

INTERNAL CORRESPONDENCE

UNION CARBIDE CORPORATION

P. O. BOX 3370, BROWNSVILLE, TEXAS 78520

COATINGS MATERIALS DIVISION

To (Name) R. C. McDermott
Company J. L. Wyatt
Location

Date November 2, 1982

Originating Dept.

Answering letter date

Subject List of Teratogens and Carcinogens
Found in Brownsville Plant

Copy to M. Gutierrez
D. R. Haley

One of the deficiency items listed in our recent Safety and Health Audit was the lack of an up-to-date list of teratogens in the nurse's office.

To eliminate this deficiency the attached lists are being distributed to you. One list contains the names of chemicals found in the Brownsville plant that appear in the UCC Internal Exposure Standard List, also included. The first list indicates where the chemical is found in the plant, the amount of material at each location and the reason for being listed, i.e., toxicity, carcinogen or teratogen. The second list is, as aforementioned, the UCC Internal Exposure Standard List which contains various other information about the chemicals found in the Corporation.

After review of these lists I recommend that this information be further distributed within the plant to comply with the Divisional requirement of informing employees of identified occupational health risks.

Gran

K. Gran Townsend (2)

KGT:mfw
Attachment

PLAINTIFF'S EXHIBIT

UC-P-105

DE 000648

BROWNSVILLE PLANT CHEMICALS FOUND ON UNION CARBIDE'S
INTERNAL EXPOSURE STANDARDS LIST BASED ON
CARCINOGENICITY, TERATOGENICITY OR OTHER
SIGNIFICANT TOXICITY

SUBSTANCE (CAS NO.)	LOCATION IN PLANT	AMOUNT OF SUBSTANCE	TOXICITY	EXPOSURE STANDARD
ACRYLIC ACID (79-10-7)	Laboratory Recovery	1-1/2 Qt. 0.3% in Ref. HOP; Trace in Tar Btm., Mixed Acids		2 PPM (UCC)
ASBESTOS (1332-21-4)	Laboratory Stores	8 oz. Packing, Gaskets, Fire Blankets	Known human carcinogen	10 Fibers/cc C 2 Fibers/cc > 5 um Long (OSHA)
	Weld Shop Entire Plant	Fire Blankets, Weld Screens Insulation		
BENZENE (92-87-5)	Recovery Laboratory	Impurity in Toluene 1/4 Pt.	Known human carcinogen	10 PPM 25 PPM C 50 PPM/10 Min Peak (OSHA)
BENZIDINE DERIVED DYES O-TOLIDINE (119-93-7)	Laboratory	1 Lb.	Known human carcinogen	As low as practical (UCC)
CADMIUM (7440-43-9)	Stores Bldg. 230 Maintenance Areas	Silver Solder Plating on nuts and Bolts	Cancer agent teratogen	40 ng/m ³ 200 ng/m ³ C (UCC)
CHLORODIFLUORO METHANE (FLUOROCARBON 22) (75-45-6)	Most Air Conditioners Stores in Cylinders North of 428	5 to 6 125 Lb. Drums Per Year	Teratogen	1000 PPM (ACGIH)

C = Ceiling Value, No Exposure for Any Time Above This Value

DE 000649

BROWNSVILLE PLANT CHEMICALS FOUND ON UNION CARBIDE'S
INTERNAL EXPOSURE STANDARDS LIST BASED ON
CARCINOGENICITY, TERATOGENICITY OR OTHER SIGNIFICANT
TOXICITY

PAGE 3

SUBSTANCE (CAS NO.)	LOCATION IN PLANT	AMOUNT OF SUBSTANCE	TOXICITY	EXPOSURE STANDARD
MERCURY	Laboratory	Metal 100 Lbs. Mercuric Chloride 5 Lbs. Mercuric Thiocyanate 1 Lb. Mercuric Nitrate 1/2 Lb. Mercuric Oxide 1/4 Lb.	Brain Damage	0.05 mg/m ³ (ACGIH)
	Various Inst. Shops	Manometer Mercury Metal		
2-METHOXY ETHANOL (METHYL CELLOSOLVE) (109-86-4)	Laboratory	55 Gal.	Teratogen	10 PPM TWA 25 PPM Steel (Skin) (UCC)
	Stores	Several Drums		
NICKEL	Laboratory	Nickel Chloride 4 Oz. Nickel Ammonia Sulfate 1 Lb. Nickel Sulfate Solution 1 Pt.	Suspect cancer agent	1 mg/m ³ (OSHA)
POLYCHLORINATED BIPHENYLS (PCB's)	Energy Systems Gas Turbine Transformers Sub 1	1476.5 Kg 2 Drums PCB Contaminated Misc. Material	Suspect cancer agent Embrototoxic	1 ug/m ³ 3 ug/m ³ No skin contact (UCC) C

10/29/82

DE 000651

UNION CARBIDE INTERNAL EXPOSURE STANDARDS LIST
(See Reverse Side)

NOTES OF EXPLANATION:

1. A material is included on this list following a detailed evaluation of published toxicological, medical, epidemiological and other relevant information by the Union Carbide Corporate Toxicology Assessment and Advisory Committee (TAAC) and subsequent review and acceptance by the Corporate Health Effects Review Board (HERB).
2. This listing is periodically reviewed. New entries are made, or existing ones modified, when TAAC and HERB determine that there is sufficient credible evidence for such as action.
3. (a) The entries marked with an asterisk (*) are those which have not yet been formally reviewed and verified by TAAC as part of a current updating procedure. Those so marked will be reviewed at the earliest convenient time.
(b) Entries marked with a double asterisk (**) indicate they are under continual review because of a current deficiency of relevant credible data.
(c) "N.D." indicates that information has not been located to allow a decision on carcinogenic or teratogenic potential.
(d) The symbol (-) indicates that the available evidence is sufficient to determine that a material does not cause a given effect.

DEFINITIONS:

1. Known Human Carcinogen means a substance for which there is sufficient credible evidence to determine that the material has caused cancer in humans.
2. Suspect Cancer Agent means a substance for which there is credible scientific evidence, based on animal and other related studies, that the material is carcinogenic in laboratory animals, but for which there is insufficient evidence that the substance causes cancer in man.
3. Teratogen means a chemical substance or physical agent which causes abnormalities in structural and/or functional development during gestation.

U. C. Corporate HERB
Accepted: 1 March 1982

DE 000652



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	TERATOGENICITY	OTHER SIGNIFICANT TOXICITY	EXPOSURE STANDARD FOLLOWED BY UNION CARBIDE (SOURCE)
2-Acetylamino- fluorene (53-96-3)	Suspect cancer agent	Teratogen		As Low As Practical (UCC)
Acrylic acid (79-10-7)				2 ppm (UCC)
Acrylonitrile (107-13-1)	Known human carcinogen	Teratogen	:	2 ppm 10 ppm C (OSHA)
4-Aminodiphenyl (92-67-1)	Known human carcinogen	N.D.		As Low As Practical (UCC)
Asbestos (1332-21-4)	Known human carcinogen	(-)		10 Fibers/cc C 2 Fibers/cc >5 um long (OSHA)
2,2'-Azobis- isobutyronitrile (78-67-1)				0.5 ppm 2 ppm STEL (UCC)

U.C. Corporate HERB (Approved 1 March 1982)

DE 000653

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

(See Reverse Side for Explanations and Definitions)

SUBSTANCE (CAS No.)	CARCINOGENICITY	TERATOGENICITY	OTHER SIGNIFICANT TOXICITY	EXPOSURE STANDARD FOLLOWED BY UNION CARBIDE (SOURCE)
Bis-Chloromethyl ether (542-88-1)	Known human carcinogen	N.D.		As Low As Practical (UCC) (R)
Cadmium (7440-43-9)	Suspect cancer agent	Teratogen		40 $\mu\text{g}/\text{m}^3$ * 200 $\mu\text{g}/\text{m}^3$ C (UCC)
Carbon tetra- chloride (56-23-5)	Suspect cancer agent	(-)	Embryotoxic	2 ppm* 4 ppm C (UCC)
Chlorodifluoro- methane (Fluorocarbon-22) (75-45-6)	**	Teratogen*		1000 ppm (ACGIH)
Chloroform (67-66-3)	Suspect cancer agent	Teratogen		2 ppm* 4 ppm C (UCC)
Chromium-6 compounds	Suspect cancer agents	**		0.05 mg/m^3 (as Cr) (ACGIH)

Footnote: (R) Revision from previous list

U.C. Corporate HERB (Approved 1 March 1982)

DE 000655

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

(See Reverse Side for Explanations and Definitions)

SUBSTANCE (CAS No.)	CARCINOGENICITY	TERATOGENICITY	OTHER SIGNIFICANT TOXICITY	EXPOSURE STANDARD FOLLOWED BY UNION CARBIDE (SOURCE)
4-Dimethylamino- azobenzene (60-11-7)	Suspect cancer agent	Teratogen		No exposure* (OSHA)
Dimethyl formamide (68-12-2)	**	Teratogen*		10 ppm No skin contact (OSHA)
Dimethyl sulfate (77-78-1)	Suspect cancer agent	N.D.		0.1 ppm No skin or oral contact (ACGIH)
Dimethyl sulfoxide (67-68-5)	N.D.	Teratogen		10 ppm* No skin contact (UCC)
1,4-Dioxane (123-91-1)	Suspect cancer agent	** (R)		50 ppm* No skin or oral contact (UCC)
N-Dodecyl mercaptan (112-55-0)				0.5 ppm (UCC)

Footnote: (R) Revision from previous list

U.C. Corporate HERB (Approved 1 March 1982)

DE 000657

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

(See Reverse Side for Explanations and Definitions)

SUBSTANCE (CAS No.)	CARCINOGENICITY	TERATOGENICITY	OTHER SIGNIFICANT TOXICITY	EXPOSURE STANDARD FOLLOWED BY UNION CARBIDE (SOURCE)
2-Ethoxyethanol (CELLOSOLVE) (110-80-5)	N.D.	Teratogen		50 ppm C (UCC)
Ethylene dibromide (106-93-4)	Suspect cancer agent	**		0.1 ppm (UCC)
Ethylene dichloride (107-06-2)	Suspect cancer agent	(-) (R)		5 ppm (UCC)
Ethyleneimine (151-56-4)	Suspect cancer agent	** (R)	Embryotoxic (R)	As Low As Practical (UCC)
Ethylene oxide (75-21-8)	Suspect cancer agent			5 ppm (UCC)
Ethylene thiourea (96-45-7)	Suspect cancer agent	Teratogen		As Low As Practical (UCC)

Footnote: (R) Revision from previous list

U.C. Corporate HERB (Approved 1 March 1982)

DE 000659

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

(See Reverse Side for Explanations and Definitions)

SUBSTANCE (CAS No.)	CARCINOGENICITY	TERATOGENICITY	OTHER SIGNIFICANT TOXICITY	EXPOSURE STANDARD FOLLOWED BY UNION CARBIDE (SOURCE)
Hydrogen Sulfide (7783-06-4)		** (R)	Chemical Asphyxiant	10 ppm (OSHA)
Itaconic Acid (97-65-4)				5 mg/m ³ (UCC)
Lead (7439-92-1)	(-)	Teratogen		50 µg/m ³ 30 µg/m ³ Action Level (OSHA)
Mercury Alkyl Compounds		Teratogens*		0.01 mg/m ³ (as Hg) (ACGIH)
Mercury, All compounds except Alkyl				0.05 mg/m ³ (as Hg) (ACGIH)
2-Methoxyethanol (Methyl CELLOSOLVE R) (109-86-4)		Teratogen		10 ppm TWA(Skin) 25 ppm STEL (UCC) (R)

Footnote: (R) Revision from previous list

U.C. Corporate HERB (Approved 1 March 1982)

DE 000661

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

(See Reverse Side for Explanations and Definitions)

SUBSTANCE (CAS No.)	CARCINOGENICITY	TERATOGENICITY	OTHER SIGNIFICANT TOXICITY	EXPOSURE STANDARD FOLLOWED BY UNION CARBIDE (SOURCE)
Nitric Oxide (10102-43-9)			Chemical Asphyxiant	25 ppm (OSHA)
Nitrobenzene (98-95-3)		N.D. (R)	Chemical Asphyxiant	1 ppm (Skin) (OSHA) (R)
4-Nitrodiphenyl (92-93-3)	Known human carcinogen	N.D.		No exposure* (OSHA)
2-Nitropropane (79-46-9)	Suspect cancer agent	**		25 ppm* (OSHA)
N-Nitrosoamine compounds	Suspect cancer agents*			No skin or oral contact (UCC)
N-Nitroso- dimethylamine (62-75-9)	Suspect cancer agent	(-) (R)	Embryotoxic (R)	OSHA Standard

Footnote: (R) Revision from previous list

U.C. Corporate HERB (Approved 1 March 1982)

DE 000663

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

(See Reverse Side for Explanations and Definitions)

SUBSTANCE (CAS No.)	CARCINOGENICITY	TERATOGENICITY	OTHER SIGNIFICANT TOXICITY	EXPOSURE STANDARD FOLLOWED BY UNION CARBIDE (SOURCE)
Quench oil	Suspect cancer agent	N.D.		200 $\mu\text{g}/\text{m}^3$ 600 $\mu\text{g}/\text{m}^3$ C* No skin contact (UCC)
Radiation	Known human carcinogen	Teratogen*		0.5 REMS During Pregnancy 5 REMS-Equiv./yr (NCRP Report 39, 1971) (R)
Resin B condensates	Suspect cancer agents	N.D.		200 $\mu\text{g}/\text{m}^3$ 600 $\mu\text{g}/\text{m}^3$ C* No skin contact (UCC)
2,3,7,8-Tetra- chlorodibenzo- p-Dioxin (TCDD) (1746-01-6)	Suspect cancer agent	Teratogen		No exposure* (UCC)
Tetramethylurea (632-22-4)	N.D.	Teratogen		No exposure* (UCC)
Toluene-2,4- diamine (95-80-7)	Suspect cancer agent	N.D.		0.1 ppm* No skin or oral contact

Footnote: (A) Standard based on suspected presence of
Polycyclic Aromatic Hydrocarbons
(R) Revision from previous list

U.C. Corporate HERB (Approved 1 March 1982)

DE 000665



INTERNAL CORRESPONDENCE

CHEMICALS AND PLASTICS

270 PARK AVENUE, NEW YORK, NEW YORK 10017

To (Name) Operations Managers
Market Area Managers
Plant Managers
R&D Directors
Engineering Directors
Distribution Directors

Date July 18, 1978

Originating Dept. SHARE - EP/OH

Floor Number 21

Answering letter date

cc: Attached Distribution List

Subject Updated C&P List of
Potential Carcinogens

Attached is the up-to-date list of substances of interest to C&P which we have determined should be regarded as potential carcinogens and therefore handled accordingly. This replaces the previous list issued with our letter dated January 31, 1978. Several additions have been made, including certain chromium compounds and epoxy resins.

Permissible exposure limits and other information regarding these substances are contained in a separate detail document which will be sent to all Industrial Hygiene and Medical Departments, environmental protection and occupational health coordinators, technology managers, and other appropriate manager for all locations and functions. Others with a need to know may obtain a copy by contacting Dr. W. C. Kuryla, Technology Manager-Occupational Health, at the South Charleston Technical Center.

E. Q. Hull
E. Q. Hull, M. D.
Medical Director
Chemicals and Plastics

A. E. Montagna
A. E. Montagna
Operations Manager
Environmental Protection
and Occupational Health
Chemicals and Plastics

EQH/AEM/ad
Attachment

29443

DE 000667

Additional Distribution

*C. R. Allenbach	Niag. Falls (Metals)
*R. C. Andrews	322 (H&A)
L. M. Baker	19
*F. D. Bess	511
*N. E. Bolton	4
*J. B. Browning	22
*T. J. Burke	781 (BP)
*T. W. Carmody	22
*C. P. Carpenter	Mellon
R. G. Chenoweth	511
*R. J. Conkling	323 (Linde)
*E. F. Cox	Mellon
*L. A. Crisorio	222
*J. M. Cwikla	358 (Film)
*C. U. Dernehl	4
J. M. Fallon	21
*J. A. Fitzgerald	Jacksnvl. (APD)
*N. W. Gaines	511
*W. F. Gorham	312 (98)
*D. E. Gould	312 (Somvl.)
*R. E. Graebert	511
*R. A. Hardison	Parma (CPD)
*H. L. Haynes	22
*D. L. Heywood	21
*E. R. Homan	Mellon
*J. C. Hovious	511
*R. A. Howard	44 (Elec.)
*E. Q. Hull	511
*R. F. Jensen	323 (Linde)
*J. B. Johnson	511
*R. G. Jordan	OakRidge (Nuc.)
*R. T. Kramer	512
*W. C. Kuryla	511
*T. A. Lincoln	22
*M. G. Manetti	46
*J. D. Martin	510
*A. E. Montagna	21
*O. P. Mukheja	440 (Toronto)
*R. E. Peele	511
*E. A. Piersall	250 (Metals)
*T. P. Raby	312 (51)
*J. A. Ring	19
C. D. Schmidt	29
T. N. Tackett	10
*A. G. Voress	21
*G. W. Wainwright	1200 (Geneva)
*C. S. Weil	Mellon
*J. W. Whittlesey	46
*R. C. Wise	21
*V. A. Yarborough	44 (Devel.)
R. L. Yelton	29
N. L. Zutty	29

*Additional detail document enclosed.

A. E. Montagna-7/18/78

C&P OCCUPATIONAL HEALTH TEAM

LISTING OF POTENTIAL CARCINOGENS

JULY 1, 1978

2-Acetylaminofluorene	Ethylene Thiourea	2-Nitropropane
Acrylonitrile (a) (b)	4-Dimethylaminoazobenzene	Nitrosoamines (b)
4-Aminodiphenyl	1,4-Dioxane (a)	N-Nitrosodimethylamine (b)
Asbestos (a) (b)	Epichlorohydrin (a)	Perchloroethylene (a) (Tetrachloroethylene)
Benzene (a) (b)	Epoxy Resin ERL 2774 (a) (Diglycidyl Ether of Bisphenol A)	Polychlorinated Biphenols (b)
Benzidine	Epoxy Resin ERL 4205 (a) (Bis (2,3-Epoxypropyl) Ether)	Polycyclic Aromatic Hydrocarbons (a) (b) (Fuel Oil Residues; Quench Oil, pitches; tars, Dripolenes A. B, and C, Resin B Condensates)
Benzidine-Derived Dyes	Epoxy Resin ERL 4206 (Vinylcyclohexene dioxide) (a)	
Bis-2-chloroethyl ether (Dichloroethyl Ether: CHLOREX) (a)	Epoxy Resin ERL 4234 3-(3',4' - Epoxycyclohexyl) 8,9-epoxy-2,4-dioxaspiro (5,5-undecane) (a)	β-Propiolactone
Bis-2-chloroethyl-2- naphthylamine		Toluene-2,4-diamine (a)
Bis-chloromethyl ether	Ethylene dibromide	Trichloroethylene (a)
Carbon tetrachloride (a)	Ethylene dichloride (a)	Vinyl Chloride (a)
Chloroform (a)	Ethyleneimine (Aziridine) (b)	
Chloroprene	Methyl chloromethyl ether	
Chromates of Lead & Zinc	α-Naphthylamine (b)	
Chromium-6 Carcinogenic Compounds (including bis-Triphenyl Silyl Chromate)	β-Naphthylamine	
3,3' -Dichlorobenzidine (and salts)	Neopentyl glycol diacrylate (a)	
Diethyl sulfate (a)	Nickel, Inorganic (a)	
Diisopropyl sulfate (b)	4-Nitrodiphenyl	
Dimethyl sulfate		

(a) C&P Product, Raw Material, or Process Intermediates

(b) Possible Contaminant in C&P products or operations

W. C. Kuryla/gc

July 11, 1978

DE 000669

C/P OCCUPATIONAL HEALTH TEAM
LISTING OF POTENTIAL CARCINOGENS

Page 1 of 6

SUBSTANCE	CATEGORIES*	EXPOSURE LIMITS			C/P STANDARD OR GUIDELINE
		ACGIH TLV	NIOSH PROPOSAL OR OSHA STANDARD**		
2-Acetylaminofluorene	CX		NE (c)		NE; cf Regulation 29 CFR 1910.1014
Acrylonitrile***	A	20 ppm	2 ppm (d)		2 ppm
4-Aminodiphenyl	AX	NE	NE (c)		NE; cf Regulation 29 CFR 1910.1011
Asbestos***	AX	5 fibers/cc > 5µm long	2 fibers/cc (c) > 5 m/long		2 fibers/cc > 5 m/long cf Regulation 29 CFR 1910.1001
Benzene***	AX	10 ppm	1 ppm (c)		1 ppm; NSOOC cf Regulation 29 CFR 1910.1028
Benzidine	AX	NE	NE (c)		NE; cf Regulation 29 CFR 1910.1010
Benzidine-Derived Dyes	C	---	---		NE (Hull, 4/12/78)
Bis-2-chloroethyl ether (Dichloroethyl Ether: CHLOREX)***	C	5 ppm			0.1 ppm DE 000670
* A = Known Human Carcinogen B = Suspected Human Carcinogen C = Experimental (Animal) Carcinogen AX = Known Human Carcinogen - Regulated by Government BX = Suspected Human Carcinogen - Regulated by Government CX = Experimental (Animal) Carcinogen - Regulated by Government		*** C and P Product, Raw Material or Process Intermediate	** a = NIOSH Criteria Document b = NIOSH Permit c = OSHA Permanent Standard d = OSHA Emergency Temporary Standard **** Possible contaminant in C and P products or processes NSOOC = No skin or oral contact H = No connection or contact by any route		

C/P OCCUPATIONAL HEALTH TEAM

LISTING OF POTENTIAL CARCINOGENS

Page 2 of 6

SUBSTANCE	CATEGORIES*	EXPOSURE LIMITS			C/P STANDARD OR GUIDELINE
		ACGIH TLV	NIOSH PROPOSAL OR OSHA STANDARD**		
Bis-2-chloroethyl-2-naphthylamine	A			NE	
Bis-chloromethyl ether	AX	1 ppb	NE (c)	NE; cf Regulation 29 CFR 1910.1008	
Carbon tetrachloride***	C	10 ppm	2 ppm (b) 10 ppm (c)	2 ppm	
Chloroform***	C	10 ppm	2 ppm (a) 50 ppm (c)	2 ppm	
Chloroprene	B	25 ppm	1 ppm (b) 25 ppm (c)	1 ppm	
Chromates of Lead and Zinc (as Cr)	B	0.05 mg/m ³ (as Cr)	---	0.05 mg/m ³ (as Cr)	
Chromium-6 Carcinogenic Compounds (Including Bis-Triphenyl Silyl Chromate***)	B	---	1 µg/m ³	1 µg/m ³	
3-3'-Dichlorobenzidine (and salts)	CX		NE (c)	NE; cf Regulation 29 CFR 1910.1007	
Diethyl sulfate***	C			1 ppm; NSOOC	

*

A = Known Human Carcinogen
 B = Suspected Human Carcinogen
 C = Experimental (Animal) Carcinogen
 AX = Known Human Carcinogen - Regulated by Government
 BX = Suspected Human Carcinogen - Regulated by Government
 CX = Experimental (Animal) Carcinogen - Regulated by Government

C and P Product, Raw Material or Process Intermediate

**

a = NIOSH Criteria Document
 b = NIOSH Alert
 c = OSHA Permanent Standard
 d = OSHA Emergency Temporary Standard

**** Possible contaminant in C and P products or processes

NSOOC = No skin or oral contact
 NE = No exposure or contact by any route

C/P OCCUPATIONAL HEALTH TEAM
LISTING OF POTENTIAL CARCINOGENS

Page 3 of 6

SUBSTANCE	CATEGORIES*	EXPOSURE LIMITS			C/P STANDARD OR GUIDELINE
		ACGIH TLV	NIOSH PROPOSAL OR OSHA STANDARD**		
Diisopropyl sulfate****	C				1 ppm; NSOOC
Dimethyl sulfate	C	1 ppm			1 ppm; NSOOC
4-Dimethylaminoazobenzene	CX		NE (c)		NE; cf Regulation 29 CFR 1910.1015
1,4-Dioxane***	C	50 ppm	1 ppm (a)		cf letter Hull/Montagna, 12/16/77
Epichlorohydrin***	C	5 ppm	2 mg/m ³ (a) 5 ppm (c)		0.5 ppm
Epoxy Resin ERL 2774*** (Diglycidyl Ether of Bisphenol A; 2,2-Bis(p-Glycidyloxyphenyl)propane)	C	---	---		To be determined, NSOOC
Epoxy Resin ERL 4205*** (Bis(2,3-Epoxypropyl)Ether)	C	---	---		To be determined, NSOOC

*

A = Known Human Carcinogen
 B = Suspected Human Carcinogen
 C = Experimental (Animal) Carcinogen
 AX = Known Human Carcinogen - Regulated by Government
 BX = Suspected Human Carcinogen - Regulated by Government
 CX = Experimental (Animal) Carcinogen - Regulated by Government

C and P Product, Raw Material or Process Intermediate

**

a = NIOSH Criteria Document
 b = NIOSH Alert
 c = OSHA Permanent Standard
 d = OSHA Emergency Temporary Standard

**** Possible contaminant in C and P products or processes

NSOOC = No skin or oral contact
 NE = No exposure or contact by any route

WCK/7-1-78

DE 000672

C/P OCCUPATIONAL HEALTH TEAM
LISTING OF POTENTIAL CARCINOGENS

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SUBSTANCE	CATEGORIES*	EXPOSURE LIMITS		
		ACGIH TLV	NIOSH PROPOSAL OR OSHA STANDARD**	C/P STANDARD OR GUIDELINE
Epoxy Resin ERL 4206*** (Vinylcyclohexene dioxide)	C	10 ppm		10 ppm; NSCOC
Epoxy Resin ERL 4234*** 3-(3',4'-Epoxy)cyclohexyl)8,9-epoxy-2,4-dioxaspiro(5,5-undecane)	C			1 ppm; NSOOC
Ethylene dibromide	C	20 ppm	1 mg/m ³ (a)	0.1 ppm
Ethylene dichloride***	C	50 ppm	5 ppm (a)	5 ppm
Ethyleneimine*** (Aziridine)	CX		NE (c)	NE; cf Regulation 29 CFR 1910.1012
Ethylene Thiourea	C	---	---	NE (Hu11, 4/12/78)
Methyl chloromethyl ether	AX		NE (c)	NE; cf Regulation 29 CFR 1910.1006
α-Naphthylamine***	BX		NE (c)	NE; cf Regulation 29 CFR 1910.1004

*

A = Known Human Carcinogen
B = Suspected Human Carcinogen
C = Experimental (Animal) Carcinogen
AX = Known Human Carcinogen - Regulated by Government
BX = Suspected Human Carcinogen - Regulated by Government
CX = Experimental (Animal) Carcinogen - Regulated by Government

C and P
Product,
Raw
Material
or
Process
Intermediate

**

a = NIOSH Criteria Document
b = NIOSH Alert
c = OSHA Permanent Standard
d = OSHA Emergency Temporary Standard

DE 000673

**** Possible contaminant in C and P products or processes

NSOOC = No skin or oral contact
NE = No exposure or contact by any route

C/P OCCUPATIONAL HEALTH TEAM
LISTING OF POTENTIAL CARCINOGENS

Page 5 of 6

SUBSTANCE	CATEGORIES*	E X P O S U R E L I M I T S		
		ACGIH TLV	NIOSH PROPOSAL OR OSHA STANDARD**	C/P STANDARD OR GUIDELINE
<i>β</i> -Naphthylamine	AX	NE	NE (c)	NE; cf Regulation 29 CFR 1910.1009
Neopentyl glycol*** diacrylate	C		15 µg/m ³ (a); 1 mg/m ³ (c)	1 mg/m ³ ; cf 29 CFR 1910.93
Nickel, Inorganic***	B			NSOOC
4-Nitrodiphenyl	AX	NE	NE (c)	NE; cf Regulation 29 CFR 1910.1003
2-Nitropropane	C	25 ppm	NE (b)	1 ppm; Peele letter 6-30-77
Nitrosoamines****	C			NSOOC
N-Nitrosodimethylamine****	CX		NE (c)	NE; cf Regulation 29 CFR 1910.1016
Perchloroethylene*** (Tetrachloroethylene)	C	100 ppm	50 ppm (a) 100 ppm (c)	50 ppm

*

A = Known Human Carcinogen
B = Suspected Human Carcinogen
C = Experimental (Animal) Carcinogen
AX = Known Human Carcinogen - Regulated by Government
BX = Suspected Human Carcinogen - Regulated by Government
CX = Experimental (Animal) Carcinogen - Regulated by Government

C and P Product, Raw Material or Process Intermediate

**

a = NIOSH Criteria Document
b = NIOSH Alert
c = OSHA Permissible Standard
d = OSHA Emergency Temporary Standard

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**** Possible contaminant in C and P

products or processes

NSOOC = No skin or oral contact

NE = No exposure or contact by any route

C/P OCCUPATIONAL HEALTH TEAM
LISTING OF POTENTIAL CARCINOGENS

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SUBSTANCE	CATEGORIES*	E X P O S U R E L I M I T S		
		ACGIH TLV	NIOSH PROPOSAL OR OSHA STANDARD**	C/P STANDARD OR GUIDELINE
Polychlorinated Bi-phenyls ****	B, C	1 mg/m ³ 42% C1 0.5 mg/m ³ 54% C1	1 µg/m ³ (b); 0.5 mg/m ³ (c) 54% C1	1 µg/m ³
β-Propiolactone	CX		NE (c)	NE; cf Regulation 29 CFR 1910.1013
Polycyclic Aromatic*** Hydrocarbons (Fuel Oil Residues; Quench Oil, pitches, tars, Dripolenes A, B, and C. Resin B Condensates)	A	200 µg/m ³		cf letters Hu11/Guest, 3/3/75 Hu11/Montagna, 10/76 Hu11/Montagna, 12/21/77 NSOOC
Toluene-2,4-diamine***	C			0.1 ppm; NSOOC (011n)
Trichloroethylene***	C	100 ppm	100 ppm TMA (a); 100 ppm 8 hr TMA (c)	25 ppm (Hu11/Montagna, 3/11/78)
Vinyl chloride***	AX		1 ppm (c)	1 ppm; cf Regulation 29 CFR 1910.1017

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C and P Product, Raw Material or Process Intermediate

**

a = NIOSH Criteria Document
b = NIOSH Alert
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d = OSHA Emergency Temporary Standard

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**** Possible contaminant in C and P products or processes

NSOOC = No skin or oral contact

NE = No exposure or contact by any route

South Occupational Health Coordinators

Mr. J. P. Alexander	-	513
Mr. V. D. Dutcher	-	510
Mr. F. Garcia-Sharp	-	293
Mr. J. B. Levertton	-	515
Mr. J. L. Gary	-	519
Mr. L. T. Windel	-	526
Mr. J. O. Zimmerman	-	330

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INTERNAL CORRESPONDENCE

UNION CARBIDE CORPORATION

17625 EL CAMINO REAL, HOUSTON, TX 7705

To (Name) J. H. Barrett
Division V. D. Dutcher
Location J. L. Wyatt

Date September 21, 1982

Originating Dept

Answering letter date

Copy to

Subject OSHA 1910.1000 PEL Versus
the ACGIH TLV (1981 Version)

Attached is the latest list of chemicals comparing the OSHA Permissible Exposure Level (PEL) with the American Conference of Governmental Industrial Hygienists (ACGIH) recommendations through 1981, with the Notice of Intended Change (NOIC) identified.

It is interesting to note that in some areas the ACGIH recommendation is more lenient than the OSHA 1910.

R³
R. R. Rankin

RRR:jl
Attachment
1732L

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ACGIH (1981) Listed TLV's That
Are Different From OSHA 1910.1000 PELs

Indicate UCC Division(s)	Substance	OSHA 1910.1000 PEL	ACGIH TLV (1981)
S&I, APC, FPD, HAP, SCP, CM	acetaldehyde	200 ppm	100 ppm (150 ppm STEL)
CM, CPD, E, SCP	acetic anhydride	5 ppm	5 ppm - <u>C</u>
APC	acetonitrile	40 ppm	40 ppm - <u>skin</u>
CPD, CM, APC, SUI	acrylonitrile	2 ppm 10 ppm - 15 min. C	no exposure by any route (2 ppm - NOIC*)
SUI	allyl glycidyl ether (AGE)	10 ppm - C	5 ppm - <u>skin</u> (10 ppm STEL)
L, APC, FPD, HAP, M, CPD, EOD, CM, S&I	ammonia	50 ppm	25 ppm (35 ppm STEL)
	ammonium sulfamate (ammate)	15 mg/m ³	10 mg/m ³ (20 mg/m ³ STEL)
APC, SUI	aniline	5 ppm - skin	2 ppm - skin 5 ppm STEL (also applies to aniline homologues)
HAP, BPD	inorganic arsenic compounds	0.01 mg/m ³	-----
	arsenic & soluble cmpds, as As	-----	0.2 mg/m ³
	arsenic trioxide production	-----	No TLV (A2-suspect CA)
	arsenic organic compounds (as As)	0.5 mg/m ³	-----
EP, APC, HAP, FPD, M, CM	asbestos	2 fibers/cc 10 fibers/cc - C (the above applies to all forms)	0.5 fiber/cc - amosite 0.2 fiber/cc - crocidolite 2.0 fiber/cc - chrysotile and all other forms

Indicate UCC Division(s)	Substance	OSHA 1910.1000 PEL	ACGIH TLV (1981)
CPD	boron oxide	15 mg/m ³	10 mg/m ³ (20 mg/m ³ STEL)
EOD, APC, E, CM	2-butoxyethanol (butyl cellosolve)	50 ppm - skin	25 ppm - skin (75 ppm - STEL)
S&I, L	n-butyl alcohol	100 ppm	50 ppm - C (skin)
S&I	sec-butyl alcohol	150 ppm	100 ppm (150 ppm STEL)
	n-butyl glycidyl ether (BGE)	50 ppm	25 ppm
CM	butyl mercaptan	10 ppm	0.5 ppm
L, EP, APC, BPD, CPD	cadmium fume	0.1 mg/m ³ 0.3 mg/m ³ - C	0.05 mg/m ³
HAP, BPD	cadmium dust	0.2 mg/m ³ 0.6 mg/m ³ - C	0.05 mg/m ³ (0.2 mg/m ³ STEL)
L	calcium oxide	5 mg/m ³	2 mg/m ³
FPD, E&HC	carbon disulfide	20 ppm 30 ppm - C	10 ppm - skin -----
APC, SUI	carbon tetra- chloride	10 ppm 25 ppm - C	5 ppm - skin 20 ppm - STEL
L, CPD EOD, APC	chlorine	1 ppm - <u>C</u>	1 ppm
	o-chloro benzylidene malononitrile (OCBM)	0.05 ppm	0.05 ppm - <u>skin</u> (0.05 ppm - C, NOIC*)
APC	chloroform	50 ppm	10 ppm (A2 - suspect CA)
	bis-chloromethyl ether	No exposure	0.001 ppm
	1-chloro-1-nitro- propane	20 ppm	2 ppm
	chloroprene	25 ppm - skin	10 ppm - skin

Indicate UCC Division(s)	Substance	OSHA 1910.1000 PEL	ACGIH TLV (1981)
L, EP, APC, S&I E&HC, PO	chromium, sol.chromic, chromous salts as Cr	0.5 mg/m ³	0.5 mg/m ³
L, EP, APC, HAP, CPD	chromium metal & insol. salts	1.0 mg/m ³	0.5 mg/m ³
L, EP, APC, HAP, BPD, CPD, E	chromates (Cr VI) and chromic acid	0.1 mg/m ³	0.05 mg/m ³
L, EP, CPD, E SUI, S&I	copper fume	0.1 mg/m ³	0.2 mg/m ³
FPD, CM	cotton dust	0.5 mg/m ³	0.2 mg/m ³ (0.6 mg/m ³ STEL)
	Crag ^R herbicide	15 mg/m ³	10 mg/m ³
SCP	cyclohexanone	50 ppm	25 ppm (100 ppm STEL)
	ethylene dibromide	20 ppm 30 ppm - C	No exposure, by any route. (Alb.)
	1,1-dichloroethane	100 ppm	200 ppm
EOG, EOD	ethylene dichloride	50 ppm 100 ppm - C	10 ppm 15 ppm - STEL
SUI	dichloroethyl ether	15 ppm - C (skin)	5 ppm - skin
L	dichlorofluoro- methane (R-21)	1000 ppm	10 ppm
	1,1-dichloro-1- nitroethane	10 ppm - C	2 ppm (10 ppm - STEL)
EOD, L SCP	diethylamine	25 ppm	10 ppm (25 ppm STEL)
	diglycidyl ether (DGE)	0.5 ppm - C	0.1 ppm
S&I, APC	diisobutyl ketone	50 ppm	25 ppm
	dimethyl sulfate	1 ppm - skin	0.1 ppm - skin

Indicate DCC Division(s)	Substance	OSHA 1910.1000 PEL	ACGIH TLV (1981)
SCP	dioxane	100 ppm - skin	25 ppm - skin
CM	epichlorhydrin	5 ppm - skin	2 ppm - skin (5 ppm STEL)
EOD, L, EP, CPD, E, CM	2-ethoxyethanol (cellosolve)	200 ppm - skin	50 ppm - skin (100 ppm STEL)
S&I, L, EP, CPD, E	2-ethoxyethyl acetate (cellosolve acetate)	100 ppm - skin	50 ppm - skin (100 ppm STEL)
CM, SC&P PO	ethyl acrylate	25 ppm - skin	5 ppm - skin (25 ppm STEL)
	ethylene chlorohy- drin	5 ppm - skin	1 ppm - C (skin)
	ethylene glycol dinitrate	0.2 ppm - C (skin)	0.02 ppm (skin) (0.05 ppm - NOIC*)
L, EOG, EOD, APC	ethylene oxide	50 ppm	10 ppm (5 ppm - NOIC*)
	ethyl mercaptan	10 ppm - C	0.5 ppm (2 ppm STEL)
CM	ethyl silicate	100 ppm	10 ppm (30 ppm STEL)
	ferbam	15 mg/m ³	10 mg/m ³ (20 mg/m ³ STEL)
L	fluorine	0.1 ppm	1 ppm (2 ppm STEL)
L, SUI	fluorotrichloro- methane (FC-11)	1000 ppm	1000 ppm (1000 ppm - C, NOIC*)
CM, APC, CPD, EOG S&I, SUI SC&P	formaldehyde	3 ppm	2 ppm - C
		5 ppm - C	(A2 - Suspect CA, NOIC*)
CPD	furfural	5 ppm - skin	2 ppm - skin (10 ppm - STEL)

Indicate UCC Division(s)	Substance	OSHA 1910.1000 PEL	ACGIH TLV (1981)
CPD, E	furfuryl alcohol	50 ppm	5 ppm - skin 10 ppm STEL (10 ppm -skin, NOIC*)
	glycidol (2,3-epoxy- 1-propanol)	50 ppm	25 ppm (100 ppm STEL)
APC, S&I	heptane (n-heptane)	500 ppm	400 ppm (500 ppm STEL)
	hexachloroethane	1 ppm - skin	1 ppm - skin (10 ppm -skin, NOIC*)
APC, CPD S&I, SUI	hexane (n-hexane)	500 ppm	100 ppm (50 ppm NOIC*)
L, E&HC	hydrazine	1 ppm - skin	0.1 ppm - skin (A2 - Suspect CA)
L, CPD	hydrogen cyanide	10 ppm - skin	10 ppm - C, skin
L, FPD, CPD, SUI	hydrogen sulfide	20 ppm - C	10 ppm (15 ppm STEL)
L, EP, APC, HAP, FPD, CPD	iron oxide fume	10 mg/m ³	5 mg/m ³ (10 mg/m ³ STEL)
S&I, APC CM	isobutyl alcohol	100 ppm	50 ppm
S&I, APC	isophorone	25 ppm	5 ppm - C
S&I, APC	isopropyl ether	500 ppm	250 ppm (310 ppm STEL)
L, EP, APC, BPD, M, CPD, E	lead, inorganic	0.05 mg/m ³	0.15 mg/m ³
	magnesium oxide fume	15 mg/m ³	10 mg/m ³
	malathion	15 mg/m ³	10 mg/m ³
L, BPD, CPD, E	mercury, inorganic	0.1 mg/m ³	0.05 mg/m ³ (0.15 mg/m ³ STEL)
S&I, APC	mesityl oxide	25 ppm	15 ppm (25 ppm STEL)
	methoxychlor	15 mg/m ³	10 mg/m ³

Indicate UCC Division(s)	Substance	OSHA 1910.1000 PEL	ACGIH TLV (1981)
E&HC, APC, L, BPD, M, CPD E&HC, S&I, CM, SC&P	Methyl alcohol	200 ppm	200 ppm - <u>skin</u>
S&I, SCP	methyl n-amyl ketone (2-heptanone)	100 ppm	50 ppm (100 ppm STEL)
L	methyl bromide	20 ppm - C, skin	5 ppm - skin (15 ppm STEL)
S&I	methyl n-butyl ketone (2-hexanone)	100 ppm	5 ppm
L, SUI, APC	methyl chloride	100 ppm 200 ppm - C	50 ppm 100 ppm STEL
	methylcyclohexane	500 ppm	400 ppm (500 ppm STEL)
	methylcyclohexanol	100 ppm	50 ppm (75 ppm STEL)
	o-methylcyclo- hexanone	100 ppm - skin	50 ppm - skin (75 ppm STEL)
L, APC, FPD, CPD, E, SUI	methylene chloride	500 ppm 1000 ppm - C	100 ppm 500 ppm STEL
	4,4' - methylene bis (2-chloroaniline)	standard revoked	0.02 ppm - skin (A2-Suspect CA)
	methyl iodide	5 ppm - skin	2 ppm - skin, 5 ppm STEL (A2 - suspect CA)
S&I, APC, BPD, CM	methyl isobutyl ketone (hexone)	100 ppm	50 ppm (75 ppm STEL)
L, APC	methyl mercaptan	10 ppm - C	0.5 ppm
S&I	alpha-methyl styrene	100 ppm	50 ppm (100 ppm STEL)
M	molybdenum, insoluble compds, as Mo	15 mg/m ³	10 mg/m ³
	nickel carbonyl, as Ni	0.001 ppm	0.05 ppm

Indicate UCC Division(s)	Substance	OSHA 1910.1000 PEL	ACGIH TLV (1981)
L, EP, HAP, CPD, E	Nickel, soluble compds, as Ni	1 mg/m ³	0.1 mg/m ³ (0.3 mg/m ³ STEL)
L, M, CPD, E	nitrogen dioxide	5 ppm - C	3 ppm (5 ppm STEL)
FPD	2-nitropropane	25 ppm	25 ppm - C (A2 - suspect CA) (10 ppm - NOIC*)
APC	octane	500 ppm	300 ppm (375 ppm STEL)
	paraquat	0.5 mg/m ³	0.1 mg/m ³ , respirable
CM, E&HC	pentane	1000 ppm	600 ppm (750 ppm STEL)
BPD, E SUI	perchloroethylene	100 ppm 200 ppm - C	100 ppm-skin-(50 ppm-NOIC* 150 ppm STEL)
	phthalic anhydride	2 ppm	1 ppm (4 ppm STEL)
	beta-propiolactone	No exposure	0.5 ppm (A2-Suspect CA)
S&I, FPD	propyl alcohol	200 ppm	200 ppm - <u>skin</u>
L, SUI, APC, SCP	propylene oxide	100 ppm	20 ppm
	ronnel	15 mg/m ³	10 mg/m ³
L, APC, FPD, E EOD, SUI, CM	sodium hydroxide	2 mg/m ³	2 mg/m ³ - C
L, CPD	stoddard solvent	500 ppm	100 ppm
SCP, APC	styrene	100 ppm 200 ppm - C	50 ppm 100 ppm - STEL
L, CPD S&I	sulfur dioxide	5 ppm	2 ppm (5 ppm STEL)
	terphenyls	1 ppm - C	0.5 ppm - C
	tetraethyl lead, as Pb	0.075 mg/m ³ - skin	0.100 mg/m ³ - skin
	tetramethyl lead, as Pb	0.075 mg/m ³ - skin	0.150 mg/m ³ - skin

Indicate UCC Division(s)	Substance	OSHA 1910.1000 PEL	ACGIH TLV (1981)
E&HC, L, EP, FPD, BPD, CPD, E, S&I	toluene	200 ppm 300 ppm - C	100 ppm - skin 150 ppm - STEL
SUI, EOD	tributyl phosphate	5 mg/m ³	2.5 mg/m ³ (5 mg/m ³ STEL)
BPD, CPD	trichloroethylene	100 ppm 200 ppm - C	100 ppm (50 ppm - NOIC*) 150 ppm - STEL
APC, FPD, HAP	titanium dioxide, as Ti	15 mg/m ³	10 mg/m ³ (20 mg/m ³ STEL)
EOD, L, APC	triethylamine	25 ppm	25 ppm (10 ppm - NOIC*)
	2,4,6-trinitrotol- uene	1.5 mg/m ³ - skin	0.5 mg/m ³
M	uranium soluble compds insoluble compds	0.05 mg/m ³ 0.25 mg/m ³	0.2 mg/m ³ 0.2 mg/m ³
M	vanadium (V ₂ O ₅) as V dust	0.5 mg/m ³	0.5 mg/m ³ (0.05 mg/m ³ -NOIC*)
	fume	0.1 mg/m ³	0.05 mg/m ³ - C (0.05 mg/m ³ -NOIC*)
CM	vinyl chloride	1 ppm 5 ppm - C	5 ppm
SUI	vinyl toluene	100 ppm	50 ppm (100 ppm STEL)
L, CPD	VM & P naphtha	500 ppm	300 ppm (400 ppm STEL)
	xylidine	5 ppm - skin	5 ppm-skin (2 ppm - skin, NOIC*)
M, CPD, APC	coal dust, respirable fraction (less than 5% quartz)	2.4 mg/m ³	2 mg/m ³

ACGIH (1981) LISTED SUBSTANCES THAT ARE NOT IN OSHA 1910.1000

Indicate UCC Division(s)	Substance	ACGIH TLV
	Abate	10 mg/m ³ (20 mg/m ³ STEL)
	Acetylsalicylic Acid (aspirin)	5 mg/m ³
CM, SC&P	Acrylic Acid	10 ppm
L, HAP, CPD, E SUI, SC&P, E&HC	Aluminum Metal & Oxide	10 mg/m ³ (20 mg/m ³ STEL)
	Aluminum Pyro Powders	5 mg/m ³
L, EP	Aluminum Welding Fumes	5 mg/m ³
APC, HAP, SCP, EOD S&I	Aluminum Soluble Salts	2 mg/m ³
	Aluminum, Alkyls	2 mg/m ³
APC	3-Amino-1,2,4-Triazole	No TLV (A2-Suspect CA)
E, SCP, EOD, S&I	Ammonium Chloride-Fume	10 mg/m ³
BPD, CPD	Asphalt (Petroleum) Fumes	5 mg/m ³ (10 mg/m ³ STEL)
APC	Atrazine	10 mg/m ³
	Baygon (Propoxur)	0.5 mg/m ³ (2 mg/m ³ STEL)
	Benomyl	10 mg/m ³ (15 mg/m ³ STEL)
APC, CPD, E&HC	Benzo(a)Pyrene	No TLV (A2-Suspect CA)
	Bismuth Telluride	10 mg/m ³ (20 mg/m ³ STEL)
	Bismuth Telluride, Selenium-Doped	5 mg/m ³ (10 mg/m ³ STEL)
APC, HAP	Borates, Tetra, Sodium Salts	
	Anhydrous	1 mg/m ³
	Decahydrate	5 mg/m ³
	Pentahydrate	1 mg/m ³
	Boron Tribromide	1 ppm (3 ppm STEL)
APC	Bromacil	1 ppm (2 ppm STEL)
L	Bromine Pentafluoride	0.1 ppm (0.3 ppm STEL)

ACGIH (1981) LISTED SUBSTANCES THAT ARE NOT IN OSHA 1910.1000

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Indicate UCC Division(s)	Substance	ACGIH TLV
L, E&HC, CM	Butane	800 ppm
CM	Butyl Acrylate	10 ppm
	n-Butyl Lactate	5 ppm
CM	o-sec-Butylphenol	5 ppm-Skin
	Cadmium Oxide Production	No TLV (A2-Suspect CA)
PO	Calcium Carbonate	10 mg/m ³
	Calcium Cyanamide	0.5 mg/m ³ (1 mg/m ³ STEL)
SUI	Calcium Hydroxide	5 mg/m ³
SC&P	Caprolactam	
	Dust	1 mg/m ³ (3 mg/m ³ STEL)
	Vapor	5 ppm (10 ppm STEL)
	Captafol (Difolatan R)	0.1 mg/m ³ -Skin
APC	Captan	5 mg/m ³ (15 mg/m ³ STEL)
	Carbofuran (Furadan R)	0.1 mg/m ³
	Carbon Tetrabromide	0.1 ppm (0.3 ppm STEL)
	Carbonyl Fluoride	2 ppm (5 ppm STEL)
	Catechol (Pyrocatechol)	5 ppm
BPD, CM	Cellulose (Paper Fiber)	10 mg/m ³ (20 mg/m ³ STEL)
EOG	Cesium Hydroxide	2 mg/m ³
	Chloroacetyl Chloride	0.05 ppm
L, SUI	Chlorodifluoromethane (FC-22)	1000 ppm (1250 ppm STEL)
L	Chloropentafluoroethane	1000 ppm
	o-Chlorostyrene	50 ppm (75 ppm STEL)
	o-Chlorotoluene	50 ppm-Skin (75 ppm STEL)

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ACGIH (1981) LISTED SUBSTANCES THAT ARE NOT IN OSHA 1910.1000

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Indicate UCC Division(s)	Substance	ACGIH TLV
	2-Chloro-6-(Trichloromethyl) Pyridine	10 mg/m ³ (20 mg/m ³ STEL)
	Chlorpyrifos (Dursban R)	0.2 mg/m ³ (0.6 mg/m ³ STEL)
CPD	Chrysene	No TLV (A2-Suspect CA)
	Clopidol (Coyden R)	10 mg/m ³ (20 mg/m ³ STEL)
	Crufomate R	5 mg/m ³ (20 mg/m ³ STEL)
	Cyanamide	2 mg/m ³
L	Cyanogen	10 ppm
	Cyanogen Chloride	0.3 ppm
EOD	Cyclohexylamine	10 ppm-Skin
	Cyclonite	1.5 mg/m ³ -Skin
APC	Diazinon	0.1 mg/m ³ -Skin (0.3 mg/m ³ STEL)
	2-n-Dibutylaminoethanol	2 ppm-Skin (4 ppm STEL)
	Dichloroacetylene	0.1 ppm-C
	Dichloropropene	1 ppm-Skin
	2,2-Dichloropropionic Acid	1 ppm
	Dicrotophos (Bidrin R)	0.25 mg/m ³ -Skin
SUI, APC, SC&P	Dicyclopentadiene	5 ppm
	Dicyclopentadienyl Iron	10 mg/m ³ (20 mg/m ³ STEL)
EOD, APC, S&I	Diethanolamine	3 ppm
EOD, APC, SUI	Diethylene Triamine	1 ppm-Skin
SCP	Diethyl Ketone	200 ppm
S&I	Diethyl Phthalate	5 mg/m ³

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ACGIH (1981) LISTED SUBSTANCES THAT ARE NOT IN OSHA 1910.1000

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Indicate UCC Division(s)	Substance	ACGIH TLV
APC	Dimethyl Carbamyl Chloride	No TLV (A2-Suspect CA)
	3,5-Dinitro-o-Toluumide	5 mg/m ³ (10 mg/m ³ STEL)
	Dioxathion (Delnav R)	0.2 mg/m ³ -Skin
	Diphenylamine	10 mg/m ³ (20 mg/m ³)
	Dipropyl Ketone	50 ppm
APC	Diquat	0.5 mg/m ³ (1 mg/m ³ STEL)
	Disulfiram	2 mg/m ³ (5 mg/m ³ STEL)
	Disulfoton (Disyston R)	0.1 mg/m ³ (0.3 mg/m ³ STEL)
CM, PO	2,6,-di-t-Butyl-p-Cresol	10 mg/m ³ (20 mg/m ³ STEL)
	Diuron	10 mg/m ³
	Divinyl Benzene	10 ppm
	Dyfonate	0.1 mg/m ³ -Skin
L, CPD, E	Emery	10 mg/m ³
	Endosulfan (Thiodan R)	0.1 mg/m ³ -Skin (0.3 mg/m ³ STEL)
	Ethion (Nialate R)	0.4 mg/m ³ -Skin
EOG, HAP, BPD, CPD, E	Ethylene Glycol Particulate Vapor	10 mg/m ³ (20 mg/m ³ STEL) 50 ppm - C
SUI	Ethylidine Norbornene	5 ppm - C
	Fensulfothion (Desanit)	0.1 mg/m ³
	Fenthion	0.1 mg/m ³
	Formamide	20 ppm (30 ppm STEL)
APC, CPD, E, E&HC, S&I	Gasoline	300 ppm (NOIC*)

*NOIC - Notice of Intended Change

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ACGIH (1981) LISTED SUBSTANCES THAT ARE NOT IN OSHA 1910.1000

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Indicate UCC Division(s)	Substance	ACGIH TLV
	Germanium Tetrahydride	0.2 ppm (0.6 ppm STEL)
FPD, HAP, EP, CPD	Glass, Fibrous or Dust	10 mg/m ³
SCP, APC, CM	Glutaraldehyde	0.2 ppm - C
FPD, SUI	Glycerin Mist	10 mg/m ³
CPD, L, FPD, HAP, BPD	Graphite, Synthetic	10 mg/m ³
APC	Gypsum	10 mg/m ³
	Hexachlorocyclopentadiene	0.01 ppm (0.03 ppm STEL)
	Hexafluoroacetone	0.1 ppm (0.3 ppm STEL)
	Hexamethyl Phosphoramide	A2 (Skin)-Suspect CA
S&I	Hexylene Glycol	25 ppm - C
	Hydrogenated Terphenyls	0.5 ppm
CM	2-Hydroxypropyl Acrylate	0.5 ppm - Skin
	Indene	10 ppm (15 ppm STEL)
	Indium & Compounds	0.1 mg/m ³ (0.3 mg/m ³ STEL)
	Iodoform	0.6 ppm (1 ppm STEL)
	Iron Pentacarbonyl, as Fe	0.01 ppm (0.1 ppm - NOIC*)
SUI	Iron Salts, Soluble, as Fe	1 mg/m ³ (2 mg/m ³ STEL)
	Isophorone Diisocyanate	0.01 ppm - Skin
CM	Isopropoxyethanol	25 ppm (75 ppm STEL)
	n-Isopropyl Aniline	2 ppm-Skin (5 ppm STEL)
EP, CPD, CM, SUI, APC	Kaolin	10 mg/m ³ (20 mg/m ³ STEL)
APC	Limestone	10 mg/m ³ (20 mg/m ³ STEL)
	Magnesite	10 mg/m ³ (20 mg/m ³ STEL)

*NOIC - Notice of Intended Change

DE 000690

ACGIH (1981) LISTED SUBSTANCES THAT ARE NOT IN OSHA 1910.1000

- 6 -

Indicate UCC Division(s)	Substance	ACGIH TLV
L, EP, APC	Manganese Fume (as Mn)	1 mg/m ³ (3 mg/m ³ STEL)
	Manganese Cyclopentadienyl Tricarbonyl, as Mn)	0.1 mg/m ³ -Skin (0.3 mg/m ³ STEL)
	Manganese Tetroxide	1 mg/m ³
CM	Methacrylic Acid	20 ppm
	Methomyl (Lannate R)	2.5 mg/m ³ -Skin
	Methylacrylonitrile	1 ppm-Skin (2 ppm STEL)
	Methyl 2-Cyanoacrylate	2 ppm (4 ppm STEL)
	Methyl Cyclopentadienyl Manganese Tricarbonyl (as Mn)	0.2 mg/m ³ -Skin (0.6 mg/m ³ STEL)
	Methyl Demeton	0.5 mg/m ³ -Skin (1.5 mg/m ³ STEL)
	Methylene bis (4-Cyclohexylisocyanate)	0.01 ppm-C
	4,4'-Methylene Dianiline	0.1 ppm-Skin (0.5 ppm STEL)
	Methyl Ethyl Ketone Peroxide	0.2 ppm-C
S&I	Methyl Isoamyl Ketone	100 ppm (150 ppm STEL) (50 ppm - NOIC*)
SCP, BPD	Methyl Isopropyl Ketone	200 ppm
	Methyl Silicate	1 ppm (5 ppm STEL)
	Monocrotophos (Azodrin R)	0.25 mg/m ³

*NOIC - Notice of Intended Change

DE 000691

ACGIH (1981) LISTED SUBSTANCES THAT ARE NOT IN OSHA 1910.1000

- 7 -

Indicate UCC Division(s)	Substance	ACGIH TLV
CM	Nonane	200 ppm (250 ppm STEL)
CPD, EOD, SC&P	Paraffin Wax Fume	2 mg/m ³ (6 mg/m ³ STEL)
	Pentaerythritol	10 mg/m ³ (20 mg/m ³ STEL)
CM	Phenothiazine	5 mg/m ³ -Skin (10 mg/m ³ STEL)
	n-Phenyl-beta-Naphthylamine	No TLV (A2-Suspect CA)
	Phenyl Mercaptan	0.5 ppm
	Phenyl Phosphine	0.05 ppm-C
	Phorate (Thimet R)	0.05 mg/m ³ - Skin
	m-Phthalodinitrile	5 mg/m ³
	Picloram (Tordon R)	10 mg/m ³ (20 mg/m ³ STEL)
	Plaster of Paris	10 mg/m ³ (20 mg/m ³ STEL)
EP, E, SUI, S&I	Platinum Metal	1 mg/m ³
APC, BPD, E, PO, EOD	Potassium Hydroxide	2 mg/m ³ - C
	Propane Sultone	No TLV (A2-Suspect CA)
	Propargyl Alcohol	1 ppm-Skin (3 ppm STEL)
S&I, CM, E&HC	Propionic Acid	10 ppm
	Propylene Glycol Dinitrate (PGDN)	0.02 ppm-Skin (0.05 ppm - NOIC*)
SCP, E, SUI	Propylene Glycol Monomethyl ether	100 ppm (150 ppm STEL)
	Resorcinol	10 ppm (20 ppm STEL)
S&I	Rhodium, Soluble Salts, as Rh	0.001 mg/m ³ (0.003 mg/m ³ STEL)
CPD, E	Rosin Core Solder Pyrolysis Products, as Formaldehyde	0.1 mg/m ³ (0.3 mg/m ³ STEL)

*NOIC - Notice of Intended Change

DE 000692

ACGIH (1981) LISTED SUBSTANCES THAT ARE NOT IN OSHA 1910.1000

- 8 -

Indicate UCC Division(s)	Substance	ACGIH TLV
--	Rouge	10 mg/m ³ (20 mg/m ³ STEL)
E, SUI	Silicon	10 mg/m ³ (20 mg/m ³ STEL)
CPD	Silicon Carbide	10 mg/m ³ (20 mg/m ³ STEL)
L	Silicon Tetrahydride (Silane)	0.5 ppm (1 ppm STEL) (5 ppm - NOIC*)
	Sodium Azide	0.3 mg/m ³ -C
CM, S&I	Sodium Bisulfite	5 mg/m ³
CM	Sodium Metabisulfite	5 mg/m ³
FPD, BPD	Starch	10 mg/m ³ (20 mg/m ³ STEL)
	Subtilisins (Proteolytic Enzymes)	0.00006 mg/m ³
SUI, APC	Sucrose	10 mg/m ³ (20 mg/m ³ STEL)
L	Sulfur Tetrafluoride	0.1 ppm (0.3 ppm STEL)
CM	Tetrasodium Pyrophosphate	5 mg/m ³
	4,4'-Thiobis (6-t-Butyl- m-Cresol)	10 mg/m ³ (20 mg/m ³ STEL)
	Thioglycolic Acid	1 ppm
	Trichloroacetic Acid	1 ppm
	1, 2, 4 - Trichlorobenzene	5 ppm
	Tricyclohexyl Tin Hydroxide (Plictran R)	5 mg/m ³ (10 mg/m ³ STEL)
CPD	Trimellitic Anhydride	0.005 ppm
	Trimethyl benzene	25 ppm (35 ppm STEL)

*NOIC - Notice of Intended Change

DE 000693

ACGIH (1981) LISTED SUBSTANCES THAT ARE NOT IN OSHA 1910.1000

- 9 -

Indicate UCC Division(s)	Substance	ACGIH TLV
	Trimethyl Phosphite	0.5 ppm (2 ppm NOIC*)
L, APC, SUI, APC	Trimethylamine	(10 ppm - NOIC*)
	Triphenyl Amine	5 mg/m ³
EP, M	Tungsten & Compounds, Soluble	1 mg/m ³
	Insoluble	5 mg/m ³
S&I	Valeraldehyde	50 ppm
CM, HAP, APC, PO	Vinyl Acetate	10 ppm (20 ppm STEL)
L	Vinyl Bromide	5 ppm (A2-Suspect CA)
SCP	Vinyl Cyclohexene Dioxide	10 ppm
CM	Vinylidene Chloride	10 ppm (20 ppm STEL)
All Divisions	Welding Fumes (not otherwise classified)	5 mg/m ³
L, CPD, E, CM	Wood dust	
	Hard Woods (such as Beech, Oak)	1 mg/m ³
	Soft Wood	5 mg/m ³ (10 mg/m ³ STEL)
	m-Xylene alpha, alpha'-Diamine	0.1 mg/m ³ -C
PO	Zinc Stearate	10 mg/m ³ (20 mg/m ³ STEL)
HAP, FPD, CPD, E	Mineral Wool Fiber	10 mg/m ³

*NOIC - Notice of Intended Change

DE 000694

INTERNAL CORRESPONDENCE

UNION CARBIDE CORPORATION
CHEMICALS AND PLASTICS

P. O. BOX 3370, BROWNSVILLE, TEXAS 78520

To (Name)	Operating Department Heads (4)	Date	June 23, 1975
Company	Ms. Rita Murphy	Originating Dept.	
Location	K. G. Townsend/M. Gutierrez	Answering letter date	
	J. L. Garcia	Subject	Proposed Toxic Hazardous
	E. O. Davis		Substances Legislation -
	A. G. Stephens		OSHA - NIOSH, EPA
Copy to	A. L. Barefoot		Affecting Brownsville
	C. M. Partridge		
	R. C. Glock		
	C. A. Keil		
	W. W. McManus		
	Shift Superintendents (2)		
	S. J. Footer		

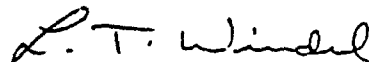
This document summarizes various government lists of chemicals that have been identified as hazardous substances or are scheduled for examination or regulations. Several have appeared as proposed regulatory materials in recent issues of the Federal Register.

A list of the top 50 chemicals by usage is included in the belief that some of these will be targeted for investigation.

Listed are those compounds which are used or produced at Brownsville. Although there has been some delay in proposal and formal enactment of regulations by the responsible agencies this should not be construed to indicate that regulations are not forthcoming.

Please give this document wide circulation and careful review. I will keep you informed of the proposed legislation as it appears.

Very truly yours,



L. T. Windel

LTW/gr

Attachments

DE 000695

400 CHEMICALS (Continued)

<u>PRODUCT</u>	<u>DATE EXPECTED</u>	<u>PRODUCTION, MAINTENANCE & LAB</u>
Nickel and Salts	Oct. 75	M, L
Iodine	Nov. 75	L
Carbon Black (Wacker)	Dec. 75	P
Carbon Dioxide	Dec. 75	P
Carbon Disulfide	Dec. 75	L
Silica including Perlite	Dec. 75	P, M
Hydrogen Peroxide 90%	Feb. 76	L
Oil Mist, Mineral	Feb. 76	P, M
Methyl Formate	Mar. 76	P, L
Carbon Tetrachloride	Mar. 76	L
Silica, Crystalline	Mar. 76	M, P
Chlorine	April 76	
Phosphoric Acid	April 76	P
Ammonia	May 76	P, L
Carbon Monoxide	May 76	P, L, M
Copper Fume	May 76	M
Toluene	May 76	P, M, L
Iron Oxide Fume	June 76	M
Sodium Hydroxide	July 76	P, M, L
Stoddard Solvent (Varsol)	July 76	M

DE 000699

CHEMICALS MENTIONED IN SENATE-HOUSE TESTIMONY RELATING TO
THE TOXIC SUBSTANCES CONTROL ACT (BROWNSVILLE PRODUCTS)

Asbestos	Mercury
Boiler Cleaning Products	Nickel
Chromium	Phosphates
Carbonates	Polyvinyl chloride
Chemical Reagents	Silica
Chlorinated Hydrocarbons	Caustic Soda
Chlorine	Freon propellants
Detergents	Sodium Tripolyphosphates
Food Additives	

CHEMICALS LISTED BY EPA FOR EXAMINATION AS CANDIDATES FOR
DESIGNATION AS TOXIC WATER POLLUTANTS (BROWNSVILLE PRODUCTS)

Chromium
Asbestos
Lead
Nickel

*TOP 50 PRODUCTS BASED ON 1973 PRODUCTION

(USED AT BROWNSVILLE)

1. Sulfuric Acid
2. Oxygen
3. Ammonia
5. Sodium Hydroxide
6. Chlorine
8. Sodium Carbonate
11. Phosphoric Acid
15. Urea
17. Toluene
23. Hydrochloric Acid
28. Ethylene Glycol
30. Carbon Dioxide
34. Acetic Acid
40. Acetone
41. Ethanol
45. Acetic Anhydride
49. Acetaldehyde

* Regulations will most likely be promulgated on the "top 50" initially by the agencies.

DE 000701

• **Cross-references**—Parts of the standard refer to other OSHA standards that have a bearing on MEK operations. For example, MEK dip tank operations must meet the requirements of 1910.108—"Dip tanks containing flammable or combustible liquids"—and 1910.94(d)—"Ventilation of open surface tanks." Other OSHA standards require the employer to classify flammable or explosive materials and treat them accordingly. The MEK standard gives the correct classifications for MEK and refers the employer to the appropriate standard.

• **Appendix**—Unlike the standard itself, the recommendations in the three appendices are not legally binding but intended as a concise source of information on MEK. The "Safety Data Sheet," geared to employees, explains in simple language the hazards associated with MEK, emergency

first-aid procedures, and safe methods of working around MEK. The "Technical Guidelines" list MEK's chemical properties, considerable data on its fire and explosion hazards, and details of how to clean up spills and take air samples. The "Medical Surveillance Guidelines," intended for physicians, describe the symptoms of MEK over-exposure and their treatment and explain why some conditions, such as kidney or chronic lung disease, should be watched carefully.

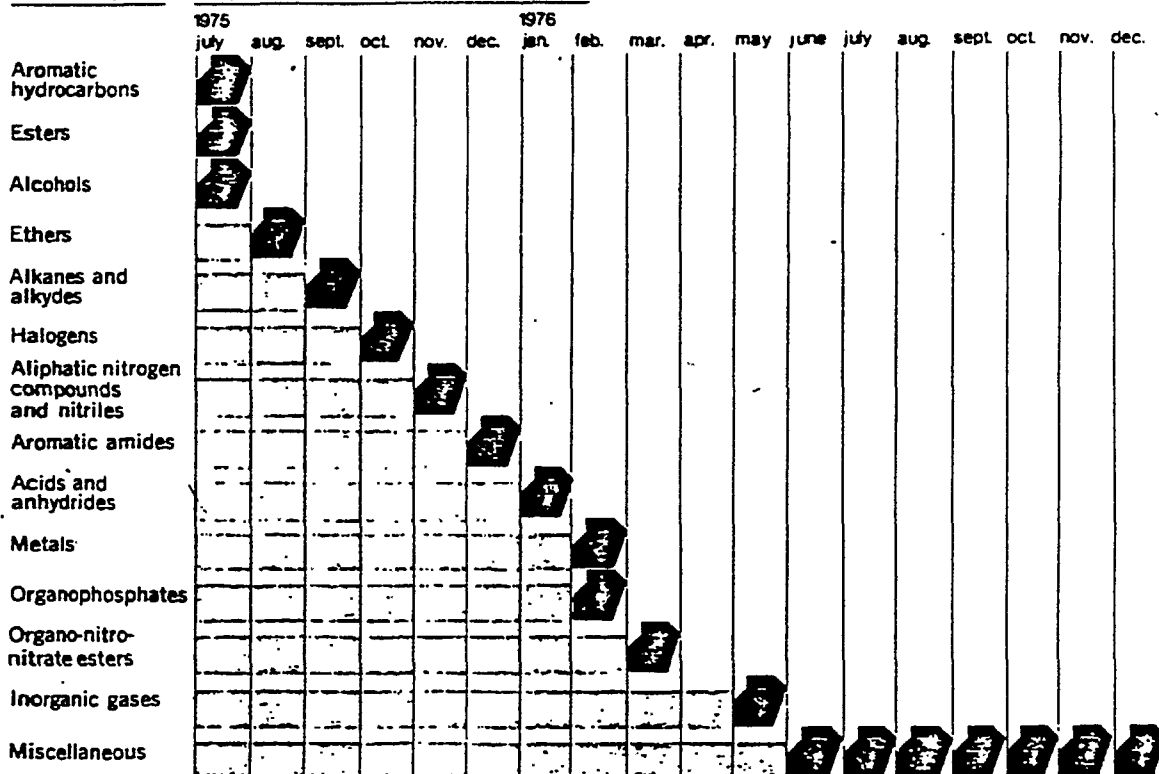
Goodbye Columbus

"Sounds beautiful on paper," the skeptical OSHA-watcher might say, "But what's to guarantee that everyone of these 400 standards is going to be well-written, not just a hurry-up job?"

Standards production line

Tentative schedule for other packages in the standards completion project:

Chemical group Proposal to appear in Federal Register





INTERNAL CORRESPONDENCE

CHEMICALS AND PLASTICS

P. O. BOX 8361, SOUTH CHARLESTON, WEST VIRGINIA 25303

To (Name) Mr. M. R. Huffman
Division 3005-2
Location TECHNICAL CENTER

Date January 23, 1980
Originating Dept. Medical/Toxicology

Copy to Dr. W. C. Kuryla - 511
Mr. W. E. Whitehurst - 511

Subject

Dear Mr. Huffman:

Attached is a list of all the substances for which I could find C/P standards or guidelines. I have also included the ACGIH and NIOSH or OSHA standards for each when possible. The column at the far right indicates if a difference exists between the C/P standard and the ACGIH standard for each substance as you requested.

I hope this list will be helpful to you.

Sincerely,

Shirley D. Conner
Shirley D. Conner

SDC/ap

Attachment

*Bob, here is the list of hazardous chemicals
that I found. I hope it helps. Let me
know if you need more. I will make
a list of the chemicals and by your
request.*

DE 000703

SUBSTANCE	ACGIH TLV TWA	NIOSH PROPOSAL OR OSHA STANDARD *	C/P STANDARD OR GUIDELINE		C/P IS DIFFERENT THAN ACGIH
			Ceiling	8 Hr TWA	
2-Acetylaminofluorene (1)	---	NE (c)	NE	NE	
Acrylamide (6)	0.3 mg/H ³ (7)	0.1 ppm TWA (c) (a)		0.1 ppm	
Acrylonitrile (2)	NE (5)	2 ppm TWA (c) 14 ppm (a)	10 ppm	2	Yes
4-Aminodiphenyl (1)	NE (5)	NE (c)		NE	
Aniline (2)	2 ppm (5)	5 ppm TWA	5 ppm	5	Yes
Asbestos (1)	5 fibers/cc > 5 µm long	2 fibers/cc > 5 µm long (c)	Same as OSHA		Yes
Benzene (2)	10 ppm	1 ppm ceiling/1hr (a) 10 ppm TWA (c)	5 ppm	1 NS00C	Yes
Benzidine (1)	NE	NE (c)		NE	
Benzidine-derived Dyes (1)	---	---		NE	
Bis-2-Chloroethyl Ether (1)	5 ppm	15 ppm ceiling (c)		0.1 ppm	DE 000704
Bis-2-Chloroethyl-2-Naphthylamine (1)				NE	
Bis-Chloromethyl Ether (1)	.001 ppm	NE (c)		NE	Yes

DE 000705

18-Crown-6 Ether (9)

Di-Sec-Butoxyacetophenone (1)

SUBSTANCE	ACGIH TLV TWA	NIOSH PROPOSAL OR OSHA STANDARD*	C/P STANDARD OR GUIDELINE		C/P IS DIFFERENT THAN ACGIH
			Ceiling	8 Hr TWA	
3,3-Dichlorobenzidine ⁽¹⁾ (and Salts)	NE	NE (c)		NE	
Dichloroethyl Ether (CHLOREX) ⁽⁶⁾	5 ppm	15 ppm ceiling		0.05 ppm	Yes
Diethyl Sulfate ⁽¹⁾	---	---	NSOOC	1 ppm	
Diisopropyl Sulfate ⁽¹⁾	---	---	NSOOC	1 ppm	
Dimethylacetamide ⁽²⁾	10 ppm	10 ppm	10 ppm NSC	10 NSC	
Dimethylaminoazobenzene ⁽¹⁾	5 ppm	NE (c)		NE	Yes
Dimethylaminopropionitrile ⁽⁶⁾		ME		NSOOC	
Dimethylformamide ⁽²⁾	10 ppm	10 ppm	10 ppm NSC	10 NSC	
Dimethyl Sulfate ⁽¹⁾	0.1 ppm	1 ppm (c)	NSOOC	0.1 ppm	
Dimethyl Sulfoxide ⁽²⁾		NS	10 ppm NSC	10 NSC	
1,4-Dioxane ⁽¹⁾	25 ppm	1 ppm ceiling/30 min(a) 100 ppm TWA (c)	NSOOC	50 ppm	Yes
Dioxine ⁽²⁾		NE	NE	NE	

SUBSTANCE	ACGIH TLV TWA	NIOSH PROPOSAL OR OSHA STANDARD*	C/P STANDARD OR GUIDELINE		C/P IS DIFFERENT THAN ACGIH
			Ceiling	8 Hr TWA	
Epichlorohydrin (1)	5 ppm (2 ppm ⁽⁵⁾)	2 mg/m ³ TWA (a) 5 ppm TWA (c)		0.5 ppm	Yes
Epoxy Resin ERL 2774 (1)	---	---	NS00C	10 ppm	
Epoxy Resin ERL 4205 (1)	---	---	NS00C	10 ppm	
Epoxy Resin ERL 4206 (1)	10 ppm	---	NS00C	10 ppm	
Epoxy Resin ERL 4234 (1)	---	---	NS00C	10 ppm	
Ethyl Acrylate (6)	5 ppm	25 ppm TWA (c)		5 ppm	
Ethylene Dibromide (1)	NE	1 mg/m ³ ceiling/15 min (a)		0.1 ppm	Yes
Ethylene Dichloride (6)	10 ppm	1 ppm TWA (a) 50 ppm TWA (c)		5 ppm	Yes
Ethyleneimine (1)	0.5 ppm	NE (c)		NE	Yes
Ethylene Oxide (8)		50 ppm (c)		10 ppm	
Ethylene Thiourea (2)	---	NS (c) ME (a)	NE	NE	
2-Ethylhexyl Acrylate (1)	---	---		5 ppm	

SUBSTANCE	ACGIH TLV TWA	NIOSH PROPOSAL OR OSHA STANDARD*	C/P STANDARD OR GUIDELINE		C/P IS DIFFERENT THAN ACGIH
			Ceiling	8 Hr TWA	
"Ethyl-Oils" (6) (by-product fraction from Ethanol process)		---		ME	
Fluorocarbon 22 (2)		1000 ppm	1000 ppm	1000	
Formaldehyde (6)	2 ppm	1 ppm ceiling/30 min(a) 3 ppm TWA (c)		2 ppm	
Formamide (2)	20 ppm	20 ppm	20 ppm NSC	20 NSC	
Glycidoxy Propyl Trimethoxy Silane (6)		---		ME	
Heating Oils (6)		---		NSC	
Hexafluoroacetone (2)	0.1 ppm	0.1 ppm	0.1 ppm NSC	0.1 NSC	
Hydrogen Sulfide (2)	10 ppm	20 ppm ceiling (c) 10 ppm ceiling/10 min(a)	10 ppm	10	
Hydrolube (6)		---	NS00C		
Lead (2)	0.15 mg/m ³	0.2 mg/m ³ TWA (c) ≤100 µg/m ³ (a)	50 µg/m ³		Yes
Mercury, Alkyl Cpds (2)	.001 ppm	0.1 mg/m ³ ceiling (c) .05 mg/m ³ TWA (a)	NE	NE	Yes
Methylchloromethyl Ether (1)	---	NE (c)		NE	

SUBSTANCE	ACGIH TLV TWA	NIOSH PROPOSAL OR OSHA STANDARD*	C/P STANDARD OR GUIDELINE		C/P IS DIFFERENT THAN ACGIH
			Ceiling	8 Hr TWA	
Methylenedianiline ⁽¹⁾	---	---	NS00C		
α -Naphthylamine ⁽¹⁾	---	NE (c)		NE	
β -Naphthylamine ⁽¹⁾	NE	NE (c)		NE	
Neopentyl Glycol Diacrylate ⁽¹⁾	---	---	NS00C		
Nickel, Inorganic ⁽¹⁾	1 mg/m ³	1 mg/m ³ TWA (c) 15 μ g/m ³ TWA (a)		1 mg/m ³	
Nitric Oxide ⁽²⁾	25 ppm	25 ppm TWA (c)	25 ppm	25	
Nitrobenzene ⁽²⁾	1 ppm	1 ppm	1 ppm	1	
4-Nitrodiphenyl ⁽¹⁾	NE	NE (c)		NE	
2-Nitropropane ⁽¹⁾	25 ppm	NE (b)		1 ppm	Yes
Nitrosoamines ⁽¹⁾	---	---	NS00C		
N-Nitrosodimethylamine ⁽¹⁾	NE	NE (c)	NE	NE	
Peracetic Acid ⁽⁶⁾		---	NS00C		

SUBSTANCE	ACGIH TLV TWA	NIOSH PROPOSAL OR OSHA STANDARD*	C/P STANDARD OR GUIDELINE		C/P IS DIFFERENT THAN ACGIH
			Ceiling	8 Hr TWA	
Perchloroethylene (1)&(2) (Tetrachloroethylene)	100 ppm	50 ppm (a) 100 ppm (c)	15 ppm	10	Yes
Phenyl-Alpha-Naphthylamine		NE		ME	
Phenyl-Beta-Naphthylamine	NE	---		ME	Yes
Polychlorinated Biphenyls (1)	1 mg/m ³ 42% CI 0.5 mg/m ³ 54% CI	1 µg/m ³ TWA (a) Same as ACGIH (c)	3 µg/m ³ NSC	1 µg/m ³ NSC	Yes
Polycyclic Aromatic Hydrocarbons (2) (Fuel Oil Residues)	200 µg/m ³	100 µg/m ³ (a) (1)	600 µg/m ³ NSC	200 µg/m ³	
B-Propiolactone (1)	NE	NE		NE	
Radiation (2)		(3)	---	0.5 RADS	
Styrene (6)	50 ppm (7)	100 ppm TWA (c)		50 ppm	
Styrene Oxide (6)		---	NS00C		
Tetramethylthiourea (2)		---	NE	NE	
Tetramethylurea (2)		---	NE	NE	
Toluene-2,4-Diamine (1)	---	---	NS00C	0.1 ppm	

[illegible]

Footnotes:

- (1) C&P Safety and Health Team Listing of Potential Carcinogens, 9/25/79.
- (2) "List of Risks That May Have Adverse Effects on The Fetus," E. Q. Hull, M.D., 3/5/79.
- (3) National Council of Radiation Protection Standard 53:05 RADS for X-Ray, gamma total during pregnancy.
- (4) AE - Avoid Exposure
NE - No Exposure
NS - No Standard
NSC - No Skin Contact
NSOOC - No Skin or Oral Contact
ME - Minimize Exposure, E. Q. Hull, M.D.
OT - Odor Threshold
- (5) Proposed Trial Limit.
- (6) Hull/Montagna
- (7) ACGIH TLV's
- (8) Dr. T. A. Lincoln
- (9) Dr. W. C. Kuryla, letter, 3/9/79

- * (a) - NIOSH Criteria Document
(b) - NIOSH Alert
(c) - OSHA Permanent Standard
(d) - OSHA Emergency Temporary Standard

DE 000712

S. D. Conner/slh
3-5-80

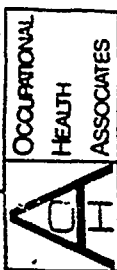
NOTATIONS
10-1-6-14
Ann J. A. Davis
1-30-19

INDUSTRIAL SURVEILLANCE SPECIFICATIONS

Worker Exposure	Exposure Code	Status	Regulation Or Criteria Document Number	Threshold Limit Value (TLV) - (A)		Ceiling Level (CL)		Action Level - (A)		Required Frequency Of Industrial Hygiene Monitoring			Sampling		Recordkeeping (AD)			
				As Shown Or: PPH (H)	As Shown Or: PPH (H)	As Shown Or: PPH (H)	As Shown Or: PPH (H)	As Shown Or: PPH (H)	As Shown Or: PPH (H)	Exceed TLV And/or CL	If Conc. Is TLV Or CL	If Conc. Is TLV Or CL	Method of Sample Collection And Analysis (B)	Observe Monitoring To	Notice to OSHA Required (C)	Expos. Determin. Expos. Meas. Maint.	Retention (D)	Access (E)
2-Acetylaminofluorene*	1	Permanent	1910.1014	2 (H)	10 (H)	10 (H)	10 (H)	10 (H)	10 (H)	Mo. (JJ)	Qrt. (HH) (HH) (HH) (HH)	Qrt. (HH) (HH) (HH) (HH)	Adapt. Tube; Chem. Anal. Or Posim. Or Absorp. Tube; Gas Chrom. (GG)	X	R	V	NO	NO
Acrylonitrile	93	ETS (FF)	1910.1045	2 (H)	10 (H)	10 (H)	10 (H)	10 (H)	10 (H)	Mo. (JJ)	Qrt. (HH) (HH) (HH) (HH)	Qrt. (HH) (HH) (HH) (HH)	Adapt. Tube; Chem. Anal. Or Posim. Or Absorp. Tube; Gas Chrom. (GG)	X	R	V	NO	NO
2-Aminodiphenyl*	2	Permanent	1910.1011	2 (H)	10 (H)	10 (H)	10 (H)	10 (H)	10 (H)	Mo. (JJ)	Qrt. (HH) (HH) (HH) (HH)	Qrt. (HH) (HH) (HH) (HH)	Adapt. Tube; Chem. Anal. Or Posim. Or Absorp. Tube; Gas Chrom. (GG)	X	R	V	NO	NO
Asbestos	3	Permanent	1910.1001	2 (H)	10 (H)	10 (H)	10 (H)	10 (H)	10 (H)	Mo. (JJ)	Qrt. (HH) (HH) (HH) (HH)	Qrt. (HH) (HH) (HH) (HH)	Adapt. Tube; Chem. Anal. Or Posim. Or Absorp. Tube; Gas Chrom. (GG)	X	R	V	NO	NO
Benzo (a) Pyrene (B)	28	Permanent	1910.1028	2 (H)	10 (H)	10 (H)	10 (H)	10 (H)	10 (H)	Mo. (JJ)	Qrt. (HH) (HH) (HH) (HH)	Qrt. (HH) (HH) (HH) (HH)	Adapt. Tube; Chem. Anal. Or Posim. Or Absorp. Tube; Gas Chrom. (GG)	X	R	V	NO	NO
Benzo (b) Pyrene (B)	4	Permanent	1910.1010	2 (H)	10 (H)	10 (H)	10 (H)	10 (H)	10 (H)	Mo. (JJ)	Qrt. (HH) (HH) (HH) (HH)	Qrt. (HH) (HH) (HH) (HH)	Adapt. Tube; Chem. Anal. Or Posim. Or Absorp. Tube; Gas Chrom. (GG)	X	R	V	NO	NO
3,3'-Dichloromethyl Ether*	5	Permanent	1910.1008	2 (H)	10 (H)	10 (H)	10 (H)	10 (H)	10 (H)	Mo. (JJ)	Qrt. (HH) (HH) (HH) (HH)	Qrt. (HH) (HH) (HH) (HH)	Adapt. Tube; Chem. Anal. Or Posim. Or Absorp. Tube; Gas Chrom. (GG)	X	R	V	NO	NO
Coke Oven Emissions	6	Permanent	1910.1029	2 (H)	10 (H)	10 (H)	10 (H)	10 (H)	10 (H)	Mo. (JJ)	Qrt. (HH) (HH) (HH) (HH)	Qrt. (HH) (HH) (HH) (HH)	Adapt. Tube; Chem. Anal. Or Posim. Or Absorp. Tube; Gas Chrom. (GG)	X	R	V	NO	NO
Commercial Diving Ops.	42	Permanent	1910 Sub-T.	2 (H)	10 (H)	10 (H)	10 (H)	10 (H)	10 (H)	Mo. (JJ)	Qrt. (HH) (HH) (HH) (HH)	Qrt. (HH) (HH) (HH) (HH)	Adapt. Tube; Chem. Anal. Or Posim. Or Absorp. Tube; Gas Chrom. (GG)	X	R	V	NO	NO
Compressed Air Atmos.	7	Permanent	1926.803	2 (H)	10 (H)	10 (H)	10 (H)	10 (H)	10 (H)	Mo. (JJ)	Qrt. (HH) (HH) (HH) (HH)	Qrt. (HH) (HH) (HH) (HH)	Adapt. Tube; Chem. Anal. Or Posim. Or Absorp. Tube; Gas Chrom. (GG)	X	R	V	NO	NO
DCP (OQ) (YY)	92	Permanent	1910.1044	2 (H)	10 (H)	10 (H)	10 (H)	10 (H)	10 (H)	Mo. (JJ)	Qrt. (HH) (HH) (HH) (HH)	Qrt. (HH) (HH) (HH) (HH)	Adapt. Tube; Chem. Anal. Or Posim. Or Absorp. Tube; Gas Chrom. (GG)	X	R	V	NO	NO
1,3'-Dichlorobenzene*	8	Permanent	1910.1007	2 (H)	10 (H)	10 (H)	10 (H)	10 (H)	10 (H)	Mo. (JJ)	Qrt. (HH) (HH) (HH) (HH)	Qrt. (HH) (HH) (HH) (HH)	Adapt. Tube; Chem. Anal. Or Posim. Or Absorp. Tube; Gas Chrom. (GG)	X	R	V	NO	NO
4-Di-2-naphthylbenzene*	9	Permanent	1910.1015	2 (H)	10 (H)	10 (H)	10 (H)	10 (H)	10 (H)	Mo. (JJ)	Qrt. (HH) (HH) (HH) (HH)	Qrt. (HH) (HH) (HH) (HH)	Adapt. Tube; Chem. Anal. Or Posim. Or Absorp. Tube; Gas Chrom. (GG)	X	R	V	NO	NO
Ethyleneimine*	10	Permanent	1910.1012	2 (H)	10 (H)	10 (H)	10 (H)	10 (H)	10 (H)	Mo. (JJ)	Qrt. (HH) (HH) (HH) (HH)	Qrt. (HH) (HH) (HH) (HH)	Adapt. Tube; Chem. Anal. Or Posim. Or Absorp. Tube; Gas Chrom. (GG)	X	R	V	NO	NO
Inorganic Arsenic	36	Permanent	1910.1018	2 (H)	10 (H)	10 (H)	10 (H)	10 (H)	10 (H)	Mo. (JJ)	Qrt. (HH) (HH) (HH) (HH)	Qrt. (HH) (HH) (HH) (HH)	Adapt. Tube; Chem. Anal. Or Posim. Or Absorp. Tube; Gas Chrom. (GG)	X	R	V	NO	NO
Ionizing Radiation	11	Permanent	1910.96	2 (H)	10 (H)	10 (H)	10 (H)	10 (H)	10 (H)	Mo. (JJ)	Qrt. (HH) (HH) (HH) (HH)	Qrt. (HH) (HH) (HH) (HH)	Adapt. Tube; Chem. Anal. Or Posim. Or Absorp. Tube; Gas Chrom. (GG)	X	R	V	NO	NO
Meth. Chloroform, Ether*	12	Permanent	1910.1006	2 (H)	10 (H)	10 (H)	10 (H)	10 (H)	10 (H)	Mo. (JJ)	Qrt. (HH) (HH) (HH) (HH)	Qrt. (HH) (HH) (HH) (HH)	Adapt. Tube; Chem. Anal. Or Posim. Or Absorp. Tube; Gas Chrom. (GG)	X	R	V	NO	NO
Alpha-Naphthylamine*	14	Permanent	1910.1004	2 (H)	10 (H)	10 (H)	10 (H)	10 (H)	10 (H)	Mo. (JJ)	Qrt. (HH) (HH) (HH) (HH)	Qrt. (HH) (HH) (HH) (HH)	Adapt. Tube; Chem. Anal. Or Posim. Or Absorp. Tube; Gas Chrom. (GG)	X	R	V	NO	NO
Beta-Naphthylamine*	15	Permanent	1910.1009	2 (H)	10 (H)	10 (H)	10 (H)	10 (H)	10 (H)	Mo. (JJ)	Qrt. (HH) (HH) (HH) (HH)	Qrt. (HH) (HH) (HH) (HH)	Adapt. Tube; Chem. Anal. Or Posim. Or Absorp. Tube; Gas Chrom. (GG)	X	R	V	NO	NO
Nitrophenyl*	16	Permanent	1910.1003	2 (H)	10 (H)	10 (H)	10 (H)	10 (H)	10 (H)	Mo. (JJ)	Qrt. (HH) (HH) (HH) (HH)	Qrt. (HH) (HH) (HH) (HH)	Adapt. Tube; Chem. Anal. Or Posim. Or Absorp. Tube; Gas Chrom. (GG)	X	R	V	NO	NO
Nitrodimethylamine*	17	Permanent	1910.1016	2 (H)	10 (H)	10 (H)	10 (H)	10 (H)	10 (H)	Mo. (JJ)	Qrt. (HH) (HH) (HH) (HH)	Qrt. (HH) (HH) (HH) (HH)	Adapt. Tube; Chem. Anal. Or Posim. Or Absorp. Tube; Gas Chrom. (GG)	X	R	V	NO	NO
Nitroethane*	22	Permanent	1910.95	2 (H)	10 (H)	10 (H)	10 (H)	10 (H)	10 (H)	Mo. (JJ)	Qrt. (HH) (HH) (HH) (HH)	Qrt. (HH) (HH) (HH) (HH)	Adapt. Tube; Chem. Anal. Or Posim. Or Absorp. Tube; Gas Chrom. (GG)	X	R	V	NO	NO
Ionizing Radiation	18	Permanent	1910.97	2 (H)	10 (H)	10 (H)	10 (H)	10 (H)	10 (H)	Mo. (JJ)	Qrt. (HH) (HH) (HH) (HH)	Qrt. (HH) (HH) (HH) (HH)	Adapt. Tube; Chem. Anal. Or Posim. Or Absorp. Tube; Gas Chrom. (GG)	X	R	V	NO	NO
Propiolactone*	19	Permanent	1910.1013	2 (H)	10 (H)	10 (H)	10 (H)	10 (H)	10 (H)	Mo. (JJ)	Qrt. (HH) (HH) (HH) (HH)	Qrt. (HH) (HH) (HH) (HH)	Adapt. Tube; Chem. Anal. Or Posim. Or Absorp. Tube; Gas Chrom. (GG)	X	R	V	NO	NO
Tricloroethylene*	20	Permanent	1910.134	2 (H)	10 (H)	10 (H)	10 (H)	10 (H)	10 (H)	Mo. (JJ)	Qrt. (HH) (HH) (HH) (HH)	Qrt. (HH) (HH) (HH) (HH)	Adapt. Tube; Chem. Anal. Or Posim. Or Absorp. Tube; Gas Chrom. (GG)	X	R	V	NO	NO
Chloride	21	Permanent	1910.1017	2 (H)	10 (H)	10 (H)	10 (H)	10 (H)	10 (H)	Mo. (JJ)	Qrt. (HH) (HH) (HH) (HH)	Qrt. (HH) (HH) (HH) (HH)	Adapt. Tube; Chem. Anal. Or Posim. Or Absorp. Tube; Gas Chrom. (GG)	X	R	V	NO	NO

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Chromat. (V) (Non-Care.)
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DIGEST OF OSHA MEDICAL AND ENVIRONMENTAL SURVEILLANCE SPECIFICATIONS
EDITION 2-A

PART A-ENVIRONMENTAL SURVEILLANCE SPECIFICATIONS

Exposure Code No.	Status	Regulation Or Criteria Document Number	Threshold Limit Value (TLV) - (A)		Ceiling Level (CL)		Action Level (A)		Required Frequency Of Industrial Hygiene Monitoring			Sampling		Recordkeeping (AD)			
			As Shown Or: As Shown Or: As Shown Or:		As Shown Or: As Shown Or: As Shown Or:		As Shown Or: As Shown Or: As Shown Or:		If Conc. Exceeds TLV And/Or CL	If Conc. Is TLV Or CL	If Conc. Is Action Level	Method of Sample Collection And Analysis (B)	Employee Has Right To Observe Monitoring	Retention (D)	Access		
			PTM	TLV	PTM	TLV	PTM	TLV								PTM	TLV
Notes: Exposure																	
Chromium (VI) (Carc.)	41	Crit. Doc.	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Coal Tar Products	98	Crit. Doc.	0.1mg	0.1mg	0.1mg	0.1mg	0.1mg	0.1mg	0.1mg	0.1mg	0.1mg	0.1mg	0.1mg	0.1mg	0.1mg	0.1mg	0.1mg
Cotton Dust	43	Proposed	200ug	200ug	200ug	200ug	200ug	200ug	200ug	200ug	200ug	200ug	200ug	200ug	200ug	200ug	200ug
Crystalline Silica	44	Crit. Doc.	50ug	50ug	50ug	50ug	50ug	50ug	50ug	50ug	50ug	50ug	50ug	50ug	50ug	50ug	50ug
Cumene	45	Proposed	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Cyclohexene	46	Proposed	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Cyclohexanone	47	Proposed	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Dioxane	99	Crit. Doc.	77-226	77-226	77-226	77-226	77-226	77-226	77-226	77-226	77-226	77-226	77-226	77-226	77-226	77-226	77-226
Dichlorobenzene	48	Crit. Doc.	2mg	2mg	2mg	2mg	2mg	2mg	2mg	2mg	2mg	2mg	2mg	2mg	2mg	2mg	2mg
Ethyl Benzene	49	Proposed	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Ethyl Butyl Ketone	50	Proposed	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Ethylene Dibromide	100	Crit. Doc.	77-221	77-221	77-221	77-221	77-221	77-221	77-221	77-221	77-221	77-221	77-221	77-221	77-221	77-221	77-221
Ethylene Dichloride	51	Crit. Doc.	76-119	76-119	76-119	76-119	76-119	76-119	76-119	76-119	76-119	76-119	76-119	76-119	76-119	76-119	76-119
Fibrous Glass	101	Crit. Doc.	77-152	77-152	77-152	77-152	77-152	77-152	77-152	77-152	77-152	77-152	77-152	77-152	77-152	77-152	77-152
Fluorocarbon Polymers (R)	102	Crit. Doc.	77-193	77-193	77-193	77-193	77-193	77-193	77-193	77-193	77-193	77-193	77-193	77-193	77-193	77-193	77-193
Formaldehyde	103	Crit. Doc.	77-126	77-126	77-126	77-126	77-126	77-126	77-126	77-126	77-126	77-126	77-126	77-126	77-126	77-126	77-126
Mesone	52	Proposed	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Hot Environments	53	Crit. Doc.	77-108	77-108	77-108	77-108	77-108	77-108	77-108	77-108	77-108	77-108	77-108	77-108	77-108	77-108	77-108
Hydrogen Cyanide/Solite	54	Crit. Doc.	76-143	76-143	76-143	76-143	76-143	76-143	76-143	76-143	76-143	76-143	76-143	76-143	76-143	76-143	76-143
Hydrogen Fluoride	55	Crit. Doc.	76-143	76-143	76-143	76-143	76-143	76-143	76-143	76-143	76-143	76-143	76-143	76-143	76-143	76-143	76-143
Hydrogen Sulphide	104	Crit. Doc.	77-158	77-158	77-158	77-158	77-158	77-158	77-158	77-158	77-158	77-158	77-158	77-158	77-158	77-158	77-158
Inorganic Fluoride	57	Crit. Doc.	76-103	76-103	76-103	76-103	76-103	76-103	76-103	76-103	76-103	76-103	76-103	76-103	76-103	76-103	76-103
Morgan's Mercury	58	Crit. Doc.	77-1100	77-1100	77-1100	77-1100	77-1100	77-1100	77-1100	77-1100	77-1100	77-1100	77-1100	77-1100	77-1100	77-1100	77-1100

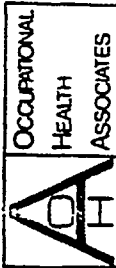
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Exposure Code No.	Status	Regulation Or Criteria Document Number	Threshold Limit Value (TLV) - (A)			Ceiling Level (CL)	Action Level (A)	Required Frequency Of Industrial Hygiene Monitoring			Sampling Method of Sample Collection And Analysis (B)	Recordkeeping (AD)			
			As Shown, Or: As Shown, Or: As Shown, Or:					If Conc. Exceeds TLV And/Or CL	If Conc. Is / TLV Or CL	Action Level		If Conc. Is	Employee Has Right To Observe Monitoring	Retention (M)	Access
			PPM	PPM	PPM										
105 Inorganic Nicks	Crit. Doc.	77-164	15ugm	800	100	When 3 liquid can be airb'd	Weekly	Quarterly	Annually (Q)	Method of Sample Collection And Analysis (B)	Expos. Determin.	Notice to OSHA	Retention (M)	Access	
	Crit. Doc.	76-162	400	800	100	200	Monthly	Semi-Ann.	Annually (Q)	Method of Sample Collection And Analysis (B)	Expos. Determin.	Notice to OSHA	Retention (M)	Access	
	Crit. Doc.	(E.A.)				0.5ug	1 wk. (T)	2 Mo. (AB)	Ann. (AB)	Method of Sample Collection And Analysis (B)	Expos. Determin.	Notice to OSHA	Retention (M)	Access	
61 Lead	Proposed	1910, 1025	100ug			50ug	Monthly (J)	Quarterly	Annually (Q)	Method of Sample Collection And Analysis (B)	Expos. Determin.	Notice to OSHA	Retention (M)	Access	
62 Mercuric	Crit. Doc.	76-205	15ugm			7.5ug (U)	30 Days (2)	Semi-Ann.	Annually (Q)	Method of Sample Collection And Analysis (B)	Expos. Determin.	Notice to OSHA	Retention (M)	Access	
63 Methyl Oxide	Proposed	1910, 1040	25			12.5	Monthly (BB)	Bi-Monthly	Annually (Q)	Method of Sample Collection And Analysis (B)	Expos. Determin.	Notice to OSHA	Retention (M)	Access	
64 3-Methyl-2-Heptanone	Proposed	1910, 1041	25			12.5	Monthly (BB)	Bi-Monthly	Annually (Q)	Method of Sample Collection And Analysis (B)	Expos. Determin.	Notice to OSHA	Retention (M)	Access	
65 Methyl Alcohol	Crit. Doc.	76-148	200	800	100	100ug	30 Days	Semi-Ann. (V)	Annually (Q)	Method of Sample Collection And Analysis (B)	Expos. Determin.	Notice to OSHA	Retention (M)	Access	
66 Methyl (n-amp) Ketone	Proposed	1910, 1023	100			50	Monthly (BB)	Bi-Monthly	Annually (Q)	Method of Sample Collection And Analysis (B)	Expos. Determin.	Notice to OSHA	Retention (M)	Access	
67 Methyl Parathion	Crit. Doc.	76-106	(CC)	0.2mg		When Present	Weekly (2)	Monthly (V)	Monthly (V)	Method of Sample Collection And Analysis (B)	Expos. Determin.	Notice to OSHA	Retention (M)	Access	
68 Methylene Chloride	Crit. Doc.	76-138	75 (C)	500 (G)		37.5C	Weekly	Semi-Ann.	Annually (Q)	Method of Sample Collection And Analysis (B)	Expos. Determin.	Notice to OSHA	Retention (M)	Access	
69 Nitric Acid	Crit. Doc.	76-141	2			1	15 Days	Semi-Ann.	Annually (Q)	Method of Sample Collection And Analysis (B)	Expos. Determin.	Notice to OSHA	Retention (M)	Access	
70 Nitric Oxide	Crit. Doc.	76-149	25	30mg		12.5	15 Days	Semi-Ann. (V)	Annually (Q)	Method of Sample Collection And Analysis (B)	Expos. Determin.	Notice to OSHA	Retention (M)	Access	
71 Nitrogen Dioxide	Crit. Doc.	76-149		1	1.0mg	0.5	15 Days	Semi-Ann. (V)	Annually (Q)	Method of Sample Collection And Analysis (B)	Expos. Determin.	Notice to OSHA	Retention (M)	Access	
72 Nitrogen Monoxide	Proposed	1910, 95	90 (BA)	125 (BA)		65 (BA)	Annual	Annual	Annually (Q)	Method of Sample Collection And Analysis (B)	Expos. Determin.	Notice to OSHA	Retention (M)	Access	
73 Organic Compounds	Crit. Doc.	77-115		1.0mg		0.05mg	Weekly (2)	Quarterly	Annually (Q)	Method of Sample Collection And Analysis (B)	Expos. Determin.	Notice to OSHA	Retention (M)	Access	
74 Ozone	Proposed	1910, 1042	0.1			0.05	Monthly	Bi-Monthly	Annually (Q)	Method of Sample Collection And Analysis (B)	Expos. Determin.	Notice to OSHA	Retention (M)	Access	
196 Parathion	Crit. Doc.	76-190	(CC)	0.05mg		Any Level	Weekly (2)	Monthly	Annually (Q)	Method of Sample Collection And Analysis (B)	Expos. Determin.	Notice to OSHA	Retention (M)	Access	
75 2-Pentanol	Proposed	1910, 1020	200			100	Monthly (BB)	Bi-Monthly	Annually (Q)	Method of Sample Collection And Analysis (B)	Expos. Determin.	Notice to OSHA	Retention (M)	Access	
76 Phenol	Crit. Doc.	76-196		20mg		60mg	Weekly	Monthly	Annually (Q)	Method of Sample Collection And Analysis (B)	Expos. Determin.	Notice to OSHA	Retention (M)	Access	
77 Phosgene	Crit. Doc.	76-137	0.1	0.2		0.5	Semi-Ann. (V)	Quarterly	Annually (Q)	Method of Sample Collection And Analysis (B)	Expos. Determin.	Notice to OSHA	Retention (M)	Access	
107 Polychlorinated Biphenyls	Crit. Doc.	77-225		1.0ug		When Present	30 Days (2)	Quarterly	Annually (Q)	Method of Sample Collection And Analysis (B)	Expos. Determin.	Notice to OSHA	Retention (M)	Access	
108 Refined Petrol. Solvent	Crit. Doc.	77-192		1800mg		1000mg	30 Days (2)	Semi-Ann. (Q)	Annually (Q)	Method of Sample Collection And Analysis (B)	Expos. Determin.	Notice to OSHA	Retention (M)	Access	
78 Sodium Hydroxide	Crit. Doc.	76-105		2.0mg		1.0mg	15 Days	Semi-Ann.	Annually (Q)	Method of Sample Collection And Analysis (B)	Expos. Determin.	Notice to OSHA	Retention (M)	Access	

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DIGEST OF OSHA MEDICAL AND ENVIRONMENTAL SURVEILLANCE SPECIFICATIONS
EDITION 2-A

12

PART A-ENVIRONMENTAL SURVEILLANCE SPECIFICATIONS⁶

Worker Exposure	Exposure Code No.	Status	Regulation Or Criteria Document	Threshold Limit Value (TLV)-(A)		Ceiling Level (CL)	Action Level-(A)	Required Frequency of Industrial Hygiene Monitoring			Sampling Method of Sample Collection And Analysis (B)	Recordkeeping (AD)					
				As Shown On: PPM	As Shown On: MG./M. ³			Exceed TLV And/or CL	If Conc. Is TLV or CL	If Conc. Is VA Action Level		If Conc. Is Action Level	Retention (D)	Access			
Styrene ⁶	79	Proposed	1910.1036	100	200 (1)	200 (1)	50	Monthly (88)	Bi-Monthly	Bi-Monthly	(H)	Charcoal Tube; Gas Chromatography	(H)	S	S	1	NO
Sulfur Dioxide	80	Proposed	1910.1030	2	10	10	1	Monthly	Bi-Monthly	Bi-Monthly	(H)	Impinger; 0.3M H ₂ O ₂ ; Titration & Membrane Filter; Titration	(H)	S	S	20	1
Sulfuric Acid	81	Crit. Doc.	76-128	1 mg				15 Days	Semi-Ann.		(H)		(H)	S	D50		N
1,1,2,2-Tet'chl'ethane	109	Crit. Doc.	77-121	1	6.87mg		0.5	30 Days (2)	Quart. (Q)	Annually (Q)	(H)	Charcoal Tube; Gas Chromatography	(H)	30	30	NO	N
Tetrachloroethylene	82	Crit. Doc.	76-185	50	339mg	100	25	30 Days (2)	Quart. (V)	Trienn. (Q)	(H)	Charcoal Tube; Gas Chromatography	(H)	S	20	NO	N
p-tert-nutyltoluene ⁶	83	Proposed	1910.1032	10			5	Monthly (88)	Bi-Monthly		(H)	Charcoal Tube; Gas Chromatography	(H)	S	S	1	NO
Toluene	84	Proposed	1910.1029	100	200	200	50	Monthly (88)	Quarterly	Quarterly	(H)	Charcoal Tube; Gas Chromatography	(H)	2	10	2	N
Toluene Diisocyanate	85	Crit. Doc.	MSH-73-1022	0.005		0.02	When present	Weekly	Monthly (F)	Monthly (F)	(H)	Impinger, Absorbing Solispectr. ⁵	(H)	20	20		N
1,1,1-Trichloroethane	86	Crit. Doc.	77-121		350	1910mg	200	30 Days (2)	Quart. (V)	Trienn. (Q)	(H)	Charcoal Tube; Gas Chromatography	(H)	20	20		N
Trichloroethylene	87	Proposed	1910.1027	100	150	150	50	Monthly (88)	Bi-Monthly		(H)	Charcoal Tube; Gas Chromatography	(H)	X	10	2	NO
Tungsten & Cem. T. Carb.	110	Crit. Doc.	77-227		(VV)			30 Days (2)	Quart. (Q)	Trienn. (Q)	(H)	Cell. Enter Membrane Filter; AAS NIOSH & PACAN 173 U.V. Light Meter; (Direct) S	(H)	D30	D30	NO	N
Ultraviolet Radiation	88	Crit. Doc.	MSH-73-11009	0.1mJ/cm ² (F)				Weekly (2)	(Not. app.)	Annually (Q)	(H)	Cell. Enter Membrane Filter; AAS NIOSH & PACAN 173 U.V. Light Meter; (Direct) S	(H)				N
Vanadium	111	Crit. Doc.	77-222		(Vanadium Compounds) 0.05mg (Metallic V. As Carbide) 1mg		1.0mg	Monthly (88)	Bi-Monthly		(H)	Charcoal Tube; Gas Chromatography	(H)	30	30		N
Vinyl Toluene ⁶	89	Proposed	1910.1037	100			50	Monthly (88)	Bi-Monthly		(H)	Charcoal Tube; Gas Chromatography	(H)	S	S	1	NO
Waste Anesthet. Gases	112	Crit. Doc.	77-140		Halogenated Agents-2 Nitrous Oxide - 5			Quarterly for Iso. A. unless bed. agent			(H)	Charcoal Tube; Gas Chromatography	(H)	20			N
Xylene	90	Crit. Doc.	75-168	100	200	200	50	Monthly	Quarterly	Quarterly	(H)	Charcoal Tube; Gas Chromatography	(H)	S	1		N
Zinc Oxide	91	Crit. Doc.	76-104		5mg	15mg		Monthly	Semi-Ann.	Semi-Ann.	(H)	Cellulose Membrane Filter; AAS	(H)	S	D5		N

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DIGEST OF OSHA MEDICAL AND ENVIRONMENTAL SURVEILLANCE SPECIFICATIONS

EDITION 2-A

PART A - ENVIRONMENTAL SURVEILLANCE SPECIFICATIONS

NOTES

- (A) Expressed as time-weighted average (TWA) exposure for an 8 or 10 hour work shift in a 40-hour work week as provided by individual regulations; except TLV for Ionizing Radiation.
- (B) Consult applicable regulations or criteria document for detailed procedure.
- (C) Report(s) identifying in-plant regulated area(s), type of activity, number of employees involved in regulated area(s) and other information shall be made to the OSHA Area Office. (F) - Work report identifying each workplace where the subject substance is present and giving particulars of use is required to be sent to the nearest OSHA Area Office. (F) means duration of employment plus as many years as are indicated by numerals. Y = Immediately. J = Maintain for the effective period of this emergency temporary standard and for any additional period required by the permanent standard. N = Duration of employment, then forward records, or notarized true copies thereof, to Director, NIOSH. P = Duration of employment plus 20 years, or 30 years, whichever is longer. Q = Duration of employment plus 20 years, or 40 years, whichever is longer. S = Retain until record of next subsequent survey is made, but for not less than one year. T-U = Retain records of personnel entering regulated areas as follows: T = 20 years; U = 30 years; V = 40 years; W = Duration plus 20 years, or 40 years, whichever is longer. X = 2 years or until replaced by a more recent determination, whichever is longer. Y = Following last occupational exposure to the indicated substance. Z = Retain during the effective period of this section of the Code of Federal Regulations.
- (E) Recommended.
- (F) Consult applicable regulation or criteria document for additional or more-detailed guidelines.
- (G) In the absence of exposure to CO above a TWA of 9ppm. In the presence of exposure to CO in the work environment above a TWA of 9ppm, exposure limits of CO or methylene chloride, or both, shall be reduced in accordance with the formula given in the regulation.
- (H) In addition to such other monitoring as may be specified, continuous automatic area monitoring is recommended in any work area where an initial industrial hygiene survey indicates that a potential phosgene exposure exists.
- (I) An exposure not exceeding 600ppm for no more than five minutes every three hours shall be permitted if the TWA is at or below 100ppm.
- (J) Records of the wet bulb globe temperature for each work area as specified in Section 8 of the regulation shall be maintained for a period determined by the Secretary of Labor.
- (K) This regulation does not apply to solid or liquid mixtures containing less than 0.1% by weight or volume.
- (L) This regulation does not apply to solid or liquid mixtures containing less than 1.0% by weight or volume.
- (M) Does not apply to construction work within the scope of 29CFR Part 1910.12 nor to working conditions of employees with respect to which other federal agencies exercise statutory authority to prescribe or enforce standards or regulations affecting occupational safety or health.
- (N) As necessary to comply with provisions of this regulation.
- (OO) Weekly survey of operations involving liquid Acrylonitrile are required. The survey shall employ an infra-red gas analyzer calibrated for acrylonitrile, a multipoint gas chromatographic monitor, or comparable system for detection of acrylonitrile. (F)
- (PP) Whenever the employee ceases to do business, the successor employer shall receive and retain the records. When there is no successor employer or at the expiration of the retention period, the employer shall transmit the records to the Director, NIOSH, HEW.
- (QQ) 1,2 - Dibromo-3-chloropropane. Does not apply to DBCP which results solely from the application and use of DBCP as a pesticide.
- (RR) This designation refers to decomposition products of the indicated substance(s).
- (SS) Medical representatives of Secretaries of HEW and Labor.
- (TT) Threshold limit values: (1) For petroleum ether, rubber solvent, varnish makers' and painters' naphtha, mineral spirits, and standard solvents -- 350 mg/m³ air (TWA). (2) For hexane -- 100 mg/m³ air (TWA).
- (UU) Action levels: (1) For petroleum ether, rubber solvent, and varnish makers' and painters' naphtha -- 200 mg/m³ air (TWA); (2) For mineral spirits and Stoddard solvent -- 350 mg/m³ air (TWA); (3) For hexane -- 100 mg/m³ air (TWA).
- (VV) Threshold limit values: (1) For insoluble tungsten -- 5 mg/m³ air (TWA) measured as tungsten, as tungsten. (2) For soluble tungsten -- 1 mg/m³ air (TWA) measured as tungsten. (3) For dust of cemented tungsten carbide which contains more than 2% cobalt -- 0.1 mg/m³ air (TWA) measured as cobalt. (4) For dust of cemented tungsten carbide which contains more than 0.1% nickel -- 15 ug of nickel/m³ air (TWA).
- (WW) Action levels are, respectively, one-half the TLV values given in (VV).
- (XX) Contact of skin or eyes with the subject substance.
- (YY) Where DBCP is present only in sealed containers, environmental and medical monitoring requirements of the standard do not apply. Then, only the labeling, training, and emergency provisions of the standard apply.
- (ZZ) Evacuation of the area shall be required if the concentration of hydrogen sulfide equals or exceeds 70 mg/m³. (F)
- (AB) Surveys shall also be repeated immediately after any process change likely to result in increased concentrations of the subject substance.
- (AC) Occupational exposure to the subject substance refers to any workplace situation in which such substance is stored, used, produced, or may be evolved as a consequence of the process.
- (AD) Under an interim final OSHA rule (CFR 29, XVI, 1910.20), each employer who makes, maintains or has access to employee exposure records shall preserve both individual exposure records and general research or statistical studies based on information collected from exposure records. The employer shall make available, upon request, to the Asst. Sec. of Labor for Occupational Safety and Health, or a designee, and the Director of NIOSH, or a designee, all such records.

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- (O) If two consecutive monitorings made at least 5 days, but not more than 3 months apart, show that an employee's exposure is below both the TLV and CL limits, monitoring need not be repeated unless employee exposure is changed with changes in production, process, controls or other relevant factors. When such changes occur, the employee(s) shall be monitored as soon as practicable with further monitoring as indicated in the table and above in this note.
- (P) Only instruments designed for use with acetylene shall be used.
- (Q) Surveys shall also be made within 30 days of any process change which is likely to result in an increase of the airborne concentration of the substance involved in this type of worker exposure.
- (R) Vertical elutriated cotton dust.
- (S) Expressed as CH (6.7ppm = ceiling level; 2.35ppm = action level).
- (T) Medical representative of employer.
- (U) When skin exposure is prevented.
- (V) Except as otherwise indicated by a professional industrial hygienist.
- (W) Plus records of other environmental variables that could affect the measurement of employee exposure.
- (X) Mandated.
- (Y) Surveys shall also be carried out by the employer within 30 days after installation of a new process, equipment changes, process modifications or work site changes.
- (Z) Employee(s) involved shall be notified of the exposure and of the control measures being implemented to reduce exposure to or below the permissible exposure limit.
- (AA) Monitoring shall be performed quarterly for a minimum period of one year until it is verified that occupational exposure has not occurred. Thereafter, monitoring shall be performed annually.
- (AB) Written notice of results to employee required within 5 working days (F).
- (AC) Greatest danger is from skin contact.
- (AD) As determined over a sampling time of 15 minutes.
- (AE-1) About 120 parts of pentane per million parts of air (ppm), 100 ppm of hexane, 85 ppm of heptane, or 75 ppm of octane.
- (AE-2) About 610 ppm pentane, 510 ppm hexane, 440 ppm heptane, or 385 ppm octane.
- (AF) 15 - Emergency Temporary Standard.
- (AG) Does not apply to: (1) Solids other than pure benzene, (2) Liquids having 0.1% benzene or less (0.5% to 5/27/81), (3) The storage, transportation, distribution, dispensing, sale or use of gasoline, motor fuels or other fuels subsequent to discharge from bulk terminals; or (4) The storage, transportation or sale of benzene in intact containers sealed in such a manner as to contain benzene vapors or liquid except for providing (a) employee hazard information and training and (b) signs and labels. (F)
- (AH) The employer shall assure that no employee is exposed to eye contact with liquid benzene; or to skin contact with liquid benzene, unless the employer can establish that the skin contact is an isolated instance.
- (AI) Sampling and analysis shall be conducted every 3 months on at least 25% of the workers. This frequency and fraction of employees sampled may be different if so directed by a professional industrial hygienist.
- (AJ) Employee(s) involved shall be notified of the exposure and of the control measures being implemented to correct the situation in writing within 5 working days.
- (AK) Employer shall assure that no employee is exposed to skin contact or eye contact with the subject substance(s).
- (AL) Whenever there has been a production, process, control or personnel change which may have resulted in new or additional exposures to the subject substance, or whenever the employer has any other reason to suspect a change which may result in new or additional exposures to the subject substance, additional monitoring shall be conducted. (F)
- (AM) Alternative limits under consideration.

e Worker exposure limits for which OSHA regulations are effective at this time include both (a) the limits specified by the "Permanent" regulations in this table (Exposure codes 1-21; Cols. 4-6) and (b) the limits for other substances specified in the Code of Federal Regulations, title 29, Chapter XVI, Subpart Z, Sec. 1910.1000 - Air Contaminants. A copy of Sec. 1910.1000 appears in the attached Appendix A.

* Carcinogen Group

† Ketone Group

‡ Alkyl Benzene Group

§ Provisions of this standard dealing with laboratory usage deleted 8/76.

¶ Instrument for both collecting and directly analyzing sample is available.

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STATUS REPORT ON PROPOSED STANDARDS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

[This chart is up to date through the issue of July 5, 1979.]

Topic	CFR Number	Date Proposed	Last Action
Ammonia	1910.1031	November 25, 1975 (Current Report, November 27, 1975, p. 895).	Firm recommends exclusion of closed refrigeration from proposed rule (Current Report, June 17, 1976, p. 70).
Ammonia (anhydrous); revisions in handling and storage procedures	1910.111, 267	September 21, 1973 (Current Report, September 27, 1973, p. 550).	Public comments submitted (Current Report, August 12, 1976, p. 336).
Asbestos	1910.1001	October 9, 1975 (Current Report, October 16, 1975, p. 638).	OSHA examining its policy on medical examination rules (Current Report, March 30, 1978, p. 1641). Minimum airborne concentrations for medical exams set by OSHA program directive (Current Report, November 2, 1978, p. 803). NIOSH publishes recommendations for sampling airborne fibers (Current Report, April 26, 1979, p. 1697).
Beryllium	1910.1026	October 17, 1975 (Current Report, October 16, 1975, p. 635).	Public hearing (Current Report, September 8, 1977, p. 445). NIOSH study found to be controversial (Current Report, August 3, 1978, p. 324). OSHA reopens hearing record to comments on HEW report (Current Report, January 18, 1979, p. 1339).
Carcinogens (generic policy)	1990	October 4, 1977 (Current Report, October 6, 1977, p. 555).	OSHA releases tentative list of Category I carcinogens (Current Report, July 26, 1978, p. 237). Hearings end (Current Report, July 27, 1978, p. 254). OSHA to conduct regulatory analysis (Current Report, August 3, 1978, p. 323). Record closes (Current Report, November 2, 1978, p. 798). Extension granted for comments on regulatory analysis (Current Report, November 23, 1978, p. 931). Record closes (Current Report, December 28, 1978, p. 1222).
Conveyors	1910.186	June 3, 1974 (Current Report, June 6, 1974, p. 7).	Adequacy of proposed standard challenged (Current Report, October 17, 1974, p. 560).
Noise	1910.95	October 24, 1974 (Current Report, October 24, 1974, p. 587).	OSHA hires technical expert (Current Report, November 10, 1977, p. 820). Audiologist hired by agency (Current Report, March 15, 1979, p. 1561).

CHART ON PROPOSED STANDARDS

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11:2153

Substance	CFR Number	Status
p-Tert-Butyltoluene	1910.1032	Standards proposed October 1, 1975 (Current Report, October 16, 1975, p. 663). Public comments (Current Reports, January 29, 1976, p. 1176, and January 22, 1976, p. 1145). NIOSH-OSHA guide published (Current Report, May 31, 1979, p. 1797).
Cumene (Isopropyl Benzene)	1910.1033	
Ethyl Benzene	1910.1034	
alpha-Methyl Styrene	1910.1035	
Styrene	1910.1036	
Vinyl Toluene	1910.1037	
Cyclohexane	1910.1038	
Camphor	1910.1039	
Mesityl Oxide	1910.1040	
5-Methyl-3-Heptanone	1910.1041	
Ozone	1910.1042	
Chloroacetaldehyde		Draft technical standards issued by OSHA on January 27, 1975 (Current Report, January 30, 1975, p. 1035). NIOSH-OSHA guide published (Current Report, May 31, 1979, p. 1797).
Alpha-Chloroacetophenone (Phenacyl Chloride)		
P-Nitroaniline		
Pival (Pivalyl-1, 3-Indandione)		Draft technical standards issued by OSHA on February 3, 1975 (Current Report, February 6, 1975, p. 1176). NIOSH-OSHA guide published (Current Report, May 31, 1979, p. 1797).
Terphenyls		
Acrolein		
Diphenyl (Biphenyl)		
Furfural		Draft technical standards issued by OSHA on March 14, 1975 (Current Report, March 20, 1975, p. 1377). NIOSH-OSHA guide published (Current Report, May 31, 1979, p. 1797).
Sec-Amyl Acetate		
Tert-Butyl Acetate		
Sec-Butyl Acetate		
Butyl Acetate		
2-Ethoxyethylacetate		
Ethyl Acrylate		
Ethyl Formate		
Sec-Hexyl Acetate		
Isoamyl Acetate		
Isobutyl Acetate		
Methyl Acetate		
Methyl Acrylate		
Methyl Cellosolve Acetate		
Methyl Methacrylate		
N-Propyl Acetate		
Hydroquinone		Draft technical standards issued by OSHA on April 21, 1975 (Current Report, April 24, 1975, p. 1538). NIOSH-OSHA guide published (Current Report, May 31, 1979, p. 1797).
n-Amyl Acetate		
Isoamyl Alcohol		
sec-Butyl Alcohol		
Isobutyl Alcohol		
tert-Butyl Alcohol		
Isopropyl Acetate		
Butyl Alcohol		
Isopropyl Alcohol		
Cyclohexanol		
Methyl Alcohol		
Diacetone Alcohol		
Methyl Isobutyl Carbinol		
Ethyl Acetate		
Propyl Alcohol		

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CHART ON PROPOSED STANDARDS

S-144
11:2155

Substance	Status
Acrylonitrile Aniline Ethylamine Ethylenediamine Morpholine Acetic Anhydride Acetonitrile Cresol, all isomers Dimethylaniline Hydrogen Bromide Hydrogen Fluoride Phenol Phenylhydrazine Pyridine Sulfuric Acid o-Toluidine Xylidine	Draft technical standards issued by OSHA on April 27, 1976 (Current Report, April 29, 1976, p. 1540). NIOSH-OSHA guide published (Current Report, May 31, 1979, p. 1797).

STATUS REPORT ON CRITERIA DOCUMENTS

Criteria Document	Proposal	Last Action
Acetylene GPO No. and price unavailable.	NIOSH recommended an exposure limit of 2,500 ppm (Current Report, November 4, 1976, p. 687).	None
Acrylamide GPO No. and price unavailable.	NIOSH recommended adherence to the present standard of 0.3 milligrams per cubic meter of air (Current Report, January 6, 1977, p. 982).	None
Acrylonitrile GPO No. and price unavailable.	NIOSH recommended limit of four ppm as determined by a four-hour sample collected at 0.2 liter per minute (Current Report, October 13, 1977, p. 678).	OSHA standard of 2 ppm issued (Current Report, October 5, 1978, p. 563; text, p. 585).
Alkanes GPO No. and price unavailable.	NIOSH recommended limit of 350 milligrams per cubic meter (Current Report, July 7, 1977, p. 190).	None
Allyl Chloride GPO No. and price unavailable.	NIOSH recommended an exposure limit of one part per million parts of air and a ceiling concentration of three ppm for any 15-minute sampling period (Current Report, November 25, 1976, p. 798).	None
Ammonia (GPO No. 1733 00036/\$1.55)	NIOSH recommended limit of 50 ppm (Current Report, August 1, 1974, p. 222).	See "Status Report on Proposed Standards."
Anesthetic Gases GPO No. and price unavailable.	NIOSH recommended exposure to waste anesthetic gases be reduced to "greatest extent possible" with different levels for different gases (Current Report, March 10, 1977, p. 1286).	None

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CHART ON PROPOSED STANDARDS

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Criteria Document	Proposal	Last Action
Carbon Dioxide GPO No. and price unavailable.	NIOSH recommended an exposure limit of 10,000 parts per million and a ceiling concentration of 30,000 ppm for any 10-minute sampling time (Current Report, November 4, 1976, p. 687).	None
Carbon Disulfide GPO No. and price unavailable.	NIOSH recommended limit of three milligrams per cubic meter and a ceiling concentration of 30 milligrams per cubic meter for 15 minutes (Current Report, May 12, 1977, p. 1545).	None
Carbon Monoxide (GPO No. 1733 00006/\$2)	NIOSH recommended limits of 35 ppm (Current Report, July 13, 1973, p. 140).	NIOSH issued a report investigating behavioral and neurological aspects of low level exposure (Current Report, March 3, 1977, p. 1264).
Carbon tetrachloride GPO No. and price unavailable.	NIOSH recommended exposure limit of two ppm for up to a 10-hour workday (Current Report, February 12, 1976, p. 1227).	NIOSH submitted new recommendation for an environmental limit of two ppm as determined by a 45 liter sample taken over a period not to exceed one hour (Current Report, June 17, 1976, p. 63).
Chlorine GPO No. and price unavailable.	NIOSH recommended reducing ceiling limit to 0.5 ppm during a 15-minute period (Current Report, August 19, 1976, p. 348).	None
Chloroform (GPO No. 1733 00045/\$1.95)	NIOSH revised recommendation from a limit of 10 ppm to two ppm (Current Report, June 17, 1976, p. 63).	Health Research Group petitioned OSHA to issue an emergency standard reducing employee exposure to zero (Current Report, May 19, 1977, p. 1562).
Chloroprene GPO No. and price unavailable.	NIOSH recommended ceiling concentration of 3.6 milligrams per cubic meter for any 15-minute period (Current Report, October 20, 1977, p. 743).	None
Chromic acid (GPO No. 1733 00020/\$1.10)	NIOSH recommended 0.05 mg as chromium trioxide per cubic meter of air (Current Report, July 26, 1973, p. 219).	Comments received by January 7, 1974 (Current Report, March 7, 1974, p. 1255).
Chromium (VI) (GPO No. 1733 00125-1/\$2.75)	NIOSH recommended limit of one microgram per cubic meter of air (Current Report, January 8, 1976, p. 1060).	NIOSH recommended that OSHA issue an emergency standard (Current Report, November 11, 1976, p. 715).
Coal Gasification Plants GPO No. and price unavailable.	NIOSH recommended enforcement of existing federal exposure limits and use of NIOSH recommended limits where no federal standards apply or where reductions in federal limits have been suggested (Current Report, December 14, 1978, p. 1169).	None

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CHART ON PROPOSED STANDARDS

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11:2159

Criteria Document	Proposal	Last Action
Fibrous Glass GPO No. and price unavailable.	NIOSH recommended limit of three fibers per cubic centimeter for fibers 3.5 micrometers or less in diameter and 10 micrometers or more in length and a limit of five micrometers per cubic meter for total fibrous glass (Current Report, June 30, 1977, p. 152).	None
Fluorocarbon Polymers GPO No. and price unavailable.	NIOSH could not recommend an environmental limit, but did suggest engineering controls and special work practices (Current Report, October 6, 1977, p. 561).	None
Formaldehyde GPO No. and price unavailable.	NIOSH recommended exposure ceiling concentration of 1.2 milligrams per cubic meter of air (Current Report, January 13, 1977, p. 1048).	NIOSH report found no relationship of eye disorders to chronic exposure or work history and no acute effects on workers' performance on visual tests (Current Report, March 3, 1977, p. 1264).
Fluorides (inorganic) GPO No. and price unavailable.	NIOSH recommended limit of 2.5 mg per cubic meter of air (Current Report, September 4, 1975, p. 427).	None
Furfuryl Alcohol	NIOSH recommended limit of 200 milligrams per cubic meter of air (Current Report, June 14, 1979, p. 29).	None
Glycidyl Ethers GPO No. and price unavailable.	NIOSH recommended reduction of existing limits and ceiling limits measured over a 15-minute period (Current Report, October 26, 1978, p. 706).	NIOSH reported adverse effects in animal studies and urged strict adherence to criteria document guidelines (Current Report, October 26, 1978, p. 706).
Hazardous materials labeling (GPO No. 1733 00046/\$1.35)	NIOSH recommended placards, labels, other devices (Current Report, January 2, 1975, p. 901).	OSHA issued advance notice of proposed rule-making January 28, 1977 (Current Report, February 3, 1977, p. 1131).
Heat stress (GPO No. 1733 00010/\$1.80)	NIOSH recommended standards to insure that body heat does not exceed 100.4 degrees F (Current Report, July 13, 1974).	NIOSH released results of a study of the effects of workplace heat exposure on worker tolerance to heat (Current Report, March 3 1977, p. 1262).
Hydrazines GPO No. and price unavailable.	NIOSH recommended strict ceiling levels for a two-hour sampling period (Current Report, October 19, 1978, p. 672).	None
Hydrogen Cyanide (GPO No. 1733 00163-4/\$2.65)	NIOSH recommended that exposure to hydrogen cyanide and cyanide salts not exceed a ceiling concentration of five milligrams per cubic meter of air (Current Report, December 2, 1976, p. 823).	None
Hydrogen fluoride (GPO No. 1733 00171-5/ price unavailable)	NIOSH recommended limit of 2.5 mg of fluoride ion per cubic meter of air (Current Report, April 8, 1976, p. 1445).	None
Hydrogen Sulfide GPO No. and price unavailable.	NIOSH recommended a ceiling limit of 15 milligrams per cubic meter for 10 minutes (Current Report, May 19, 1977, p. 1556).	None

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CHART ON PROPOSED STANDARDS

S-144
11-2161

Criteria Document	Proposal	Last Action
Nickel (inorganic) GPO No. and price unavailable.	NIOSH recommended limit of 15 micrograms per cubic meter (Current Report, July 21, 1977, p. 257).	OSHA requests comments and information, says a standard is needed (Current Report, September 29, 1977, p. 526); industry says in comments that evidence is lacking that nasal or sinus cancer is a problem with nickel (Current Report, November 10, 1977, p. 820).
Nitric acid (GPO No. 1733 00169-3/ price unavailable)	NIOSH recommended limit of two ppm (Current Report, June 24, 1976, p. 125).	None
Nitriles GPO No. and price unavailable.	NIOSH recommended exposure limits for 10 short-chain cyanides (Current Report, October 19, 1978, p. 672). NIOSH recommended exposure limits for certain aliphatic saturated nitriles (Current Report, January 11, 1979, p. 1307).	None
Nitrogen oxides GPO No. and price unavailable.	NIOSH recommended ceiling limit of one ppm for nitrogen dioxide and a 25 ppm limit for nitric oxide (Current Report, June 17, 1976, p. 64).	None
Nitroglycerin and Ethylene Glycol Dinitrate GPO No. and price unavailable.	NIOSH recommended ceiling limit of 0.1 milligram per cubic meter of air during a 20-minute sampling period (Current Report, October 26, 1978, p. 706).	None
o-Tolidine GPO No. and price unavailable.	NIOSH recommended a ceiling concentration of 20 micrograms per cubic meter of air for a one-hour sampling period (Current Report, October 19, 1978, p. 672).	None
Organotin Compounds GPO No. and price unavailable.	NIOSH does not recommend any change from the current federal limit of 0.1 milligrams per cubic meter, measured as tin, except to express the limit as a time-weighted average concentration for up to a 10-hour day (Current Report, November 18, 1976, p. 764).	None
Parathion GPO No. and price unavailable.	NIOSH recommended an exposure limit of 0.05 milligrams per cubic meter of air (Current Report, July 8, 1976, p. 189).	None
Pesticides GPO No. and price unavailable.	NIOSH calls for immediate action to protect workers, but does not recommend exposure limits (Current Report, August 10, 1978, p. 340).	None
Petroleum Solvents GPO No. and price unavailable.	NIOSH recommended limit of 350 milligrams per cubic meter and a 15-minute ceiling concentration of 1,800 milligrams per cubic meter. NIOSH also recommended limit of 100 milligrams per cubic meter for kerosene (Current Report, September 29, 1977, p. 535).	None
Phenol GPO No. and price unavailable.	NIOSH recommended an exposure limit of 20 milligrams per cubic meter of air and a ceiling limit of 60 milligrams per cubic meter of air for any 15-minute period (Current Report, November 11, 1976, p. 719).	None

CHART ON PROPOSED STANDARDS

S-144
11:2163

Criteria Document	Proposal	Last Action
Ultraviolet Radiation (GPO No. 1733 00012/\$1.75)	NIOSH recommended adoption of ACGIH threshold limit values (Current Report, January 18, 1973, p. 924).	The Newspaper Guild refuses to accept results of NIOSH study on possible radiation hazard from video display terminals at New York Times (Current Report, August 4, 1977, p. 316).
Vanadium GPO No. and price unavailable.	Criteria document explains recommendations (Current Report, November 10, 1977, p. 820; text, p. 833).	NIOSH recommended limit of one milligram per cubic meter (Current Report, September 1, 1977, p. 422).
Vinyl Acetate GPO No. and price unavailable.	NIOSH recommended limit of 15 mg per cubic meter of air for 15-minute sampling period (Current Report, November 16, 1978, p. 855).	None
Vinyl Halides GPO No. and price unavailable.	NIOSH recommended adoption of a limit similar to the one ppm standard for vinyl chloride (Current Report, September 21, 1978, p. 520).	NIOSH and OSHA recommended treatment as potential carcinogens (Current Report, October 19, 1978, p. 673).
Xylene (GPO No. 1733 00075/\$1.75)	NIOSH recommended 100 ppm limit (Current Report, June 12, 1975, p. 28).	None
Zinc oxide (GPO No. 1733 00109/\$2.10)	NIOSH recommended limit of five milligrams per cubic meter of air (Current Report, October 30, 1975, p. 763).	None

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67-852

Chemical Name	TLV/TWA	STEL Action Level - At Gelling Level - At	Medical Required	(1) Health Hazard	DX Sampling/ Records Required	Handout Training	Regulated Areas Potentially Required	Workplace Posting Potentially Required	Potentially Required Equipment	Notification of Use to OSHA/EPA/IRC	Change Rooms Potentially Required	Employee Notification	Reference
Asbestos	2 fiber 5 m/Ch ³	C = 10 fibers 5 m/Ch ³	Make Available	Asbestosis	Yes	Yes	No	Yes	Yes	EPA	Yes	No - OSHA Yes - UCC	1910.93a
Vinyl Chloride	1 ppm	AL = .5 ppm ST = 5 ppm	Mandatory	Cancer Hazard Teratogen	Yes	Yes	Yes	Yes	Yes	OSHA	No	Yes	1910.1017
Lead	50 µg/m ³	30 µg/m ³	Make Available	Blood Lead Levels	Yes	Yes	No	Yes	Yes	OSHA	Yes	Yes	1910.1025
Acrylonitrile	2 ppm	1 ppm	Make Available	Cancer Hazard	Yes	Yes	Yes	Yes	Yes	OSHA	Yes	Yes	1910.1045
Ethylene Oxide	50 ppm OSHA 5 ppm UCC	None	None	Suspect Cancer	Yes- UCC	No	No	No	Yes 5 ppm	No	No	Yes- UCC	
Nitros	90 dBA	85 TLVg - (Hearing Conservation Amendment)	Make Available	Hearing Loss	Yes (NCA)	Yes	No	Yes	Yes	No	No	Yes Significant Threshold Shift	1910.95
Benzene	10 ppm	C = 25 ppm ST = 50 ppm	No	Cancer Hazard Teratogen In presence of external toxicity	No	Yes	No	No	Yes	No	No	Yes	UCC Standard
bis-Chloromethyl Ether	ALAP (UCC)	No	Yes	Cancer Hazard	Yes	Yes	Yes	Yes	Yes	OSHA	Yes	No	1910.1008
Carbon Tetrachloride	2 ppm (UCC)	C = 4 ppm	No	Suspect Cancer Embryo-toxic	Yes	Yes	No	No	Yes	No	No	Yes	UCC Standard
Chromium VI	0.05 mg/m ³	No	No	Suspect Cancer	Yes	No	No	No	Yes	No	No	No	1910.1000 (2-1)
Dimethyl Acetamide	10 ppm No skin contact	No	No	Teratogen	Yes	Yes	No	No	Yes	No	No	Yes	1910.1000 (2-1)
Dimethyl Formamide	10 ppm No skin contact	No	No	Teratogen	Yes	Yes	No	No	Yes	No	No	Yes	1910.1000 (2-1)
1,4-Dioxane	25 ppm (UCC) No skin or oral contact (UCC)	100 STEL	No	Suspect Cancer	Yes	No	No	No	Yes	No	No	No	UCC Standard

Chemical Name	TLV/TWAG	STEL Action Level - A Ceiling Level - C	Medical Required	Health Hazard (1)	EH Records/	Records Required	Training	Regulated Areas	Potentially Required	Workplace Posting	Potentially Required	Protective Equipment	Notification of Use to OSHA/EPA/NRC	Change Rooms Potentially Required	Employee Notification	Reference
Dimethyl Sulfoxide	10 ppm (UCC) No skin contact (UCC)	No	No	Teratogen	Yes	Yes	Yes	No	No	No	Yes	No	No	No	Yes	UCC Standard
Diphenols A, B, C	600 µg/m ³ (UCC). No skin contact (UCC)	No	No	Suspect Cancer	Yes	Yes	No	No	No	No	Yes	Yes	No	No	No	UCC Standard
Epichlorohydrin	0.5 ppm (UCC)	No	No	Suspect Cancer	Yes	Yes	No	No	No	No	Yes	Yes	No	No	No	UCC Standard
2-Ethoxyethanol (CELLOSOLVE)		C = 50 ppm (UCC)	No	Teratogen	Yes	Yes	Yes	No	No	No	Yes	Yes	No	No	Yes	UCC Standard
2-Ethylhexyl Acrylate	5 ppm (UCC)	No	No	Suspect Cancer	Yes	Yes	No	No	No	No	Yes	Yes	No	No	Yes	UCC Standard
Hydrazine	0.1 ppm (Skin)	No	No	Suspect Cancer	Yes	Yes	No	No	No	No	Yes	Yes	No	No	No	1910.1000 (2-1) UCC Standard
Fuel Oil Residues	ALAP (UCC)	No	No	Suspect Cancer	Yes	Yes	No	No	No	No	Yes	Yes	No	No	No	UCC Standard
Hydrogen Sulfide	10 ppm	No	No	Asphyxiant	Yes	Yes	Yes	No	No	No	Yes	Yes	No	No	Yes	1910.1000 (2-1) UCC Standard
2-Methoxyethanol Methyl CELLOSOLVE	10 ppm Skin (UCC)	ST-25 ppm (UCC)	No	Teratogen	Yes	Yes	Yes	No	No	No	Yes	Yes	No	No	Yes	UCC Standard
Nickel (Inorganic)	1 mg/m ³	No	No	Suspect Cancer	Yes	Yes	No	No	No	No	Yes	Yes	No	No	No	1910.1000 (2-1)
Nitric Oxide	25 ppm	No	No	Asphyxiant	Yes	Yes	Yes	No	No	No	Yes	Yes	No	No	Yes	1910.1000 (2-1)
N-Nitrosamine	No skin or oral contact (UCC)	No	No	Suspect Cancer	Yes	Yes	No	No	No	No	Yes	Yes	No	No	No	UCC Standard
Polychlorinated biphenyls (PCB's)	1 µg/m ³ (UCC) No skin contact	C-3 µg/m ³ (UCC)	No	Suspect Cancer Embryo-toxic	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	EPA	No	Yes	UCC Standard DOT/EPA Standard
Pyrolysis Fuel Oil	200 µg/m ³ No skin contact	C-300 µg/m ³ (UCC)	No	Suspect Cancer	Yes	Yes	No	No	No	No	Yes	Yes	No	No	No	UCC Standard

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Chemical Name	TLV/TWA	STEL - ST Action Level - AL Ceiling Level - CL	Medical Required	Health Hazard (1)	EH Sampling/ Records Required	Handcarry Treating	Regulated Areas Potentially Required	Workplace Posting Potentially Required	Protective Equipment Potentially Required	Notification of Use to OSHA/EPA/NRC	Change Rooms Potentially Required	Employee Notification	Reference
Quench Oil	200 $\mu\text{g}/\text{m}^3$ No skin con- tact (UCC)	0-600 $\mu\text{g}/\text{m}^3$	No	Suspect Cancer	Yes	No	No	No	Yes	No	No	No	UCC Standard
Radiation	0.5 REMS dur- ing pregnancy 5 REMS/year	No	Yes	Cancer- Hazard Suspect Teratogen	Yes	Yes	Yes	Yes	Yes	NRC/ State	No	Yes	NCRP Report NRC
Fluorocarbon-22 (Chlorodifluoromethane)	1000 ppm (ALCOH)	No	No	Teratogen	Yes	Yes	No	No	Yes	No	No	Yes	UCC Standard
Cadmium	40 $\mu\text{g}/\text{m}^3$ (UCC)	0-300 $\mu\text{g}/\text{m}^3$ (UCC)	No	Suspect Cancer- Teratogen	Yes	Yes	No	No	Yes	No	No	Yes	UCC Standard
1,3-Butadiene	100 ppm (UCC)	No	No	Suspect Weak Carcin- ogen, Suspect Teratogen	Yes	Yes	No	No	Yes	No	No	Yes	UCC Standard

(1) Suspect Teratogen, Teratogen embryotoxic and asphyxiant designations require Yes in Columns 5, 6, 7, and 12 per SMH Standard SH-250, Embryo-Fetal Protection

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