPORATE POLICY**

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	APPLIES TO ☒ UNITED STATES ☒ INTERNATIONAL		

PURPOSE/BACKGROUND

The Corporate Charter contains a social commitment "To fulfill the corporate obligations of good citizenship worldwide...through... ethical business conduct in accordance with all applicable national and local laws and regulations..."

As a result of increasing public and governmental concern for health, safety, and the environment, compliance with laws and regulations relating to health, safety, and the environment and relations with government agencies involved with these matters have become critical management issues.

It is the purpose of this policy to define a Union Carbide management system to facilitate compliance with governmental laws and regulations relating to health, safety, and the environment and to respond to enforcement proceedings relating to health, safety, and environmental laws and regulations.

POLICY

Union Carbide will:

- Comply with all applicable governmental laws and regulations relating to health, safety, and the environment.
- Minimize the exposure to criminal and civil liabilities resulting from violations of safety, health, and environmental laws and regulations.
- Speak with one consistent voice in contacts with governments on health, safety, and environmental matters, subject to regulations and directives issued by the Department of Energy governing the Nuclear Division.

In order to achieve the corporate policy objectives defined above, the Corporation will have a comprehensive control system for compliance with governmental laws and regulations and for responding to enforcement procedings which encompass policies, procedures, objectives, and audits at both the corporate level and within the components and corporate departments and which satisfy all legal requirements and generally accepted standards of management control. The corporate management control system will specifically provide that:

UNION CARBIDE **CORPORATE POLICY**

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- Duties will be assigned or coordinated at the UCC corporate level as needed.

- Adequate checks and balances will be provided through delegation of appropriate authorities for authorization, approval, and review.

- Standards for compliance with governmental laws and regulations and reporting to government agencies will be consistent across UCC, subject to regulations and directives issued by the Department of Energy governing the Nuclear Division.

PRACTICE

All line duties and roles not specifically delegated to a corporate department are retained by components and other corporate departments in their assigned businesses or functions.

DELEGATION

The assignment of duties and delegation of roles and authority to carry out the policy defined herin will be as follows:

- To United States and Puerto Rican components and UCC corporate departments which administer activities governed by health, safety, and environmental laws and regulations:

  - Development and administration of an internal control system to achieve the objectives enumerated under policy above.

  - A line role to notify the UCC Health, Safety, and Environmental Affairs Department of new and revised local governmental laws and regulations and administrative agency policy statements and guidelines with respect to health, safety, and the environment at locations in which the component and corporate department operate.

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UNION CARBIDE **CORPORATE POLICY**

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	APPLIES TO ☒ UNITED STATES ☒ INTERNATIONAL		

- o A coordinating role for United States components with the duty and authority to issue technical (i.e., process, mechanical, and layout design criteria and process and equipment operating instructions unique to a process or product line) policies, procedures, and objectives for corresponding product line operations in area companies and international affiliates, to conform to host country health, safety and environmental laws and regulations.

- o To area companies and international affiliates:

  - Development and administration of a management system, including policies, procedures, objectives, and audits, for compliance with, and responses to enforcement actions relating to, governmental health, safety, and environmental laws and regulations, patterned after the UCC system but modified or expanded, as necessary, to accommodate the scope and kind of activities carried out in the area company or affiliate, and adapted, as necessary, to conform to the legal, political and social constraints on the affiliate.

- o To the UCC Health, Safety, and Environmental Affairs Department:

  (1) Line roles in the United States and Puerto Rico to:

  - Submit reports required by health, safety, and environmental laws and regulations as specified in a policy issued by the UCC Health, Safety, and Environmental Affairs Department excluding those regulations issued by the Department of Defense, Department of Energy or Nuclear Regulatory Commission governing the Nuclear Division.

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- Notify accountable component and corporate department management of new and revised federal government laws and regulations and administrative agency policy statements and guidelines with respect to health, safety, and the environment, excluding matters relating specifically to the transportation of hazardous materials and excluding those regulations issued by the Department of Defense, Department of Energy or Nuclear Regulatory Commission governing the Nuclear Division.

- Inform component and corporate department management of their duties and accountabilities under federal, state, and local health, safety, and environmental laws and regulations, including development and communication of consistent standards for compliance, excluding matters relating specifically to transportation of hazardous materials and excluding those regulations issued by the Department of Defense, Department of Energy or Nuclear Regulatory Commission governing the Nuclear Division.

(2) Coordinating roles in the United States and Puerto Rico with the duty and authority to issue policies, procedures, or objectives as specified below:

- Policies, procedures, and objectives to facilitate compliance with governmental health, safety, and environmental laws and regulations, excluding matters relating specifically to transportation of hazardous materials, and excluding those regulations issued by the Department of Defense, Department of Energy or Nuclear Regulatory Commission governing the Nuclear Division, and including the authority to approve compliance plans, permit applications and capital projects before the fact.

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- Policies, procedures, and objectives for responses to governmental enforcement actions involving health, safety, and environmental matters, excluding actions specific to transportation of hazardous materials, and excluding those regulations issued by the Department of Defense, Department of Energy or Nuclear Regulatory Commission governing the Nuclear Division, and including the authority to approve responses before the fact.

- Policies for internal control systems of components and corporate departments relating to compliance with health, safety, and environmental laws and regulations and to responses to enforcement actions, excluding laws and regulations specific to transportation of hazardous materials, and excluding those regulations issued by the Department of Defense, Department of Energy or Nuclear Regulatory Commission governing the Nuclear Division, and including the authority to approve the adequacy of the internal control system.

- Procedures for reporting of health, safety, and environmental information relative to compliance and enforcement to corporate management.

- Policies for informing component and corporate department employees of their duties and accountabilities under federal, state, and local health, safety, and environmental laws and regulations.

- Policies and procedures governing protocols for obtaining health, safety, and environmental data.

- Policies for data to be recorded and retained, and for dissemination and release of health, safety, and environmental information relating to Union Carbide's people, products, facilities, operations, and waste disposal.

A2210C

- Policies for developing the information needed to determine the hazards of corporate products relating to health, safety, and the environment.

- Policies for communicating product safety information on corporate products that will provide for compliance with all laws and regulations pertaining to health, safety, and the environment.

- Procedures for supplying information on status of permit activities relative to health, safety, and environmental laws and regulations.

- Policies and procedures for recalling Union Carbide products because of information indicating an existing or suspected health, safety, or environmental hazard.

(3) Coordinating role applicable to area companies and international affiliates, with the duty and authority to issue policies which define the requirements for a management system to facilitate compliance with, and responses to enforcement actions relating to governmental health, safety, and environmental laws and regulations, including the authority to approve the system for adequacy.

(4) The duty and authority to conduct periodic audits of components and UCC corporate departments in the United States and Puerto Rico relating to health, safety, and the environment for:

- Adequacy of internal control or management system

- Compliance with government laws and regulations

- Compliance with corporate policies, procedures, and objectives

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except those governmental laws and regulations and corporate policies, procedures, and objectives which are specific to the transportation of hazardous materials.

(5) The duty and authority to conduct periodic audits of area companies and international affiliates relative to health, safety and the environment for adequacy of their management system.

o To the UCC Corporate Distribution Department in the United States and Puerto Rico, with respect to matters which are specific to the transportation of hazardous materials, but excluding the transportation of radioactive materials by the Nuclear Division.

(1) Line roles to:

- Submit reports as required by federal, state, and local health, safety, and environmental law and regulations for transportation operations which are the line accountability of the UCC Corporate Distribution Department.

- Notify accountable component and corporate department management of new and revised federal, state, and local laws and regulations and administrative agency policy statements and guidelines with respect to health, safety, and the environment.

- Inform component and corporate department management of their duties and accountabilities under federal, state, and local health, safety, and environmental laws and regulations.

- Obtain necessary permits, including modifications and variances, required by federal, state, and local health, safety, and environmental laws and regulations and negotiate their terms with administrative agencies.

(2) Coordinating roles, with the duty and authority to issue policies, procedures, or objectives as specified below:

- Policies, procedures, and objectives to facilitate compliance with federal, state, and local health, safety, and environmental laws and regulations, including the authority to approve compliance plans before the fact.

- Policies, procedures, an objectives for responses to governmental enforcement actions involving health, safety, and environmental matters, including the authority to approve responses before the fact.

(3) The duty and authority to conduct periodic audits of components and UCC corporate departments in the United States and Puerto Rico relating to health, safety, and the environment for compliance with:

- Governmental laws and regulations and

- Corporate policies, procedures, and objectives.

o To the UCC Law Department:

(1) Line roles in the United States and Puerto Rico:

- Provide legal advice and service with respect to interpretation of, current developments regarding, compliance with, and enforcement of federal, state, and local laws and regulations relating to health, safety, and the environment.

- Represent the Corporation in the handling of legal claims, notices of violation, litigation and administrative proceedings, including the litigation of permits, involving federal, state, and local laws and regulations relating to health, safety, and the environment.

UNION CARBIDE **CORPORATE POLICY**

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	APPLIES TO ☒ UNITED STATES ☒ INTERNATIONAL		

(2) A coordinating role in the United States and Puerto Rico with the duty and authority to issue policies, procedures, objectives, from the standpoint of legal considerations, to facilitate compliance with federal, state, and local laws and regulations, including the authority to approve before the fact those items specified in a policy issued by the UCC Law Department.

(3) A coordinating role outside of the United States and Puerto Rico with the duty and authority to issue policies, procedures, and objectives for the provision of legal services to management of affiliates with respect to government laws and regulations relating to health, safety and the environment.

- To the UCC Public Affairs Department in the United State and Puerto Rico, a line role to notify accountable component and corporate department management of new and revised state and Puerto Rican laws and regulations realting to health, safety, and the environment.

SCOPE

This policy applies to all parts of UCC and to all affiliates worldwide in which UCC has a greater than 50 percent equity interest and is recommended for application in affiliates of 50 percent or less equity interest.

Specific scopes are defined under DELEGATION.

DEFINITIONS

Components - Divisions and Area Companies, including affiliates managed by Divisions and Area Companies.

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UNION CARBIDE **CORPORATE POLICY**

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REFERENCES

Corporate Policy Manual, "Personnel Safety and Accidental Loss Prevention Control" 3.5.5, "Occupational Health" 3.5.6, "Product Safety (to be issued)", "Environmental Affairs (to be issued)", "Distribution (to be issued)".

Health, Safety, and Environmental Affairs Policy and Procedures Manuals.

Corporate Distribution Policy and Procedures Manual

Advice and Service

Manager, Administration and Planning
Health, Safety and Environmental Affairs Department
270 Park Avenue, New York, N.Y. 10017

APPROVED BY THE MANAGEMENT COMMITTEE ON JANUARY 26, 1981

-END-

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OCCUPATIONAL DISPENSARY VISITS

Visits for diagnosis, treatment or advice on injuries or illnesses alleged or accepted to be compensable under Workers Compensation laws in the state where the Union Carbide Corporation facility is located.

OCCUPATIONAL HEALTH RISK

Any chemical material or physical stress in the workplace that needs to be measured or controlled as required by Union Carbide, or is a risk as mandated by law.

OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)

A Federal Agency in the Department of Labor having the primary responsibility of setting and enforcing standards and in establishing training programs for workers. OSHA must consider economic and technical feasibility in setting standards.

ONCOLOGY

Study of tumors.

PERMANENT THRESHOLD SHIFT (PTS)

The hearing loss suffered as the result of noise exposure which cannot be recovered.

PERMISSIBLE EXPOSURE LIMIT (PEL)

Term used in OSHA health standards. In many OSHA standards, it is the same as TLV.

PHYSICAL HARM

Injury and/or illness as well as adverse mental, neurological, or systemic effects resulting from exposure.

PNEUMOCONIOSIS

A chronic disease of the lungs resulting from the inhalation of various kinds of dusts. The pneumoconioses which include siderosis (iron oxide), silicosis (free silica), asbestosis (asbestos), etc., generally require a period of years for development.

PNEUMONITIS (Chemical)

Inflammation of the lungs resulting from inhalation of chemical vapors and characterized by an outpouring of fluid in the lungs.

POLICY

A continuing directive applying to recurring questions and problems important in setting the limits and direction of managerial action through which objectives of the enterprise are to be reached. The limits of authority within which managers can operate independently.

PRACTICE

Critical practices that should be followed to insure success in results to be achieved.

PRESBYCUSIS

The hearing loss normally occurring due to age because of the degeneration of the nerve cells due to the ordinary wear and tear of the aging process.

PROCEDURE

A standardized method of performing specified work. Procedures implement policies and explain the "how" by which objectives are obtained.

REGULATED AREA

An identified geographic workspace where a regulated chemical or physical stress is present at or above the regulatory levels specified for the workspace. Such areas must be identified by appropriate warning signs and certain information concerning the area, affected personnel, and exposures communicated to OSHA.

REQUESTED MEDICAL EXAMINATION

Such examinations are those which the Company makes available to an employee and relates to identified occupational health risks, or is an examination legally mandated to be made available to employees, under Occupational Safety and Health Administration regulations or otherwise.

RESPIRABLE (dust)

Term used to indicate particulate matter which can be inhaled. Generally considered to be ten microns or less in aerodynamic diameter.

RISK

Hazard; peril; the probability of occurrence of a loss, injury or illness producing event.

RISK MANAGEMENT

The identification, analysis and evaluation of risk, and the selection of the most advantageous method of treating it.

SARCOMA

Cancer in connective tissues, including bones.

SENSORINEURAL (hearing loss)

The type of hearing loss which affects the inner ear.

SOUND PRESSURE LEVEL (SPL)

The level, in decibels, of a sound is 20 times the logarithm to the base 10 of the ratio of the measured pressure of this sound to the reference pressure. The references pressure is 0.0002 dynes/cm^2 or in metric 20 micropascals.

TEMPORARY THRESHOLD SHIFT (TTS)

The hearing loss suffered as the result of noise exposure; all of which is recovered during an arbitrary period of time.

TERATOGEN

An agent or factor that causes the production of physical defects in a developing embryo or fetus.

THRESHOLD LIMIT VALUE (TLV)

The time-weighted average (TWA) concentration for a normal 8-hour workday or 40-hour workweek, to which workers may be repeatedly exposed, day after day throughout their working lifetime without adverse effect on health or comfort. (See American Conference of Governmental Industrial Hygienists).

TLV-C - CEILING EXPOSURE LIMIT

Ceiling concentration never to be exceeded even for an instant.

TLV-STEL - SHORT-TERM EXPOSURE LEVEL

Maximum concentration for 15 minutes, no more than four times a day, at least one hour in between.

TIME-WEIGHTED AVERAGE (TWA)

The average concentration for any given material, weighted over an appropriate period of time (i.e., 15 minutes, 8 hours, etc.). Time-weighted averages permit excursions above the limit (TLV) provided they are compensated by equivalent excursions below the limit during the workday, except where the TLV is specified as a ceiling concentration.

TOXICOLOGY

The study of the nature and action of poisons.

TOXIC SUBSTANCES CONTROL ACT (TSCA OR TOSCA)

Federal legislation, effective January 1, 1977, regulating chemical substances in manufacturing, processing, use and disposal which present "an unreasonable risk of injury to health or the environment". Administered by the Environmental Protection Agency.

TUMORIGEN

An agent that produces or tends to produce tumors.

UNION CARBIDE

UCC and affiliated companies.

UNION CARBIDE CORPORATION (UCC)

The parent company, excluding affiliated companies.

VOLUNTARY MEDICAL EXAMINATION

Such examinations are those made available to employees whether or not holding jobs with identifiable health risks. These examinations are undertaken at employee option.

UNION CARBIDE

CORPORATE POLICY

SUBJECT	DATE	NUMBER	PAGE
INTERNATIONAL AFFILIATES - CORPORATE POLICY AND PROCEDURES APPLICATION	3/1/81	1.5.6	1
	APPLIES TO ☒ UNITED STATES ☒ INTERNATIONAL		

PURPOSE/BACKGROUND

International affiliates are separate legal entities. The UCC-affiliate relationship should preserve the authority and accountability of the Board of Directors of the affiliate for the management of the affiliate, and recognize the legitimate rights and interests of host governments and non-UCC shareholders.

UCC has developed objectives, commitments, and systems of management which are defined and communicated by Corporate policies and procedures, and which are intended to apply, whenever feasible, worldwide.

However, it is recognized that the UCC objectives, commitments and systems of management may not always be applicable worldwide. Objectives, commitments, and systems may have to be modified or expanded, as necessary, to accommodate the scope and kinds of activities carried out in affiliates, and policies and procedures may have to be adapted, as necessary, to conform to the legal, political and social constraints on the affiliate.

POLICY

1. Corporate policies and procedures which are labeled as applicable to the international area are primarily directed to the UCC manager who has a line role to represent UCC's interests on the boards of directors of international affiliates. It is the duty of the UCC manager to encourage the board of directors of an affiliate to adopt the UCC policies and procedures, modified, as necessary, to conform to the scope and kind of activities carried out in the affiliate and to the legal, political, and social constraints on the affiliate, as the policies and procedures of the affiliate.

2. To expedite communication and understanding, UCC policies and procedures are to be sent to international affiliates, as issued, on a restricted basis as follows:

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- Category I Policies - to managing director/president and manager accountable for Category I type policies in affiliate.

- Category II Policies and Procedures - to managing director/president and manager accountable for functional area in affiliate.

3. Each affiliate is to develop its own Category I policies and Category II policies and procedures for general distribution to managers in the affiliate. These policies and procedures will be based on UCC policies and procedures, adapted, as necessary, to conform to the scope and kind of activities carried out in the affiliate and to the legal, political, and social constraints on the affiliate. Any changes from the substance of UCC policies are to be approved by the UCC Corporate Department which issued them.

4. Policies for distribution within an affiliate are to be on the affiliate's masthead. Policies printed on the Union Carbide Corporation masthead are not to be distributed to personnel in international affiliates, except as noted in Item 2 above.

5. Affiliate managements have an advisory role to UCC managers who have an accountability for worldwide policies and procedures, with the duty to communicate to the UCC manager the consequences of a proposed policy or procedure on their operations and to offer advice and recommend changes in the proposed policy or procedure that would make the policy or procedure equally effective but more efficient.

6. Each UCC Category II Policy and Procedure Manual applicable to the international area should contain this Category I Policy statement prominently displayed.

UNION CARBIDE

CORPORATE POLICY

SUBJECT	DATE	NUMBER	PAGE
INTERNATIONAL AFFILIATES - CORPORATE POLICY AND PROCEDURES APPLICATION	3/1/81	1.5.6	3

APPLIES TO

☒ UNITED STATES ☒ INTERNATIONAL

SCOPE

This policy applies to UCC and its affiliates worldwide in which UCC has a greater than 50 percent equity interest and is recommended for application in affiliates worldwide in which UCC has 50 percent or less equity interest.

DEFINITION

Category I policies and Category II policies and procedures are described and defined on Page 1 of the Introduction and Glossary of the Corporate Policy Manual.

APPROVED BY THE MANAGEMENT COMMITTEE ON JANUARY 26, 1981

- END -

A22108

MEMORANDUM

MANAGEMENT OF HEALTH, SAFETY, AND ENVIRONMENTAL AFFAIRS IN INTERNATIONAL AFFILIATES

The assignment of duties and delegation of roles and authority will be as follows:

To UCC Health, Safety, and Environmental Affairs Department

(1) Coordinating role applicable to area companies and international affiliates, with the duty and authority to issue policies which define the requirements for a management system for health, safety, and environmental issues and activities, including the compliance with, and responses to enforcement actions relating to governmental health, safety, and environmental laws and regulations and including the authority to approve the system for adequacy.

(2) Coordinating role to UCC managers with area business accountability for health, safety, and environmental standards (e.g., exposure limits, effluent concentrations) that international affiliates should adopt. These standards would be based on UCC standards, adapted as necessary to conform to the legal, political, and social constraints on the affiliate.

(3) The duty and authority to conduct periodic audits of area companies and international affiliates relative to health, safety, and the environment for adequac of their management system and for compliance with health, safety, and environmental standards which have been established for areas or affiliates.

To U.S. Components

(1) Coordinating role for technical (i.e., process, mechanical, and layout design criteria and process and equipment operating instructions unique to process and product line) policies, procedures, and objectives for corresponding product line operations in international affiliates to meet the health, safety, and environmental standards established for the affiliate.

(2) Technical service role to international affiliates for achievement of health, safety, and environmental standards.

(3) The duty and authority to conduct periodic audits of international affiliates for conformance with technical (as defined above in (1)) policies, procedures, and objectives which have been established to meet health, safety, and environmental standards.

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To Area Companies and International Affiliates

(1) Development and administration of a management system, including policies, procedures, objectives, and audits, for meeting health, safety and environmental standards established for the area company or affiliate and for compliance with, and responses to, enforcement actions relating to governmental health, safety, and environmental laws and regulations, patterned after the UCC system but modified or expanded, as necessary, to accommodate the scope and kind of activities carried out in the area company or affiliate, and adpated, as necessary, to conform to the legal, political, and social constraints on the area company or affiliate.

(2) A coordinating role to define the technical services needed from U.S. componen in order to meet the health, safety, and environmental standards which have been established for areas and affiliates.

(3) A coordinating role to define for the U.S. components the health, safety, and environmental standards which have been established for areas and affiliates and to which the technology and technical service being provided by the U.S. components must conform.

(4) An advisory role to keep U.S. components informed of developments in the area and affiliates which can impact on the technical services provided by U.S. components or on the technical (as defined above) policies, procedures, or objectives established by U.S. components for corresponding product line operations in international affiliates relating to health, safety, and the environment.

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11/11/80

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UNION CARBIDE CORPORATE OCCUPATIONAL HEALTH MANUAL

SUBJECT	SECTION INTRODUCTION/TABLE OF CONTENTS
FUNDAMENTAL PRINCIPLES	DATE 10/2/80 PAGE 1 OF 2
	APPLIES TO ☒ UNITED STATES ☒ INTERNATIONA

An effective Corporate occupational health program will be maintained. This program is basic to the individual programs designated to meet the specific requirements of the Components. Qualified personnel and facilities will be provided by the Components in keeping with the size and nature of each operation. The following are the foundation of Union Carbide's occupational health programs and apply to every size and type of location.

People are our most important asset - their safety and health our responsibility.

Occupational and many non-occupational injuries and illnesses are preventable.

It is a primary responsibility of line management to define, initiate and maintain actions to prevent occupational injuries and illnesses.

Practices to protect worker health are good business. They are necessary considerations for a productive work force and for the operation of any facility. They must have equal importance with production efficiency, quality, cost control, safety and accident prevention. They must be planned, structured and implemented as a positive force for good employee relations.

Continuing education and training of all employees in occupational health are essential.

SUBJECT	SECTION	INTRODUCTION/TABLE OF CONTEN
FUNDAMENTAL PRINCIPLES	DATE 10/2/80	PAGE 2 OF 2
	APPLIES TO ☒ UNITED STATES ☒ INTERNATIONA	

It is a Corporate objective to plan, design, construct, operate and maintain facilities that are safe from personal injury and illness exposure. These factors shall be considered in estimates for capital funds and affirmed in each such request.

SUBJECT	SECTION INTRODUCTION/TABLE OF CONTENTS
OBJECTIVES OF THE CORPORATE OCCUPATIONAL HEALTH/MEDICAL/ INDUSTRIAL HYGIENE PROGRAM	DATE 10/2/80 PAGE 1 of 4
	APPLIES TO ☒ UNITED STATES ☒ INTERNATIONAL

GENERAL

The Corporate Occupational Health/Medical/Industrial Hygiene Program provides the expertise and guidance to establish health programs that will meet the Corporate employee and social commitments, assure that component health programs are consistent with the Corporate health policies, establish health standards that will result in safe working conditions and provide management with professional input to manage health, medical and industrial hygiene issues properly.

OBJECTIVES

- Assist employees in maintaining their health by controlling exposure to the stresses and hazards of the work place.
- Evaluate the health status and capabilities of prospective and current employees and advise management on their placement in jobs which they can perform without endangering themselves or others.
- Provide medical care for occupational illnesses or injuries, utilizing consultants as indicated to achieve optimal recovery while conforming to the legal, political and social constraints on the affiliates.

OBJECTIVES (CONTINUED)

- Provide emergency or primary care for non-occupational illnesses and injuries to enable the employee to continue work or, if needed, refer to outside medical professionals.
- Encourage and assist in rehabilitation of employees impaired by accident or disease, and evaluate disability claims under the UCC Pension Plan or Workers Compensation Laws in cooperation with Employee Relations Managers.
- Prepare, procure and present health education programs, provide pertinent health literature, encourage appropriate immunization programs and instigate primary intervention programs such as alcoholism, anti-smoking, hypertension, etc.
- Encourage health maintenance through periodic medical examination programs.
- Acquire and maintain expert knowledge for recognition and control of health hazards in the work place and assure that employees are informed of any hazards, the consequences of over exposure, and trained in the methods of control.

OBJECTIVES (CONTINUED)

- Actively contribute to and closely cooperate with professionals engaged in other Corporate Programs such as Safety, Environmental Affairs and Product Safety.
- Aid employees in maintaining the best achievable state of health in order that:
  1. They may have effective job performance.
  2. They may reach an adequate adjustment to the job and its environment.
  3. They may have the lowest absenteeism compatible with health and safety.
  4. They may enjoy a longer productive employment and useful life.
- Provide medical and industrial hygiene consultation to departments and Components of the Corporation.
- Prepare policies and guidelines for the performance of occupational medical and industrial hygiene services, and provide evaluative guidance to managers on the services being provided by health professionals.
- Communicate to the employee all significant findings of each examination and advise appropriate action, noting in the medical record what has been done.

OBJECTIVES (CONTINUED)

- Maintain medical and exposure records in a confidential manner.

- End -

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SUBJECT	SECTION DEFINITIONS	
DEFINITIONS	DATE 10/2/80	PAGE 1 OF 19
	APPLIES TO ☒ UNITED STATES ☒ INTERNATIONA	

ACCIDENT

An undesired and unplanned event that results in harm to a person and/or damage to property.

ACTION LEVEL (AL)

Workspace concentration standard which is below the Permissible Exposure Limit as defined by OSHA.

ACUITY

Pertains to the sensitivity of a bodily organ in performing its function.

ACUTE TOXICITY

Short-term effects of exposure to poisonous substances.

ALLERGY

A response of a hypersensitive person to chemical and physical stimuli.

ALVEOLI

Tiny air sacs of the lungs at the end of a bronchiole, through which gas exchange takes place by which the blood takes in oxygen and gives up its carbon dioxide in the process of respiration.

AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS (ACGIH)

A professional organization devoted to the development of administrative and technical guidelines for worker health protection. (ACGIH defines TLV's). Membership is limited to professional personnel in government agencies or educational institutions engaged in occupational safety and health programs.

ANGIOSARCOMA

A rare form of cancer, originating in blood vessels, which may occur in the liver. Has been associated with exposure to vinyl chloride.

ANOXIA AGENT

A chemical causing a severe deficiency of oxygen reaching the tissues of the body and resulting in permanent damage if continuing exposure is permitted. Of special concern for fertile females in the workplace because of effect on the embryo-fetus.

AREA COMPANIES

International components of Union Carbide. Includes UC Canada, UC Eastern, UC Europe, UC Mid-East-Africa, and UC Pan America.

ATTENUATION (Sound)

The reduction, expressed in decibels, of the sound intensity at a designated first location as compared with sound intensity at a second location, which is accoustically farther from the source.

AUDIBLE RANGE

The frequency range over which normal ears hear--approximately 20 Hz through 20,000 Hz. Above the range of 20,000 Hz, the term ultrasonic is used. Below 20 Hz, the term subsonic is used.

AUDIOGRAM

A record of hearing ability loss or hearing level measured at several different frequencies--usually 500 to 6000 Hz. The audiogram may be presented graphically or numerically.

AUDIOMETER

A signal generator or instrument which can be operated manually or automatically for measuring objectively the sensitivity of hearing in decibels referred to audiometric zero. Pure tone audiometers are standard instruments for industrial use.

BENIGN

Not malignant; not recurring; associated with tumors.

BIOASSAY

Determination of the relative activity of a substance by comparing its biological effect on a test organism with that of a standard preparation. Bioassay also refers to analysis of toxic materials or their metabolic products in human tissue or excreta.

BRONCHIAL TUBES (Bronchioles)

Branches or subdivisions of the trachea (windpipe) which carry air into and out of the lungs.

CARCINOGEN

Any tumor-producing substance or agent.

CARCINOMA

Cancer in cells that line the body's internal and external surfaces (lung, breast, skin).

CHRONIC TOXICITY

Long-term effects of exposure to poisonous substances.

CILIA

Tiny hair-like "whips" in the bronchi and other respiratory passages that normally aid in the removal of dust trapped on these moist surfaces.

COCHLEA

The auditory part of the inner ear which contains the nerve cells which when damaged results in hearing impairment.

COMPONENT

U.S. division or (International) Area Company.

CORPORATE

Applicable to Union Carbide Corporation and its affiliated companies (Note: "UCC" refers only to the parent company).

CRITERIA DOCUMENT

Results of research on hazards to health and safety or standards prepared by NIOSH for OSHA, often with recommendations for establishing occupational health standards. It is not a regulation or a standard and has no legally enforceable aspects.

DECIBEL (dB)

A dimensionless unit used to express a logarithmic ratio between a measured quantity and a preference quantity. It is commonly used to describe the levels of acoustic intensity, acoustic power sound pressure levels, and hearing threshold when a reference quantity is specified.

DIVISION (UCC)

A U.S. component of UCC.

EMPHYSEMA

A lung disease resulting from the enlargement of the alveoli accompanied by destruction of normal tissue.

EPIDEMIOLOGY

A branch of medical science that deals with the incidence, distribution, and control of disease in a population. In Union Carbide this would most likely be studies to determine health effects from exposure of employees to substances in the workplace.

ETIOLOGY

The study or knowledge of the causes of disease.

EXPOSURE INFORMATION

Work assignment history, applicable area sampling data, specific industrial hygiene sampling results and other applicable data as defined by OSHA or other government agencies concerning Union Carbide employees obtained by industrial hygiene or health physics department personnel. The written exposure data is the employee's exposure record.

GENOTOXIN

All-encompassing term coined to describe any substance - carcinogen, mutagen, or teratogen - that somehow adversely affects genetic development.

GUIDELINE

A suggested method of sound operation which has been proven effective. Other methods are acceptable only if they produce equivalent results.

HAZARD

A dangerous or perilous condition, potential or inherent, which can bring about an interruption or interference with the expected orderly progress of an activity or individual.

INCIDENT

An undesired event that could, under different circumstances (time, distance, etc.) have resulted in an accident.

INSPECTION, HEALTH

An examination of a specific item or group of items to detect unhealthful conditions and practices before they produce a problem.

IN VITRO

Outside the body, usually refers to test methods conducted in test tubes and petri dishes.

IN VIVO

In living organisms, usually refers to test methods involving animal experiments.

LATENT PERIOD

The time which elapses between exposure and the first manifestation of damage.

LC_{50}

The airborne concentration of a given substance that when inhaled over a period of time will kill 50% of the animals under test.

LD_{50}

The oral dose which is required to produce death in 50% of the exposed species, usually within the first 30 days.

LEUKEMIA

Progressive proliferation of abnormal leukocytes found in blood forming tissues, other organs and usually in the blood in increased numbers.

LYMPHOMA

A malignancy in the lymphoid tissue of the body.

MALIGNANT

Tending to become progressively worse and to result in death. In the case of a neoplasm, having the property of uncontrollable growth and dissemination, or recurrance after removal, or both.

MANDATORY MEDICAL EXAMINATIONS

Such examinations are required as a condition of employment for affected employees. Examples are: preplacement physicals; transfer or promotional opportunity physicals; medical surveillance required for continued participation in the job either by the Corporation or governmental regulation (e.g., airplane pilots); and Company-required

MANDATORY MEDICAL EXAMINATION

examinations for the determination of occupational health risk, whether pursuant to law or otherwise.

MEDICAL INFORMATION

Diagnosis, medical opinions and other medical information concerning Union Carbide Corporation employees obtained by medical department personnel. It may be in oral or written form. When written, it is part of the employee's medical record.

MEDICAL REPORTS

Referral letters or recorded verbal discussions from or with medical professionals not employed by Union Carbide Corporation, e.g., physicians, nurses, physiotherapists, phychologists, etc., and summaries, notes, etc., not related to specific visits or requests for medical services by an employee patient.

MELANOMA SKIN CANCER

A rare form of cancer which originates in certain skin lesions and spreads to the internal organs.

METASTASIS

A secondary growth of a malignant tumor in another part of the body, i.e., spread of cancer from the primary tumor to other parts of the body.

MORBIDITY

The relative incidence of disease.

MORTALITY

The death rate.

MUTAGEN

A chemical or physical agent that induces genetic mutations.

NARCOSIS

Stupor or unconsciousness produced by chemical substances.

NATIONAL CANCER INSTITUTE (NCI)

One of the ten institutes within the National Institutes of Health, part of the Department of Health and Human Services.

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH)

The "research arm" for OSHA. Established in the Department of Health and Human Services to (1) develop and recommend occupational safety and health standards for OSHA and (2) perform research and training functions connected with the Act.

NEOPLASM

A new growth of tissue serving no physiologic function.

Syn: Tumor.

NOISE

Unwanted sound. Unwanted because it can cause annoyance, interfere with speech or communication, and/or cause hearing impairment.

NON-OCCUPATIONAL DISPENSARY VISITS

Visits for diagnosis, treatment or advice on injuries or illnesses not claimed to have arisen out of or in the course of employment but which affect the employee's ability to perform his/her job. They do not include treatment, etc., of an employee by the company contract physician in his capacity as the employee's private physician.

OBJECTIVE

An end toward which effort is directed.

UNION CARBIDE

CORPORATE POLICY

SUBJECT	DATE	NUMBER	PAGE
OCCUPATIONAL MEDICINE	3/1/83	2.36	1

APPLIES TO ☒ UNITED STATES ☒ INTERNATIONAL

PURPOSE/BACKGROUND

The Corporate Charter contains the following Employee Commitment:

> To provide working conditions, programs of training and education, and persistent review and appropriate modification of facilities and practices to protect the health and safety of all employees.

To satisfy this Employee Commitment requires establishing minimum standards for occupational medical practices and services in Union Carbide.

External conditions and events are becoming more significant to the occupational medicine function:

- There are ever increasing governmental requirements for medical surveillance examinations; progressively more stringent exposure standards being developed and enforced by governments and industry based on new toxicological data; and an increasing governmental involvement in toxicology which is reflected in such activities as federal and international standardization of testing procedures.

- Industry in general is expanding health care services in an effort to contain health care delivery costs and keep employees productive; and employees and unions, particularly at the state and national level, are taking a greater interest in occupational health matters.

- There is increased litigation with respect to product liability and the health of employees; the use of toxicological and epidemiological studies to determine occupational health risks and provide safe products and healthy working conditions is increasing, and the results of such studies are receiving greater publicity and causing increased public concern.

- The confidentiality of medical information is increasingly being demanded by the public yet there are pressures from many areas to release medical records to government agencies, to employees and designated third parties thereby making accurate and objective documentation essential.

These considerations necessitate a clearly defined corporate policy statement together with a system of managerial control of occupational medical activities to assure that Corporate objectives and commitments are achieved. This Policy is a formalization and expansion of existing Corporate occupational medicine practices.

A22143

UNION CARBIDE **CORPORATE POLICY**

SUBJECT	DATE	NUMBER	PAGE
OCCUPATIONAL MEDICINE	3/1/83	2.36	2
	APPLIES TO ☒ UNITED STATES ☒ INTERNATIONAL		

POLICY

Union Carbide will:

1. Comply with all applicable governmental laws and regulations relating to occupational medicine.

2. Provide medical and health services that conform to good professional practices and are cost effective.

3. Encourage employee health promotion and the medical aspects of employee assistance programs as well as efforts to reduce disability time resulting from accidents or illness.

4. Participate in appropriate industry sponsored toxicological and epidemiological studies as needed to reach decisions regarding product safety and health in the work place.

5. Respond to responsible public inquiries regarding the health effects of our products.

6. Establish and make known responsible positions on occupational medicine, toxicology, and epidemiology issues significant to Union Carbide.

7. Speak with one consistent voice within each country in contacts with governments and publics on occupational medicine, toxicology, and epidemiology issues.

SCOPE

This policy applies to UCC and to all affiliates worldwide in which UCC has a greater than 50 percent equity interest and is recommended for application in affiliates in which UCC has a 50 percent or less equity interest.

DELEGATION

The assignment of duties and delegation of roles and authorities to carry out the objectives enumerated under Item 1 of the POLICY above are set forth in Corporate Policy 3.5.1., "Health, Safety, and Environmental Laws and Regulations - Compliance and Enforcement" and Corporate Policy 1.5.6., "International Affiliates - Corporate Policy and Procedures Application". The assignment of duties and delegation of roles and authorities to carry out all other provisions of the policy defined herein will be as follows:

- To Components:

  - The line duty and end-result accountability for deciding which non-governmentally mandated medical services (including toxicological and epidemiological studies) are provided and additionally, providing both mandated and elected medical services to employees, except at the UCC headquarters location, Tarrytown and consolidated office buildings (where such services shall be determined by the CEO, Tarrytown site manager and consolidated office building management respectively), in accordance with policies, procedures and objectives issued by the UCC Health, Safety and Environmental Affairs Department.

  - The line duty and end-result accountability for the development and administration of an internal control system to implement the policies enumerated above.

- To the UCC Health, Safety and Environmental Affairs Department

  (1) Line roles in the United States and Puerto Rico to:

  - Provide medical facilities and services for medical and health programs for personnel at the UCC headquarters location.

  - Provide a medical emergency response center.

  - Inform accountable component and corporate department management of their duties and accountabilities under this Policy.

  - Do or have done epidemiological studies and conduct epidemiology surveillance programs which are governmentally mandated or authorized by a component.

  - Render formal medical opinions which could affect other policy areas (e.g., employee relations) or which could affect Union Carbide in external relations including litigation.

  - Establish corporate public policy positions on occupational medicine issues significant to Union Carbide, subject to authorization by the CEO/COO.

(2) Coordinating roles with the duty and authority to develop and issue, after an opportunity to comment has been provided to components, policies, procedures, or objectives, to implement this POLICY as specified below:

- For medical examinations, including surveillance examinations, periodic examinations, preemployment examinations, and examinations to determine medical fitness for jobs.

- For the treatment of, and rehabilitation as a result of, occupational illnesses or injuries including the requirements for medical facilities and staffing, the use of medical facilities and staff in the treatment of non-occupational illnesses or injuries, and the approval of personnel protection equipment.

- For the representation of Union Carbide in trade and professional associations (other than groups primarily composed of attorneys) on matters relating to occupational medicine, toxicology and epidemiology.

- For the preparation, retention, and release of medical records and medical information.

- For publication of medical/toxicological/health effects/ epidemiology data in employee communications, product safety information, and any other means of communications to groups or individuals outside of Union Carbide, including the authority to approve the publication in advance of releases regarding medical/toxicological/health effects data.

- For health promotion programs and medical aspects of employee assistance programs.

- For selection and career development plans of medical personnel in components.

- For interpretation of toxicological data and statements of health effects of materials and products.

- For toxicological testing procedures and laboratories.

(3) The duty and authority to conduct periodic audits in the United States and Puerto Rico relating to occupational medicine for:

- Adequacy of internal control system.
- Compliance with Corporate policies, procedures and objectives.
- Operating practices which raise questions of noncompliance with applicable laws, which questions will be referred to the Law Department.

(4) Coordinating role applicable to area companies and international affiliates, with the duty and authority to issue policies which define the requirements for a management system to achieve the objectives enumerated under POLICY above, including the authority to approve the system for adequacy.

(5) Service roles to components relating to medical and health services on request.

o To the UCC Law Department:

(1) Line roles in the United States and Puerto Rico to:

- Provide legal advice and service with respect to Union Carbide's occupational medicine duties and liabilities under the law, including legal advice and service to components and departments to (a) identify and resolve questions of legal compliance and (b) develop and implement legal compliance programs.
- Represent the Corporation in the handling of legal claims, and litigation seeking recovery for personal injury or property damage allegedly resulting from occupational medicine issues.
- Represent the Corporation on occupational medicine issues in dealing with groups primarily composed of attorneys.

(2) A coordinating role outside of the United States and Puerto Rico with the duty and authority to issue policies, procedures, and objectives for the provision of legal services to international affiliates with respect to occupational medicine.

UNION CARBIDE **CORPORATE POLICY**

SUBJECT	DATE	NUMBER	PAGE
OCCUPATIONAL MEDICINE	3/1/83	2.36	6
	APPLIES TO ☒ UNITED STATES ☒ INTERNATIONAL		

REFERENCES

Corporate Policy Manual: Policies 1.5.6, "International Affiliates - Corporate Policy and Procedures Application"; 3.5.1, "Health, Safety, and Environmental Laws and Regulations - Compliance and Enforcement"; 3.5.4, "Product Safety"; 3.5.6 "Occupational Health".

Corporate Environmental Affairs Manual

Medical Policies, Procedures and Guidelines Manual

Occupational Health Manual

Advice and Service:

Director, UCC Corporate Medical Department
Old Ridgebury Rd., Section P2594
Danbury, CT 06817

-END-

A22148

UNION CARBIDE CORPORATE OCCUPATIONAL HEALTH MANUAL

SUBJECT	SECTION	
RESPIRATORY PROTECTION	POLICIES/PROCEDURES	
	DATE 8/26/82	PAGE 1 OF 2
	APPLIES TO ☒ UNITED STATES ☒ INTERNATIONAL	

PURPOSE/BACKGROUND

Components shall maintain standard procedures for the proper selection, maintenance, and use of respiratory protection equipment for potentially hazardous atmospheres.

POLICY

1. Written standard procedures shall exist in each component of Union Carbide consistent with federal, state, other government and ANSI standards.
2. Training in the selection, maintenance and operation is provided.
3. Accountabilities and responsibilities for implementation are defined and understood.
4. Critical elements of the procedure are incorporated into periodic Component program audits to ensure understanding and compliance.

SCOPE

This policy applies to all parts of UCC and to all affiliates worldwide in which UCC has greater than 50 percent equity interest, and is recommended for application in affiliates of 50 percent or less equity interest.

A22246

UCC IH-3-77-D

SUMMARY OF JOB EXPOSURES

Division_____ Page ____ of ____

Facility_____ Bldg. No._____ Report Period_____

Job Description or Title	ID Code	Dept. s/o Operation	Air Contaminants and/or Physical Hazards	Number of Measurements	Range of Measurements (units)	Geometric Mean (GM)	Geometric Std. Dev. (GSD)	Current TLV (units)	*	Exposure as % of TLV	Comments or Notes

Geometric Mean(GM) = $\sqrt[n]{(x_1)(x_2)\ldots(x_n)}$

where: x_1 = value of first measurement
x_n = value of last measurement
n = the nth root of the product

Geometric Standard Deviation(GSD) = 10^{s1}

$$s_1 = \sqrt{(1/n-1)\left[(y_1^2+y_2^2+\ldots+y_n^2) - n(\bar{y})^2\right]}$$

$y_1, y_2, \ldots, y_n$ = log of each measurement

$\bar{y} = (1/n)(y_1 + y_2 + \ldots + y_n)$

* - Source of Standards:
1 - OSHA
2 - ACGIH or NIOSH
3 - UCC-HSEA

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UNION CARBIDE CORPORATE OCCUPATIONAL HEALTH MANUAL

SUBJECT	SECTION	
ORGANIZATION/DUTIES - GENERAL OCCUPATIONAL HEALTH COMMITTEE	INFORMATION/GUIDELINES	
	DATE 8/26/82	PAGE 1 OF 2
	APPLIES TO ☒ UNITED STATES ☒ INTERNATIONAL	

The General Occupational Health Committee is made up of a representative of each component, usually the component's Health Manager and representatives of appropriate Corporate Staff groups. It meets as needs dictate, but not less than twice per year.

The function of the General Occupational Health Committee (GOHC) is to assist in formulation of the health policy for the Corporation and to insure the exchange of mutually beneficial information among Components.

The Corporate Occupational Health Director serves as Chairman of the GOHC.

GOHC MEMBERS:

J. H. Barrett	Solvents & Intermediates	Texas City, TX
B. L. Barton	Carbon Products	Parma, OH
J. M. Cleverdon	Engineering Products	Danbury, CT
T. L. Collins	Engineering & Hydrocarons	Texas City, TX
R. W. Cope	HS & EA	Danbury, CT
J. S. Cornell	Silicone & Urethane	So. Charleston, WV
T. A. Gagner	Home & Automotive	East Hartford, CT
N. W. Gaines	HS & EA	Danbury, CT
R. E. Graebert	Polyolefins	So. Charleston, WVA
S. E. Hine	Films & Packaging	Chicago, IL
E. K. Jensen	Linde	Danbury, CT

GOHC MEMBERS (CONTINUED)

V. H. Johnkoski	Ethylene Oxide/Glycol	So. Charleston, WV
R. G. Jordan	Nuclear Division	Oak Ridge, TN
J. A. Leonard	Agricultural Products	Research Triangle Pk,NC
T. A. Lincoln	HS & EA	Danbury, CT
W. H. Long	UC Southern Africa	Johannesburg
D. E. MacNab	UC Pan America, Inc.	Danbury, CT
R. F. McClurg	UC Africa & Mid East	Danbury, CT
O. P. Mukheja	UC Canada	Toronto
D. Pearson	Safety & Health	London
R. E. Plevan	Specialty C&P	Danbury, CT
R. R. Rankin	Coatings Materials	Texas City, TX
H. B. Rhodes	Metals Division	Niagara Falls, NY
J. F. Rooney	Battery Products	Rocky River, OH
H. D. Smilie	Electronics Division	Greenville, SC
F. O. Sullivan	UC Eastern	Hong Kong
W. R. van der Hoeven	Ethylene Oxide/Glycol	Danbury, CT
A. G. Voress	HS & EA	Danbury, CT
J. W. Whittlesey	Law Department	Danbury, CT
R. C. Wise	Ethylene Oxide Derivatives	Danbury, CT
W. J. Ziemba	General Departments	Tarrytown, NY

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