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108576

# Site-Specific Health and Safety Plan

*Prepared for:*

USEPA  
Removal Actin Branch  
Edison, New Jersey

*Site:*

Cornell-Dubilier Site  
404 Spicer St  
Southern Plainfield, New Jersey

*Prepared by:*

Earth Tech, Inc.  
2229 Tomlynn Street  
Richmond, Virginia 23230

*DATE April 3, 1998*

ET Job No. 26576.01

200001

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Client:  
Project Name: Site-Specific Health and Safety Plan for Cornell-Dubilier Site  
ET Job No.:26576.01

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Appendix C	Hearing Conservation
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## 1.0 INTRODUCTION

Because of the potential for Earth Tech personnel to work in a hazardous environment at Cornell-Dubilier Site, it is crucial that a site-specific health and safety plan (HASP) be developed and implemented during this project. This plan contains health and safety information, instructions, and work procedures/practices designed to be clearly understood by all personnel working at the site. In the event of an emergency response or emergency situation, personnel must rely on this HASP, verbal instructions, and existing standard operating procedures (SOPs) until a detailed written plan is developed as time permits.

The minimum requirements for this HASP, per 29 CFR 1910.120 Occupational Safety and Health Administration (OSHA) regulations, are as follows:

Names of key personnel and alternates responsible for site safety;

Safety and health risk hazard analysis for each site operation conducted;

Training requirements;

Personal protective equipment (PPE)/level of protection for each site operation;

Medical surveillance requirements;

If required, frequency and type of air monitoring, personnel monitoring, and environmental sampling techniques and instrumentation;

Site control measures;

Decontamination procedures;

Emergency response plan; and

Confined space entry procedures and spill containment program procedures.

Other information presented in the HASP includes:

Maps and diagrams,  
Site history,  
Weather,  
Phone numbers,  
Equipment usage safety plans, and  
Hospital contacts.

Addenda for specific site operations and chemical hazards are attached and will be referenced in respective sections of the HASP.

## 2.0 STATEMENT OF HAZARD

### 2.1 Scope of Work

Earth Tech will be performing cleanup activities to remove PCB contaminated dust from the basement, attic, living spaces and garages of residential homes. The cleanup activities will include vacuuming of carpets, furniture, drapes, blinds, and shades; mopping of tile and linoleum floors; steam cleaning of carpets and area rugs; wiping horizontal surfaces (book shelves, table tops, appliance); moving freestanding appliances to vacuum dust from floor areas; vacuuming of dust from refrigerator cooling coils; cleaning of dryer drums and replacement of discharge ducts; cleaning of ventilation ducts and filter replacement; washing window and door screens and sills; vacuuming of decorative molding surrounding windows and doors; and vacuuming of porch areas and exterior steps.

### 2.2 Specific Site Hazards

Potential hazards to personnel are directly related to the site operations. These include:

- Chemical
- Physical/Safety
- Environmental

Chemical substances that present health hazards, and may be encountered on site by personnel, consist of:

Polychlorinated Biphenyls (PCBs)

Appendix A contains health hazard information for this chemical being investigated/remediated at the site. These sheets outline the chemical/physical properties and hazardous characteristics of each substance. With this information at hand, proper PPE, work practices, and engineering controls can be implemented to minimize employee exposure.

Physical/safety conditions presenting potential hazards to Earth Tech personnel include:

- Slip, Trips and Falls
- Ergonomics/Lifting
- Cuts and Lacerations
- Excessive Noise

Appendices B and C, respectively, present the company's safety SOPs to be observed when dealing with these specific conditions and activities in order to ensure safe and healthy work conditions.

Environmental factors on site that have the potential to adversely affect human health include:

- Insects and Rodents
- Poisonous Plants/Vegetation
- Heat Stress (Appendix D)

Earth Tech will adhere to all applicable current OSHA health and safety rules and provisions as outlined in the General Industry Standard 29 CFR 1910 and Construction Standard 29 CFR 1926.

### **3.0 TRAINING/MEDICAL SURVEILLANCE REQUIREMENTS**

Prior to initiating field work, all Earth Tech personnel will have completed an OSHA 40-hour and annual 8-hour refresher course in the Hazardous Worker Training Program to comply with 29 CFR 1910.120(e). They will also have current medical clearance for work fitness from an examining physician, which includes fitness for respirator work and successfully passing a qualitative fit test. Earth Tech personnel will be aware of the safe work practices specified in the HASP. Medical and training records are available at Earth Tech's corporate office in Richmond, Virginia.

### **4.0 WORK ZONES**

#### **4.1 General**

Work zone operations will include distinct work areas to limit the potential for contamination and migration of hazardous substances.

##### **4.1.1 Exclusion Zone**

The exclusion zone will include all areas of the house being affected by the cleaning/wiping of PCB contamination. This designated area excludes personnel lacking proper training, medical clearance, and PPE. It will be situated so that no anticipated contamination will escape beyond its borders. Personnel and equipment in the exclusion zone will be kept to a minimum, consistent with effective site operations.

##### **4.1.2 Contamination Reduction Zone**

The contamination reduction zone will be established along the exterior of the home. This area will be used to don PPE before entering the exclusion zone, and to remove it after leaving the exclusion zone. It will also be used as an area to decontaminate equipment before entering the support zone.

##### **4.1.3 Support Zone**

The support zone is where outside observers must remain. This zone will consist of all areas outside of the contamination reduction zone. Any additional support personnel not required to be in the exclusion zone must stay in this area.

### **5.0 PERSONAL PROTECTIVE EQUIPMENT (PPE)/LEVEL OF PROTECTION**

#### **5.1 Site Operations**

Earth Tech personnel involved with the site operations discussed in Section 2.1 will be required to use PPE when inside the exclusion zone. ~~This Level C protection will include, at a minimum, the following:~~



For the house with PCB levels of 50 parts per million (ppm), personnel will don Level C to include:

Full face, APR with GMC-H and/or equivalent cartridges for protection against dust/fumes/mists, organics and acids;  
Outer Sarans;  
Chemical resistant booties;  
Gloves: inner-blue Nitrile;  
outer-yellow latex;  
Safety shoes and hard hat

For the remainder of homes, personnel will don modified Level D PPE to include hard hat safety shoes, safety glasses, Nitrile gloves and Tyvek outer booties.

If the site presents unknown condition(s) and/or visible contamination, an upgrade to a higher level of PPE may be required based on the recommendation of the Earth Tech Certified Industrial Hygienist (CIH). If conditions warrant, personnel are to leave the clean-up area immediately, and evaluate the situation before resuming operations. Earplugs or earmuffs may also be required if operations generate noise in excess of the 85 dBA "action level."

All Earth Tech personnel are responsible for monitoring the condition of their PPE. The On-Site Field Supervisor or Project Manager will be notified immediately of any damage to or malfunction in the equipment.

## 6.0 EMERGENCY PROCEDURES

### 6.1 Emergency Notification

At the job site, the following local phone numbers will be provided:

Fire Department 911

Hospital (map included - Appendix E) Mulenburg Hospital (908-668-2000)

Police Department 911

Ambulance Service 911

Poison Control Center 1-800-764-7661

Client Contact Eric Wilson OSC (732-906-6991)

Earth Tech Project Manager David Bartosik

If a fire, medical, or security emergency occurs, provide first aid, if applicable, and then call for help providing the following information:

Your name,  
Phone number from which you are calling,  
Location of incident,  
Nature of incident, and  
Request instructions for course of action.

## **6.2 Emergency Equipment**

In addition to the PPE used by or available to Earth Tech personnel, emergency equipment on site will include an eyewash, first-aid kit, fire extinguisher, and any additional site-specific equipment as dictated by site conditions and operations.

## **6.3 Emergency Signals**

A combination of visual and audio signals will be used to notify personnel in the case of an emergency. This may involve radios, air horns, and/or hand signals. These emergency signals will be discussed at the site safety meeting.

## **6.4 Buddy System**

All field personnel will operate on the buddy system. No one will enter the exclusion zone alone. Buddies will be assigned before beginning work each day and must remain within voice or eye contact of each other at all times.

## **7.0 MONITORING PROGRAM**

The goals of the monitoring program are to provide real-time data on potential short-term employee exposure while working on site, and to ensure the designated PPE is appropriate. Employees will be immediately informed of any results indicating possible overexposure, or the need to upgrade the level of PPE.

### **7.1 Air Monitoring**

Due to the low concentrations of PCBs, type of non-intrusive removal activities, and implementation of engineering/work practice controls, air monitoring is not anticipated to be conducted at the site.

## **8.0 SITE SECURITY AND CONTROL**

The Response Manager is responsible for knowing which workers or other authorized personnel are on site, and controlling the entry of personnel into the hazardous areas to prevent additional injury and exposure. Checkpoint systems implemented for this purpose will be discussed at the site safety meeting.

## 9.0 DECONTAMINATION PROCEDURES

Decontamination is critical to health and safety at hazardous work sites, because it protects workers from hazardous substances that may contaminate and eventually permeate the protective clothing, respiratory equipment, tools, vehicles, and other equipment used on site. Decontamination also minimizes the transfer of harmful materials into clean areas and helps prevent mixing of incompatible materials.

Decontamination methods either physically remove contaminants by one of several processes, inactivate contaminants by chemical detoxification or disinfection/sterilization, or remove contaminants by a combination of physical and chemical means.

Decontamination procedures employed at the site will depend on the level of protection used. However, general decontamination will consist of a "dry decon" discarding disposable Sarans/Tyvek, coverboots, and gloves. Procedures will be as follows:

- Travel to the CRZ and place equipment, radios, etc on poly
- Discard outer Saran/outer pair of gloves/booties
- Doff respirator, and decon in three stage container
- Discard inner gloves

These procedures will be modified for different levels of protection. Contaminated PPE will be disposed of by accepted methods.

Equipment decontamination will be conducted by scrubbing contaminated equipment with a soap and water solution and rinsing with water, before decontamination of PPE. All rinsate from decontamination will be contained for future disposal at a designated disposal area.

## 10.0 GENERAL SAFETY

### 10.1 Safety Official

The designated Site Safety Officer is David Bartosik.

### 10.2 Daily Site Safety Meeting

A brief site safety meeting will be conducted on a routine basis to highlight key issues of concern (e.g., work practices, hazards encountered, proper use of equipment, emergency procedures, and environmental stresses). A log will be maintained to document safety activities.

### 10.3 Hazardous Substances

Earth Tech will list hazardous materials brought on site, the adverse health effects, the location, and the correct handling and storage requirements per the requirements of the Hazard Communication Standard 29 CFR 1910.1200. Material Safety Data Sheets (MSDSs) containing this information will be located on site for periodic review. Personnel will follow requirements as outlined in the "Chemical Hazards" section of Earth Tech's Health and Safety Manual. These will include all cleaning/decon materials and solutions.

Contact with contaminated or suspected contaminated surfaces will be avoided. Personnel will not walk through puddles, leachate, or discolored surfaces; kneel on the ground; or lean, sit, or place equipment on any potentially contaminated surface or the ground. Whenever possible, sites will be approached and all work conducted from an upwind direction.

#### **10.4 Drugs/Alcoholic Substances**

Medicine and alcohol can potentiate or exaggerate the effects from exposure to toxic chemicals. Personnel who must take prescribed drugs will inform a qualified physician of the type of work to be performed, the potential for exposure to specific hazardous materials, and then shall follow the advice of the physician. Alcoholic beverage intake will be avoided. For additional information, Earth Tech personnel are to refer to the corporate SOPs concerning drugs and alcoholic substances.

#### **11.0 PERSONNEL ACKNOWLEDGEMENT**

All site personnel will read this HASP and emergency procedures and understand the contents (see Appendix F).

**Appendix A**

**Health Hazard Information**

200013

**PJL335**  
**POLYBROMINATED BIPHENYLS**

HR: 3

PROP: A class of aromatic compounds, related to polychlorinated biphenyls, containing two benzene nuclei with two or more substituent bromine atoms. Typically they are inert solids and thus have been used in industry as flame retardants. They do not occur as natural products, but are persistent in the environment and are concentrated in body fat.

SYN: PBB

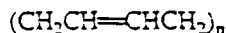
Community Right To Know list.

THR: The major isomer in production, hexabromobiphenyl, was involved in a large-scale poisoning of dairy cattle in Michigan in 1973.

Generally acute LD<sub>50</sub> doses are very high but in experimental animals subchronic poisoning may cause body-weight decrease, liver hypertrophy, chloracne-like lesions, suppression of immune response, neuromuscular dysfunction, teratogenic and embryotoxic effects. In humans they cross the placental barrier and are concentrated and secreted in mothers' milk. When heated to decomposition it emits toxic fumes of Br<sup>-</sup>. See also HEXABROMOBIPHENYL and OCTABROMODIPHENYL.

**PJL350**  
 cis-POLY(BUTADIENE)  
 CAS: 9003-17-2  
 mf: (C<sub>4</sub>H<sub>6</sub>)<sub>n</sub>

HR: 3



THR: May explode when heated above 337°C. When heated to decomposition it emits acrid smoke and irritating fumes. See also BUTADIENE.

**PJL375**  
 POLY(1,3-BUTADIENE PEROXIDE)  
 mf: (C<sub>4</sub>H<sub>6</sub>O<sub>2</sub>)<sub>n</sub>

HR: 3

THR: A powerful explosive very sensitive to shock. Formed by the reaction of butadiene with air. When heated to decomposition it emits acrid smoke and irritating fumes. See also PEROXIDES.

**PJL500**  
 β-POLY(1,3-BUTADIENE)STYRENE. COPOLYMER

HR: 1

CAS: 9003-55-3 NIOSH: WL 6000000

SYN: KOPOLYMER BUTADIEN STYRENOVY (CZECH)

TOXICITY DATA: CODEN:  
 eye-rbt 500 mg/24H MOD 28ZPAK.-257.72

Reported in EPA TSCA Inventory.

THR: An eye irritant. When heated to decomposition it emits acrid smoke and irritating fumes.

**PJL600**  
 POLY(CARBON MONOFLUORIDE)  
 CAS: 25136-85-0  
 mf: (CF)<sub>n</sub>

HR: 3

THR: Explodes when heated to 500°C in inert atmospheres. Ignites when heated to 400°C in hydrogen atmospheres. When heated to decomposition it emits toxic fumes of F<sup>-</sup>. See also FLUORIDES.

**PJL750**  
**POLYCHLORINATED BIPHENYLS**

HR: 3

CAS: 1336-36-3 NIOSH: TQ 1350000  
DOT: 2315

PROP: Bp: 340-375°, flash p: 383°F (COC), d: 1.44 @ 30°. A series of technical mixtures consisting of many isomers and compounds that vary from mobile oily liquids to white crystalline solids and hard noncrystalline resins. Technical products vary in composition, in the degree of chlorination and possibly according to batch (IARC\*\* 7,262,74).

## SYNS:

AROCLOR	KANECHLOR
CHLOPHEN	MONTAR
CHLOREXTOL	NOFLAMOL
CHLORINATED BIPHENYL	PCB (DOT)
CHLORINATED DIPHENYL	PHENOCHLOR
CHLORINATED DIPHENYLENE	POLYCHLORINATED BIPHENYL
CHLORO BIPHENYL	POLYCHLOROBIPHENYL
CHLORO-1,1-BIPHENYL	PYRALENE
CLOPHEN	PYRANOL
DYKANOL	SANTOTHERM
FENCLOR	SOVOL
INERTEEN	THERMINOL FR-1

TOXICITY DATA:	CODEN:
ori-mam TDLo: 325 mg/kg (30D pre/1-36D preg): REP	AMBOCZ 6,239.77
ori-rat TDLo: 16800 mg/kg/2Y- C: ETA	TOERD9 1,159.78
ori-mus TDLo: 1250 mg/kg/25W- I: CAR	FCTOD7 21,688.83
ori-rat TD : 1250 mg/kg/25W-I: CAR	FCTOD7 21,688.83
ori-mus LD50: 1900 mg/kg	FKIZA4 60,544.69

IARC Cancer Review: Human Limited Evidence IMEMDT 18,43,78. EPA Extremely Hazardous Substances List. Reported in EPA TSCA Inventory.

NIOSH REL: TWA (Polychlorinated Biphenyls) 0.001 mg/m<sup>3</sup>

DOT Classification: ORM-E: Label: None

THR: Moderately toxic by ingestion. Some are poisons by other routes. Suspected human carcinogens. Experiment-

tal carcinogens and tumorigens. Experimental reproductive effects. Like the chlorinated naphthalenes, the chlorinated diphenyls have two distinct actions on the body, namely, a skin effect and a toxic action on the liver. This hepatotoxic action of the chlorinated diphenyls appears to be increased if there is exposure to carbon tetrachloride at the same time. The higher the chlorine content of the diphenyl compound, the more toxic is it liable to be. Oxides of chlorinated diphenyls are more toxic than the unoxidized materials. In persons who have suffered systemic intoxication, the usual signs and symptoms are nausea, vomiting, loss of weight, jaundice, edema and abdominal pain. Where the liver damage has been severe the patient may pass into coma and die. Combustible when exposed to heat or flame. When heated to decomposition they emit highly toxic fumes of Cl<sup>-</sup>. Used in heat transfer, hydraulic fluids, lubricants, and insecticides. See also specific compounds. For further information, see PCB's, Vol. 3, No. 4 of *DPIIM Report*.

**PJM000** **HR: 2**  
**POLYCHLORINATED BIPHENYL (AROCLOR 1221)**

CAS: 11104-28-2 NIOSH: TQ 1352000

SYNS:  
 AROCHLOR 1221 CHLORODIPHENYL (21% Cl)

<b>TOXICITY DATA:</b>	<b>CODEN:</b>
scu-rat TDLo: 1 g/kg (1D pre): REP	ENVRAL 16.123.78
ori-rbt TDLo: 28 mg/kg (1-28D preg): REP	BECTA6 6.120.71
ori-rat LD50: 3980 mg/kg	ARVPAX 14.139.74
skn-rbt LDLo: 3169 mg/kg	ARVPAX 14.139.74

LARC Cancer Review: Human Limited Evidence IMEMDT 18.43.78.

NIOSH REL: TWA (Polychlorinated Biphenyls) 0.001 mg/m<sup>3</sup>

THR: Moderately toxic by ingestion and skin contact. Suspected human carcinogen. Experimental reproductive effects. When heated to decomposition it emits toxic fumes of Cl<sup>-</sup>. Used in heat transfer, hydraulic fluids, lubricants, and insecticides. See also POLYCHLORINATED BIPHENYLS.

**PJM250** **HR: 2**  
**POLYCHLORINATED BIPHENYL (AROCLOR 1232)**

CAS: 11141-16-3 NIOSH: TQ 1354000

SYNS:  
 AROCLOR 1232 CHLORODIPHENYL (22% Cl)

<b>TOXICITY DATA:</b>	<b>CODEN:</b>
ori-rat LD50: 4470 mg/kg	ARVPAX 14.139.74
skn-rbt LDLo: 2000 mg/kg	ARVPAX 14.139.74

LARC Cancer Review: Human Limited Evidence IMEMDT 18.43.78.

NIOSH REL: TWA (Polychlorinated Biphenyls) 0.001 mg/m<sup>3</sup>

THR: Moderately toxic by skin contact. Mildly toxic by ingestion. Suspected human carcinogen. When heated to decomposition it emits toxic fumes of Cl<sup>-</sup>. Used in heat transfer, hydraulic fluids, lubricants, and insecticides. See also POLYCHLORINATED BIPHENYLS.

**PJM500** **HR: 3**  
**POLYCHLORINATED BIPHENYL (AROCLOR 1242)**

CAS: 53469-21-9 NIOSH: TQ 1356000

SYNS:  
 AROCHLOR 1242 CLORODIFENILI CLORO 42% (ITALIAN)  
 AROCLOR 1242 DIPHENYLE CHLORE. 42% de CHLORE (FRENCH)  
 CHLORIERTE BIPHENYLE. GECHLOREERDEDIFENYL (DUTCH)  
 CHLORGEHALT 42% (GERMAN)  
 CHLORODIPHENYL (42% Cl)

<b>TOXICITY DATA:</b>	<b>CODEN:</b>
oms-mus:oth 25 ppmv/4H	
EESADV 3.10.79	
ori-rat TDLo: 945 mg/kg (36W pre): REP	AECTCV 3.479.75/76
ori-pig TDLo: 93 mg/kg (1-16W preg): REP	AJVRAH 36.23.75
ihl-hmn TCLo: 10 mg/m <sup>3</sup> : PUL.LIV	85CYAB 2.153.59
ori-rat LD50: 4250 mg/kg	TXAPA9 24.434.73
scu-gpg LDLo: 345 mg/kg	PHRPA6 59.1085.44

LARC Cancer Review: Human Limited Evidence IMEMDT 18.43.78. EPA Genetic Toxicology Program.

OSHA PEL: TWA 1 mg/m<sup>3</sup> (skin)  
 ACGIH TLV: TWA 1 mg/m<sup>3</sup> (skin)  
 NIOSH REL: TWA (Polychlorinated Biphenyls) 0.001 mg/m<sup>3</sup>

THR: Poison by subcutaneous route. Mildly toxic by ingestion. Human systemic effects by inhalation: pulmonary and liver effects. Suspected human carcinogen. Moderately toxic by ingestion. Experimental reproductive effects. Mutagenic data. When heated to decomposition it emits toxic fumes of Cl<sup>-</sup>. Used in heat transfer, hydraulic fluids, lubricants, and insecticides. See also POLYCHLORINATED BIPHENYLS. For further information, see Chlorinated Diphenyls, Vol. 1, No. 3 of *DPIIM Report*.

**PJM750** **HR: 3**  
**POLYCHLORINATED BIPHENYL (AROCLOR 1248)**

CAS: 12672-29-6 NIOSH: TQ 1358000

SYNS:  
 AROCLOR 1248 CHLORODIPHENYL (48% Cl)

## TOXICITY DATA:

ori-mky TDLo: 32 mg/kg (1-23W  
preg/91D post): REP  
ori-rbt TDLo: 165 mg/kg (1-31D  
preg): TER  
ori-rat LD50: 11 g/kg  
skn-rbt LDLo: 1269 mg/kg

## CODEN:

NTOTDV 3.15.31  
DABBBA 40.2061.79  
ARVPAX 14.139.74  
ARVPAX 14.139.74

IARC Cancer Review: Human Limited Evidence IMEMDT 18.43.78.

NIOSH REL: TWA (Polychlorinated Biphenyls) 0.001 mg/m<sup>3</sup>

THR: Moderately toxic by skin contact. A suspected human carcinogen. Experimental teratogenic and reproductive effects. When heated to decomposition it emits toxic fumes of Cl<sup>-</sup>. Used in heat transfer, hydraulic fluids, lubricants, and insecticides. See also POLYCHLORINATED BIPHENYLS. For further information, see Chlorinated Diphenyls. Vol. 1, No. 3 of *DPIM Report*.

PJN000

HR: 3

## POLYCHLORINATED BIPHENYL (AROCLOR 1254)

CAS: 11097-69-1

NIOSH: TQ 1360000

PROP: Composed of 11% tetra-, 49% penta-, 34% hexa- and 6% heptachlorobiphenyls (FCTXAV 12.63.74).

## SYNS:

AROCHLOR 1254  
AROCLOR 1254  
CHLORIERTE BIPHENYLE.  
CHLORGEHALT 54% (GERMAN)  
CHLORODIPHENYL (54% Cl)

CLORODIFENILI. CLORO 54%  
(ITALIAN)  
DIPHENYLE CHLORE. 54% de  
CHLORE (FRENCH)  
NCI-C02664

## TOXICITY DATA:

cyt-ofs-ivr 50 mg/kg  
otr-rat-ori 25 ppm/2Y-C  
dnd-rat-ori 1295 mg/kg  
dnd-rat:ivr 300 µmol/L  
ori-rat TDLo: 192 mg/kg (6D  
post): REP  
ori-rat TDLo: 90 mg/kg (7-15D  
preg): TER  
ori-rbt TDLo: 350 mg/kg (1-28D  
preg): TER  
ori-rat TDLo: 73500 mg/kg/2Y-  
C: CAR  
ori-mus TDLo: 17 g/kg/48W-C:  
NEO  
skn-mus TDLo: 4 mg/kg:  
ETA  
ivr-mus TDLo: 500 mg/kg (19D  
preg): REP: ETA  
ori-rat TD : 1 mg/kg/D-C: ETA  
ori-rat TD : 3 mg/kg/D-C: ETA  
ori-rat TDLo: 4 g/kg/2Y-I: ETA

## CODEN:

CBPCEE 32.489.35  
EVHPAZ 60.89.35  
BSIBAC 57.407.81  
SinJF# 26OCT82  
ENVRAL 31.76.35  
FCTXAV 11.471.73  
EVPHBI 1.67.71  
EVHPAZ 60.89.35  
JNCIAM 53.547.74  
BECTA6 18.552.77  
JJIND8 71.157.33  
CNREA8 41.5052.31  
CNREA8 41.5052.31  
NCITR\* NCI-CG-TR-  
38.78  
TXAPA9 60.33.31  
FCTXAV 12.63.74  
BECTA6 3.245.72

ori-rat LD50: 1010 mg/kg  
ivr-rat LD50: 358 mg/kg  
ivr-mus LD50: 2340 mg/kg

IARC Cancer Review: Animal Sufficient Evidence IMEMDT 7.261.74; Animal Limited Evidence IMEMDT 18.43.78; Human Limited Evidence IMEMDT 18.43.78. NCI Carcinogenesis Bioassay (feed); Some Evidence: rat NCITR\* NCI-CG-TR-38.78. EPA Genetic Toxicology Program.

OSHA PEL: TWA 0.05 mg/m<sup>3</sup> (skin)

ACGIH TLV: TWA 0.5 mg/m<sup>3</sup> (skin)

NIOSH REL: TWA (Polychlorinated Biphenyls) 0.001 mg/m<sup>3</sup>

THR: Poison by intravenous route. Moderately toxic by ingestion and intraperitoneal routes. A suspected human carcinogen. An experimental carcinogen and neoplastigen. Experimental teratogenic and reproductive effects. Mutagenic data. When heated to decomposition it emits toxic fumes of Cl<sup>-</sup>. Used in heat transfer, hydraulic fluids, lubricants, and insecticides. See also POLYCHLORINATED BIPHENYLS. For further information, see Chlorinated Diphenyls. Vol. 1, No. 3 of *DPIM Report*.

PJN250

HR: 3

## POLYCHLORINATED BIPHENYL (AROCLOR 1260)

CAS: 11096-32-5

NIOSH: TQ 1362000

PROP: Composed of 12% penta-, 38% hexa-, 41% hepta-, 8% octa- and 1% nonachlorobiphenyls (FCTXAV 12.-63.74).

## SYNS:

AROCHLOR 1260  
AROCLOR 1260  
CHLORODIPHENYL (60% Cl)

CLOPHEN A60  
PHENOCLOR DP6

## TOXICITY DATA:

cyt-rat-ori 1080 mg/kg/26W-C  
ori-rat TDLo: 1675 mg/kg  
(MGN): REP  
scu-mus TDLo: 143 mg/kg (21D  
post): REP  
ori-rat TDLo: 4380 mg/kg/83W-  
C: CAR  
ori-rat TD : 4992 mg/kg/2Y-C:  
CAR  
ori-rat LD50: 1315 mg/kg  
skn-rbt LDLo: 2000 mg/kg

## CODEN:

APTOD9 19.A16.80  
FCTXAV 12.63.74  
ENPBBC 5.54.75  
JNCIAM 55.1453.75  
TXAPA9 75.278.34  
FCTXAV 12.63.74  
ARVPAX 14.139.74

IARC Cancer Review: Animal Limited Evidence IMEMDT 18.43.78; Human Limited Evidence IMEMDT 18.43.78.

NIOSH REL: TWA (Polychlorinated Biphenyls) 0.001 mg/m<sup>3</sup>

THR: Moderately toxic by ingestion and skin contact. A suspected human carcinogen. An experimental carcinogen. Experimental reproductive effects. Mutagenic data. When heated to decomposition it emits highly toxic fumes of Cl<sup>-</sup>. Used in heat transfer, hydraulic fluids, lubricants, and insecticides. See also POLYCHLORINATED BIPHE-



NYLS. For further information, see Chlorinated Diphenyls, Vol. 1, No. 3 of *DPIM Report*.

**PJN500** **HR: 3**  
**POLYCHLORINATED BIPHENYL (AROCLOR 1262)**

CAS: 37324-23-5 NIOSH: TQ 1364000

SYNS:  
 AROCLOR 1262 CHLORODIPHENYL (62% Cl)

TOXICITY DATA: CODEN:  
 ori-rat LD50: 11300 mg/kg ARVPAX 14,139.74  
 skn-rbt LDLo: 3160 mg/kg ARVPAX 14,139.74

IARC Cancer Review: Human Limited Evidence IMEMDT 18,43,78.

NIOSH REL: TWA 1.0  $\mu\text{g}/\text{m}^3$

THR: Moderately toxic by skin contact. A suspected human carcinogen. When heated to decomposition it emits toxic fumes of  $\text{Cl}^-$ . Used in heat transfer, hydraulic fluids, lubricants, and insecticides. See also POLYCHLORINATED BIPHENYLS. For further information, see Chlorinated Diphenyls, Vol. 1, No. 3 of *DPIM Report*.

**PJN750** **HR: 3**  
**POLYCHLORINATED BIPHENYL (AROCLOR 1268)**

CAS: 11100-14-4 NIOSH: TQ 1366000

SYNS:  
 AROCLOR 1268 CHLORODIPHENYL (68% Cl)

TOXICITY DATA: CODEN:  
 ori-rat LD50: 10900 mg/kg ARVPAX 14,139.74  
 skn-rbt LDLo: 2500 mg/kg ARVPAX 14,139.74

IARC Cancer Review: Human Limited Evidence IMEMDT 18,43,78.

NIOSH REL: TWA 1.0  $\mu\text{g}/\text{m}^3$

THR: Moderately toxic by skin contact. A suspected human carcinogen. Used in heat transfer, hydraulic fluids, lubricants, and insecticides. When heated to decomposition it emits toxic fumes of  $\text{Cl}^-$ . See also POLYCHLORINATED BIPHENYLS. For further information, see Chlorinated Diphenyls, Vol. 1, No. 3 of *DPIM Report*.

**PJO000** **HR: 3**  
**POLYCHLORINATED BIPHENYL (AROCLOR 2565)**

CAS: 37324-24-6 NIOSH: TQ 1363000

SYN: AROCLOR 2565

TOXICITY DATA: CODEN:  
 ori-rat LD50: 6310 mg/kg ARVPAX 14,139.74  
 skn-rbt LDLo: 3160 mg/kg ARVPAX 14,139.74

IARC Cancer Review: Human Limited Evidence IMEMDT 18,43,78.

NIOSH REL: TWA 1.0  $\mu\text{g}/\text{m}^3$

THR: A suspected human carcinogen. Moderately toxic by skin contact. Mildly toxic by ingestion. When heated to decomposition it emits toxic fumes of  $\text{Cl}^-$ . Used in heat transfer, hydraulic fluids, lubricants, and insecticides. See also POLYCHLORINATED BIPHENYLS. For further information, see Chlorinated Diphenyls, Vol. 1, No. 3 of *DPIM Report*.

**PJO250** **HR: 3**  
**POLYCHLORINATED BIPHENYL (AROCLOR 4465)**

CAS: 11120-29-9 NIOSH: TQ 1370000

SYN: AROCLOR 4465

TOXICITY DATA: CODEN:  
 ori-rat LD50: 16 g/kg ARVPAX 14,139.74  
 skn-rbt LDLo: 3160 mg/kg ARVPAX 14,139.74

IARC Cancer Review: Human Limited Evidence IMEMDT 18,43,78.

NIOSH REL: TWA (Polychlorinated Biphenyls) 0.001  $\text{mg}/\text{m}^3$

THR: A suspected human carcinogen. Moderately toxic by skin contact. Mildly toxic by ingestion. When heated to decomposition it emits toxic fumes of  $\text{Cl}^-$ . Used in heat transfer, hydraulic fluids, lubricants, and insecticides. See also POLYCHLORINATED BIPHENYLS. For further information, see Chlorinated Diphenyls, Vol. 1, No. 3 of *DPIM Report*.

**PJO500** **HR: 3**  
**POLYCHLORINATED BIPHENYL (KANECHLOR 300)**

CAS: 37353-63-2 NIOSH: TQ 1372000

PROP: Average content: 60% trichlorobiphenyl, 23% tetrachlorobiphenyl, 17% dichlorobiphenyl, 1% pentachlorobiphenyl (IARC\*\* 7.262,74).

SYN: KANECHLOR 300

IARC Cancer Review: Animal Limited Evidence IMEMDT 18,43,78; Human Limited Evidence IMEMDT 18,43,78; Animal Limited Evidence IMEMDT 7,261,74.

NIOSH REL: TWA (Polychlorinated Biphenyls) 0.001  $\text{mg}/\text{m}^3$

THR: A suspected human carcinogen. Used in heat transfer, hydraulic fluids, lubricants, and insecticides. When heated to decomposition it emits toxic fumes of  $\text{Cl}^-$ . See also POLYCHLORINATED BIPHENYLS. For further information,

tion. see Chlorinated Diphenyls. Vol. 1, No. 3 of *DPIM Report*.

**PJ0750** HR: 3  
**POLYCHLORINATED BIPHENYL (KANECHLOR 400)**

CAS: 12737-87-0 NIOSH: TQ 1374000

PROP: Average content: 44% tetrachlorobiphenyl, 33% trichlorobiphenyl, 16% pentachlorobiphenyl, 5% hexachlorobiphenyl, 3% dichlorobiphenyl (LARC\*\* 7,262,74).

**SYNS:**

KANECHLOR 400

KC-400

**TOXICITY DATA:**

ori-rat TDLo: 10500 µg/kg

(1-21D preg): TER

ori-rat TDLo: 52500 µg/kg

(1-21D preg): REP

ori-rat TDLo: 263 mg/kg (1-21D

preg): REP

ori-rat TDLo: 6750 mg/kg/69W-

I: NEO

ori-hmn TDLo: 28 mg/kg: SKN

ori-rat LD50: 1340 mg/kg

**CODEN:**

SKEZAP 15.252.74

SKEZAP 15.252.74

SKEZAP 15.252.74

GANNA2 64.105.73

FKIZA4 62.104.71

SKEZAP 15.252.74

IARC Cancer Review: Animal Limited Evidence IMEMDT 7,261,74, IMEMDT 18,43,78; Human Limited Evidence IMEMDT 18,43,78.

NIOSH REL: TWA (Polychlorinated Biphenyls) 0.001 mg/m<sup>3</sup>

THR: A suspected human carcinogen. An experimental neoplastigen. Experimental teratogenic and reproductive effects. Human systemic effects by ingestion: dermatitis, sweating. When heated to decomposition it emits toxic fumes of Cl<sup>-</sup>. See also POLYCHLORINATED BIPHENYLS. For further information, see Chlorinated Diphenyls. Vol. 1, No. 3 of *DPIM Report*.

**PJP000** HR: 3  
**POLYCHLORINATED BIPHENYL (KANECHLOR 500)**

CAS: 37317-41-2 NIOSH: TQ 1376000

PROP: Average content, 55% pentachlorobiphenyl, 26.5% tetrachlorobiphenyl, 12.3% hexachloro biphenyl and 5% trichlorobiphenyl (JNCIAM 51,1637,73).

**SYNS:**

KANECHLOR 500

KC-500

**TOXICITY DATA:**

ori-rat TDLo: 550 mg/kg (1-21D

preg): TER

ori-rat TDLo: 140 mg/kg (15-21D

preg): REP

ori-mus TDLo: 1260 mg/kg

(1-21D preg): REP

**CODEN:**

OFAJAE 53.93.76

OFAJAE 53.105.76

ASBDD9 4.163.80

scu-mus TDLo: 4 g/kg (6-10D

preg): TER

scu-mus TDLo: 300 mg/kg

(6-15D preg): TER

ori-mus TDLo: 13 g/kg/32W-C:

CAR

ori-mus TD : 23 g/kg/32W-C:

CAR

TXCYAC 19.49.81

TXCYAC 19.49.81

NAIZAM 25.635.74

JNCIAM 51.1637.73

IARC Cancer Review: Human Limited Evidence IMEMDT 18,43,78; Animal Limited Evidence IMEMDT 18,43,78; Animal Sufficient Evidence IMEMDT 7,261,74.

NIOSH REL: TWA (Polychlorinated Biphenyls) 0.001 mg/m<sup>3</sup>.

THR: An experimental carcinogen and a suspected human carcinogen. Experimental teratogenic and reproductive effects. When heated to decomposition it emits toxic fumes of Cl<sup>-</sup>. Used in heat transfer, hydraulic fluids, lubricants, and insecticides. See also POLYCHLORINATED BIPHENYLS. For further information, see Chlorinated Diphenyls. Vol. 1, No. 3 of *DPIM Report*.

**PJP100** HR: 3  
**POLYCHLORINATED DIBENZOFURANS**

NIOSH: TQ 1377000

PROP: Impurities in polychlorinated biphenyls-PCB. (TXAPA9 45,209,78).

**SYN: PCB**

**TOXICITY DATA:**

ori-mus LD50: 184 mg/kg

ipr-mus LDLo: 100 mg/kg

scu-mus LDLo: 200 mg/kg

**CODEN:**

TXAPA9 45,209,78

TXAPA9 45,209,78

TXAPA9 45,209,78

THR: Poison by ingestion, subcutaneous and intraperitoneal routes. When heated to decomposition they emit toxic fumes of Cl<sup>-</sup> and NO<sub>x</sub>.

**PJP250** HR: 3  
**POLYCHLORINATED TERPHENYL**

CAS: 61788-33-8 NIOSH: WZ 6500000

PROP: Kanechlor carbon consists of 95% polychlorinated terphenyl and 5% PCB (CALEDQ 4,271,78).

**SYN: KANECHLOR 500**

**TOXICITY DATA:**

ori-mus TD : 10 g/kg/24W-C:

ETA

ori-mus TDLo: 11 g/kg/24W-C:

CAR

**CODEN:**

JTSCDR 3,259,78

CALEDQ 4,271,78

Reported in EPA TSCA Inventory.

THR: An experimental carcinogen and tumorigen. When heated to decomposition it emits toxic fumes of Cl<sup>-</sup>. See also POLYCHLORINATED BIPHENYLS.

# CHLORODIPHENYL — 42% CHLORINE

CAS: 53-69-21-9

Polychlorinated biphenyl; PCB; Arochlor 1242

C<sub>12</sub>H<sub>6</sub>Cl<sub>4</sub> (Approximate)

Skin

TLV-TWA, 1 mg/m<sup>3</sup>\*

A colorless to dark brown liquid, 42% PCB has a mild hydrocarbon odor. Its physicochemical properties include:

Molecular weight: 258

Specific gravity:

Melting point: -18.89°C

Boiling point: between 325° and 366.11°C

Vapor pressure:  $1 \times 10^{-4}$  torr at 20°C

Closed cup flash point: 349°F (176.11°C)

It is insoluble in water.

PCBs are in insulating liquids (Askarel), synthetic rubber, plasticizers, flame retardants, floor tile, printer's ink, coatings for paper and fabric, brake linings, paints, automobile body sealants, investment casting waxes (decachlorobiphenyl wax), asphalt, adhesives, and similar products.

Exposure to the vapor and fume of chlorodiphenyl may result in acne,<sup>11</sup> irritation of respiratory passages and injury to the liver.<sup>12</sup> Meigs<sup>13</sup> reported seven cases of mild to moderate chloracne among workers exposed to concentrations of the order of 0.1 mg/m<sup>3</sup> of the vapors of chlorinated diphenyl. The material was shown to be absorbed through the skin causing fatty degeneration of the liver.<sup>14</sup>

Several deaths due to atrophy of the liver occurred among workers exposed to the fumes of chlorodiphenyls and chloronaphthalenes.<sup>15</sup> Relatively few, if any, reports of systemic poisoning of workers exposed only to chlorinated diphenyl have appeared.

Ouw et al<sup>16</sup> evaluated exposure and health conditions in an electrical plant. Thirty-four employees occupationally exposed to Arochlor 1242, at concentrations between 0.32 and 2.22 mg/m<sup>3</sup>, for 5 to 23 years, complained of burning of the eyes, face and skin. There were some abnormal values in hepatic function tests, but the mean for the group was within the normal range.

\* In 1985 the STEL appeared on the Notice of Intended Changes as a deletion with the TWA value retained.

Treon et al<sup>17</sup> found chlorinated diphenyl (containing 42% chlorine) to be without detectable effect on laboratory animals after 150 seven-hour exposures at 1.9 mg/m<sup>3</sup>, and that 24 seven-hour exposures at 3.6 mg/m<sup>3</sup> were probably without effect. Elkins<sup>18</sup> recorded levels in excess of 10 mg/m<sup>3</sup> in a condenser plant, and stated that such concentrations were unbearably irritating.

Cook,<sup>19</sup> on the basis of Drinker's work, suggested 1 mg/m<sup>3</sup> as the time-weighted TLV of chlorodiphenyls.

It is believed that a time-weighted average TLV of 1 mg/m<sup>3</sup> will offer reasonably good protection against systemic intoxication, but may not guarantee complete freedom from chloracne. However, the Committee is currently reviewing this compound.

At this time, the Committee recommends the deletion of the STEL until additional toxicological data and industrial hygiene experience become available to provide better base for quantifying on a toxicological basis what the STEL should be. The reader is encouraged to review the section on *Excursion Limits* in the Introduction to Chemical Substances of the current TLV booklet for guidance and control of excursions above the TLV-TWA, even when the 8-hour TWA is within the recommended limits.

Other recommendations: As of 1977, nine nations had accepted the 1 mg/m<sup>3</sup> limit. No other values were listed. In that year NIOSH recommended that the limit for all polychlorinated diphenyls be 0.001 mg/m<sup>3</sup> or less.<sup>11</sup> The 1978 Swedish list carries 0.01 mg/m<sup>3</sup> for polychlorinated diphenyls.

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**Appendix B**  
**General Safety Rules**

# HEALTH AND SAFETY PROCEDURES

SUBJECT:  GENERAL SAFETY RULES	NUMBER: 5	PAGE: 1 OF 3
	DATE PUBLISHED:	April 23, 1991
	DATE REVISED:	May 3, 1994

## 1.0 POLICY

The following rules generally apply in all areas of safety.

## 2.0 PURPOSE

This procedure provides project managers and personnel with a list of fundamental safety rules not specific covered in other health and safety procedures.

## 3.0 GENERAL HEALTH AND SAFETY RULES

- 3.1 Each office/project site will have the appropriate OSHA poster (state or Federal) posted prominently.
- 3.2 Each employee, as a condition of employment, is required to comply with the health and safety procedures and the site safety plan governing in each area the employee is required to work.
- 3.3 Project managers are to review records of each employee to be assigned to work on projects involving hazardous materials and assure that all requirements pertaining to health and safety such as medical surveillance and training are in compliance.
- 3.4 No one will initiate work on a project involving hazardous materials until appropriate training required by regulation, contract and/or health and safety procedures have been implemented.
- 3.5 All employees are directed to immediately bring to the attention of the Site Supervisor or site safety officer any unsafe condition, practice or circumstance.
- 3.6 The following practices are expressly forbidden during operations on hazardous materials sites:
  - Smoking, eating, or drinking while on site except in designated areas;
  - Ignition of flammable or reactive materials;
  - Entry on site without proper safety equipment;
  - Conduct of operations on site without backup personnel as described in the site safety plan;
  - Wearing of facial hair which may interfere with a respiratory seal on a job site which may require respiratory protection; and
  - Wearing of contact lenses on a hazardous materials site.

## HEALTH AND SAFETY PROCEDURES

SUBJECT:  GENERAL SAFETY RULES	NUMBER: 5	PAGE: 2 OF: 3
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- 3.7 A daily safety meeting will be held at hazardous materials sites to review site hazards, changes in levels of personal protective equipment, special safety precautions, and emergency response procedures. See Health and Safety Procedure No. 10.
- 3.8 Every accident is to be reported to the Site Supervisor immediately, whether or not anyone is injured.
- 3.9 Employees may not alter or attempt to repair any item of safety equipment unless specifically authorized and qualified.
- 3.10 An employee must not attempt to move or lift heavy or bulky objects beyond his capacity.
- 3.11 Possession or use of intoxicants or drugs on company premises or job sites is prohibited. Employees may not report for work or perform duties while under the influence of intoxicants or drugs. Prescription drugs are to be reported to the Site Supervisor and shall not impair the ability of the worker to work safely.
- 3.12 Walking under or working under a suspended load is not permitted.
- 3.13 Legible and understandable precautionary labels will be prominently affixed to containers or raw materials, intermediates, products, by-products, mixtures, scrap, waste, debris, and contaminate clothing, per DOT, EPA, OSHA, or other applicable regulations.
- 3.14 A sufficient number of fire extinguishers, as determined on site with a minimum rating of 10B:C will be strategically located throughout the areas where active work is progressing so as to limit the travel distance by personnel to less than 75 linear feet.
- 3.15 All personnel will avoid contact with potentially contaminated substances. Walking through puddle or mud, kneeling on the ground, or leaning against drums is to be avoided.
- 3.16 Monitoring equipment will not be placed on potentially contaminated surfaces.
- 3.17 Personnel on site will use the "buddy" system (pairs). Buddies should prearrange hand signals for communication in case of lack of radios or radio breakdown. Communication or visual contact will be maintained between crew members at all time.
- 3.18 Contaminated protective equipment will not be removed from the regulated area until it has been cleaned or properly packaged and labeled.
- 3.19 Employees will not be permitted to exit the contamination reduction zone until contaminated clothing and equipment have been removed and employees have washed their hands and face with soap and water. The only exception is in an emergency situation.

# HEALTH AND SAFETY PROCEDURES

SUBJECT:  GENERAL SAFETY RULES	NUMBER: 5	PAGE: 3 OF: 3
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- 3.20 Removal of materials from protective clothing equipment by blowing, shaking, or any other means which may disperse materials into the air is prohibited.
- 3.21 Portable or fixed emergency shower/eyewash stations may be required by the site safety plan for the regulated area.
- 3.22 A deluge shower or hose and nozzle will be available in the contamination reduction zone to wash down heavily contaminated personnel before doffing protection clothing.
- 3.23 As appropriate, equipment on site will be bonded and grounded spark proof, and explosion resistant. Ground fault interrupters will be utilized. See Health and Safety Procedure No. 27.
- 3.24 Guard rails and toe boards will be in place for all work on elevated platforms exceeding 6 feet height.
- 3.25 Accidents and injuries can and do occur in office environments. Attention and safety awareness are important in offices as well as job sites. Some commonly violated office safety rules include:
- Aisles, passageways or corridors are not to be blocked at any time;
  - Desk drawers, cabinet doors and file cabinet drawers are to be kept closed when not in use;
  - Use a proper platform, not a swivel chair for reaching in places; and
  - Fire extinguishers are to be readily available in each office and an emergency evacuation plan implemented.

IAWP\FORMS\H&S\PROCEDURES\GSR.5

**Appendix C**  
**Hearing Conservation**

200024



# HEALTH AND SAFETY PROCEDURES

SUBJECT:  HEARING CONSERVATION	NUMBER: 42	PAGE: 1 OF: 3
	DATE PUBLISHED:	February 8, 1995
	DATE REVISED:	

## 1.0 POLICY

Preventing hearing loss due to excessive workplace noise exposure is a primary objective of EARTH TECH. To achieve this objective, the following policy on hearing conservation has been instituted to comply with 29 CFR 1910.95.

## 2.0 REQUIREMENTS

All employees exposed to 85 dBA time-weighted average (TWA) for eight hours will be included in a Hearing Conservation Program. All employees exposed to 90 dBA (TWA) for eight hours will be required to wear hearing protectors.

## 3.0 AUDIOMETRIC HEARING TESTS

1. Qualified medical personnel will conduct a baseline audiogram on all EARTH TECH personnel who meet the criteria of noise exposure as stated in this policy. Thereafter, annual audiograms will be compared to the baseline exam. All field personnel will receive a baseline audiogram prior to employment.
2. The frequencies tested will be 250, 500, 1,000, 2,000, 3,000, 4,000, 6,000, and 8,000 Hz. When not feasible due to equipment incapability or background ambient noise, 250 Hz and 8,000 Hz may be excluded.
3. When a Standard Threshold Shift (STS) is noted between the last valid baseline and the annual audiogram, the following steps will be taken:
  - a. A retest will be conducted within 30 days to confirm the STS. The employee will not be exposed to workplace/hobby noise for 14 hours and/or will be provided with adequate hearing protection prior to testing.
  - b. If the STS persists, ear protection will be upgraded to one with a greater Noise Reduction Rating (NRR).
  - c. The employee will be counseled, and EARTH TECH will obtain information regarding the employee's possible noise exposure away from the workplace or existing ear pathology.
  - d. Qualified medical personnel will review the audiograms. This group will determine the need for medical referral.
  - e. The employee will be notified in writing by the Industrial Hygiene Department of the STS, within 21 days of determination, as required by OSHA.
  - f. The employee's supervisor will be notified of the shift in hearing threshold.



**Appendix C**  
**Hearing Conservation**

# HEALTH AND SAFETY PROCEDURES

SUBJECT:

HEARING CONSERVATION

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- g. If the employee who has experienced an STS is exposed to 85 dBA for 8 hours or 80 dBA for 4 hours, mandatory use of ear protection is required.
- h. Temporary employees will receive audiograms during their exit physicals.

## 4.0 MONITORING OF NOISE LEVELS

The Health and Safety Officer will monitor personal and environmental noise levels using noise dosimeters to determine the need for employees to be enrolled in the Hearing Conservation Program. EARTH TECH will periodically monitor noise levels during site operations to document personnel exposure levels. EARTH TECH engineering controls will be implemented if boundary noise levels exceed 10 dBA above background levels.

## 5.0 HEARING PROTECTORS

- A. Hearing protection will be mandatory for all employees exposed to 90 dBA for 8 hours and 85 dBA for 4 hours.
- B. Hearing protectors will be made available to all employees exposed to 85 dBA for 8 hours or greater.
- C. Hearing protection will be mandatory for all employees exposed to 85 dBA for 8 hours and who have experienced an STS.
- D. The Industrial Hygiene Department will fit and initially issue all hearing protection. All employees issued hearing protection will be trained in the proper use, care, and maintenance of the protectors.
- E. EARTH TECH will offer at least three hearing protector devices.
- F. All hearing protection will carry a NRR of at least 26 dBAs and be approved by the Industrial Hygiene Department prior to use in the field.

## 6.0 RETENTION OF RECORDS

- A. Noise exposure measurement records will be retained for three years.
- B. Audiometric test records will be retained for the duration of employment, plus 40 years.
- C. Annual employee training session documentation will be retained for the duration of employment.

# HEALTH AND SAFETY PROCEDURES

SUBJECT:  HEARING CONSERVATION	NUMBER: 42	PAGE: 3 OF: 3
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## 7.0 TRAINING PROGRAM

- A. All employees exposed to noise at or above 85 dBA (TWA) for 8 hours, or 80 dBA (TWA) for 12 h will participate in an annual training program.
- B. The training program will focus on:
- The effects of noise;
  - The purpose of hearing protectors, their advantages and disadvantages, and use and care; and
  - The purpose and procedure of audiometric testing.

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**Appendix D**

**Heat Stress**

# HEALTH AND SAFETY PROCEDURES

SUBJECT:  HEAT STRESS	NUMBER: 17	PAGE: 1 OF: 3
	DATE PUBLISHED: April 23, 1991	
	DATE REVISED: May 3, 1994	

## 1.0 POLICY

Project supervision is to be aware of the symptoms and causes of heat-related illnesses and take appropriate steps to prevent their occurrence.

## 2.0 PURPOSE

This procedure describes the causes, symptoms, treatment, and/or prevention of heat-related illness.

## 3.0 GENERAL INFORMATION

- 3.1 Heat-related illnesses are generally caused by the body's inability to remove metabolic heat while being exposed to excessive environmental heat.
- 3.2 A period of adjustment or acclimatization is necessary before maximum tolerance to heat is acquired. Most workers require 7 to 10 working days of gradually increasing workload to become fully acclimatized.
- 3.3 The body's core temperature must be maintained below 100 degrees Fahrenheit or else heat stress can occur.
- 3.4 Pulse rate is another good indicator of heat stress. The pulse rate after one minute of recovery should be less than 110 beats per minute.
- 3.5 Heat-related illnesses are caused by the loss of water and electrolytes.

## 4.0 HEAT-RELATED ILLNESSES

- 4.1 Heat rash can be caused by continuous exposure to hot and humid air.

Signs and Symptoms: The condition is characterized by a localized red skin rash and reduced sweating. Aside from being a nuisance, the ability to tolerate heat is reduced.

Treatment: Keep skin hygienically clean and allow it to dry thoroughly after using chemical protective clothing.

- 4.2 Heat cramps are caused by profuse perspiration with inadequate fluid intake and salt replacement.

Signs and symptoms: Muscle spasm and pain in the extremities and abdomen.

# HEALTH AND SAFETY PROCEDURES

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DATE PUBLISHED: April 23, 1991

DATE REVISED: May 3, 1994

Treatment: Remove affected person to a cool place and give sips of salted water (1 teaspoon of salt to 1 quart of water). The salted water should quickly mitigate the cramps. Manual pressure may also be applied to the cramped muscles.

- 4.3 Heat exhaustion is a mild form of shock caused by sustained physical activity in heat and profuse perspiration without adequate fluid and salt replacement.

Signs and Symptoms: Weak pulse; shallow breathing; pale, cool, moist (clammy) skin; profuse sweating; dizziness; fatigue.

Treatment: Remove affected person to a cool place and remove as much clothing as possible. Give sips of salted water and fan the person continually to remove heat by convection. CAUTION: Do not allow the affected person to become chilled -- treat for shock if necessary.

- 4.4 Heatstroke is the most severe form of heat stress; the body must be cooled immediately to prevent severe injury and/or death.

Signs and Symptoms: Red, hot, dry, skin; body temperature of 105 degrees Fahrenheit or higher; no perspiration; nausea; dizziness and confusion; strong, rapid pulse; coma.

Treatment: Heat stroke is a true medical emergency. Transportation of the victim to a medical facility must not be delayed. Prior to transport, remove as much clothing as possible and wrap the victim in a sheet soaked with water. Fan vigorously while transporting to help reduce body temperature. Apply cold packs, if available; place under the arms, around the neck, or any other place where they can cool large surface blood vessels. If convulsions develop, prevent victim from biting his tongue. If transportation to a medical facility is delayed, reduce body temperature by immersing victim in an ice/water bath (however, be careful not to over chill the victim once body temperature is reduced below 102 degrees Fahrenheit). If this is not possible, keep victim wrapped in a sheet and continuously douse with water and fan.

## 5.0 SPECIFIC REQUIREMENTS

- 5.1 A section of site-safety plans will address heat stress if the ambient temperature is expected to exceed 70 degrees Fahrenheit.
- 5.2 The site-safety plan will discuss work-rest cycles and provisions for monitoring the level of heat stress (i.e., pulse rate).
- 5.3 Workers are to be advised not to drink caffeinated or alcoholic beverages because they increase the rate of body water loss.

# HEALTH AND SAFETY PROCEDURES

SUBJECT:  HEAT STRESS	NUMBER: 17	PAGE: 3 OF: 3
	DATE PUBLISHED:	April 23, 1991
	DATE REVISED:	May 3, 1994

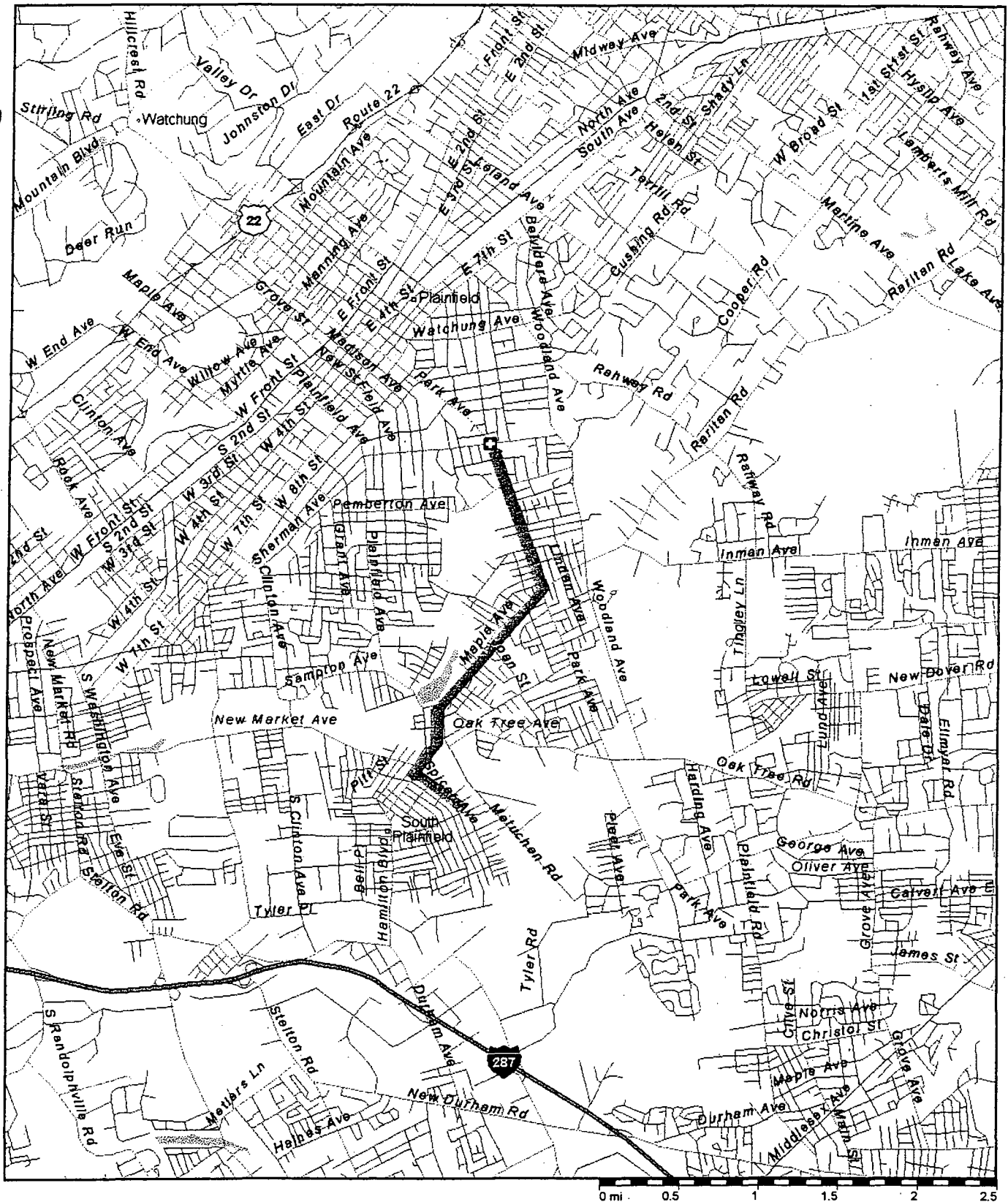
- 5.4 Increase dietary salt or lightly salted (0.2 percent) water is adequate to replace lost salt. Salt tablet are not to be used.
- 5.5 If juice or electrolyte drinks are used, they should be diluted prior to drinking.
- 5.6 Thirst is not an adequate indicator of body water loss. Workers are to drink at least small amount of water on each break.
- 5.7 Workers are to rest when any of the symptoms described above are present. The buddy system is mandatory, as most often the potential victim will not be aware of any symptoms. Watch out for each other.

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**Appendix E**  
**Hospital Map**

200033



MICROSOFT **Streets Plus**

Map Title 1 DIRECT RT. ON HAMILTON, RT. ON MAPLE (AT DUNKIN DONUTS)  
 Map Title LEFT ON PARK AVE. HOSPITAL IS ON LEFT.

**Appendix F**

**Personnel Acknowledgement**

**HEALTH AND SAFETY PLAN SIGN-OFF SHEET  
FOR Cornell-Dubilier Site**

I have read and fully understand the contents of the Earth Tech Health and Safety Plan.

Printed Name and Company	Date	Signature
DAVID V. BARDOSIK ETRS	4/3/98	
Arthur Long ETR	4/3/98	A.R. Long
Ed Ould ETRS	4/3/98	Ed Ould
Jennifer R McKeelway ETR WOODTECH	4/3/98	Jennifer R McKeelway
SOLUCORN GAS/ENVI KIESELAW SALOWSKA	4/3/98	
SOLUCORN ARTUR CHMURAWSKI KIRKOWSKI	4/3/98	
SOLUCORN SOBCEK	4/3/98	Sobek
MIKE CONNOLLY ON-SITE ENVIRONMENTAL	4/4/98	Mike Connolly
Cissy Pawlicki Onsite	4/4/98	Cissy Pawlicki
Kevin M Spence - ON-SITE	4/4/98	Kevin M Spence
MIKE CONNOLLY - ON-SITE	4/9/98	Mike Connolly
KELVIN BROWN - ON-SITE	4/8/98	Kelvin Brown
Fred Vitvanc. START	4/8/98	Fred Vitvanc
MILBERT PAWLOWIA	4/8/98	Milbert Pawlowia
MIECZYSLAW GOJK	4/8/98	Mieczyslaw Gojk
Eric Wilson	4/8/98	Eric Wilson
Clifford Holley	4-15-98	Clifford Holley
Lloyd Warren	4/18/98	Lloyd Warren
Michael Brown	4/20/98	Michael Brown
Ilene Presworsky	4/20/98	Ilene Presworsky

EAWPCORP/BOILERPLINEWHASP



# NEUTRAL pH EXTRACTOR DETERGENT

**Product Description: #9291-00**

A product formulated for use with an extraction machine that cleans without browning. Has a very pleasant fragrance.

**Advantages:**

Low foam, Neutral pH, no browning, quick drying, pleasant fragrance. Will not remove the new generation carpet fiber anti-soil treatments built into the newer carpets. May remove browning in some instances. Contains Optical brighteners.

**Uses:**

For use with extraction machines on most carpets.

**Directions:**

Use 3-10 ounces per gallon of water. Apply, extract and allow to dry. Always test first for color fastness before proceeding.

**Specifications:**

**Active Ingredients:** 15%

**pH:** 6.5-7.0

**Color:** Colorless

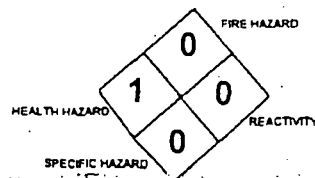
**Solubility in Water:** Complete

**Odor:** Very pleasant

**Flash Point:** None

**Viscosity:** Water Thin

**Weight per Gallon:** 8.5 Lbs.



P.O. BOX 022580 • 18 BRIDGE STREET • BROOKLYN, NY 11202

(718) 855-6565 • Fax (718) 875-6474

**GB**  
**JANITORIAL SUPPLY INC.**

732-271-0535

200037

**HEALTH AND SAFETY PLAN SIGN-OFF SHEET  
FOR Cornell-Dubilier Site**

I have read and fully understand the contents of the Earth Tech Health and Safety Plan.

Printed Name and Company	Date	Signature
DAVID V. BAERSIK ETRS	4/3/98	<i>David Baersik</i>
Arthur Long ETR	4/3/98	<i>A.R. Long</i>
Ed Ould ETRS	4/3/98	<i>Ed Ould</i>
Jennifer R McElwey ETR	4/3/98	<i>Jennifer R McElwey</i>
SOLUCORN GAS ENVIRO <small>WOODIECH</small>	4/3/98	<i>Woodiech</i>
SOLUCORN <small>KIIESLAW JALEWSKI</small>	4/3/98	<i>Kiieslaw</i>
SOLUCORN <small>ARTUR</small>	4/3/98	<i>Artur</i>
SOLUCORN <small>CHMURAWSKI KIRCHSTOF</small>	4/3/98	<i>Chmura</i>
SOLUCORN SOBZAK	4/3/98	<i>Sobzak</i>
MIKE CONNOLLY ON SITE <small>ON SITE</small>	4/4/98	<i>Mike Connolly</i>
Cissy Pawlicki Onsite	4/4/98	<i>Cissy Pawlicki</i>
Hubert M Spence - ON SITE	4/4/98	<i>Hubert M Spence</i>
<i>D. Hankan</i>	4/4/98	<i>EPD</i>
James Keane	4/13/98	<i>Keane - EPA</i>
<i>M. Kelly</i>	4/13/98	<i>M. Kelly</i>
ROSAR W GAMBINO	4/23/98	<i>Rosario Gambino</i>
Rob McANDREWS	4/25/98	<i>Rob McAndrews</i>
Ryan Erwin	3/7/00	<i>Ryan Erwin</i>
JASON R. HORNBER	3/7/00	<i>Jason R. Hornber</i>
Robert Fred Thomas	3/7/00	<i>Robert F. Thomas</i>
William Young	3/7/00	<i>William Young</i>
MARK CONLEY <small>LHWPCORP BOILERPLANE W/ASP</small>	3-7-00	<i>Mark Conley</i>

**HEALTH AND SAFETY PLAN SIGN-OFF SHEET  
FOR Cornell-Dubilier Site**

I have read and fully understand the contents of the Earth Tech Health and Safety Plan.

Printed Name and Company	Date	Signature
Wayd Warner	02/08/99	Wayd Warner
EUGENE Cint ROW	02/08/99	Eugene Cint Row
ROY M =KENZIE	02/08/99	Roy McKenzie
J. Galaf	2/8/99	J. Galaf
J. Holbe	2/2/00	J. Holbe
Kevin Green	2/18/99	Kevin Green
Ryan Ewan	3/7/00	Ryan Ewan
Dean Mason	3/7/00	Dean Mason

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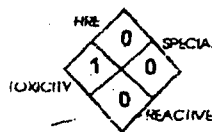
# MATERIAL SAFETY DATA SHEET

Prepared According to 29 CFR 1910.1200

N.E. = NOT ESTABLISHED  
N.A. = NOT APPLICABLE  
N.K. = NOT KNOWN

## HAZARD RATING

4 - EXTREME  
3 - HIGH  
2 - MODERATE  
1 - SLIGHT  
0 - INSIGNIFICANT



### SECTION 1 - PRODUCT IDENTIFICATION

Manufacturer Name: **OSR CLEANING SPECIALTIES**  
Address: **18 BRIDGE STREET, BROOKLYN, NY 11202**  
Trade Name: **NEUTRAL PHEXTRACTOR DETERGENT**  
Chemical Family:

Emergency Telephone No.: **(718) 855-6565**

Product Type: **CARPET CARE PRODUCT**  
Formula: **Proprietary**

### SECTION 2 - HAZARDOUS INGREDIENTS

Chemical Name/Common Name	Cas. No.	Percent (optional)	TLV (Source)
<b>ALKYL ARYL POLYETHER ALCHOL</b>	<b>61725-89-1</b>	<	<
<b>DIETHYLENE GLYCOL MONOMETHYLE ETHER</b>	<b>111-77-3</b>	<	<

### SECTION 3 - PHYSICAL DATA

Boiling Point: **212 °F** Specific Gravity = **1.02**  
(°F.) (H<sub>2</sub>O = 1.0) ± 0.0005 pH **6.5-7.0** ± .05  
Vapor Pressure = **N.A.** Vapor Density = **N.A.**  
(mmHg) (Air=1)  
Solubility in Water **X Complete** — Insoluble (or dispersible) — Emulsifiable (or partial) — Slight  
Evaporation: Rate (vs H<sub>2</sub>O) — Faster **X Slower** — About the Same  
Appearance and Odor: **CLEAR COLORLESS LIQUID, PLEASANT ODOR**

### SECTION 4 - FIRE AND EXPLOSION HAZARD DATA

Flash Point = \_\_\_ °F \_\_\_ °C  
(T.C.C.) \_\_\_ (T.O.C.) \_\_\_ **X None to Boiling** **N.A.** Flammable Limits **N.A.** Upper **N.A.** Lower  
Extinguishing Media: **X None Needed** — CO<sub>2</sub>, Dry Chemical, Foam  
Special Fire Fighting Procedures: **X None (Aqueous Product)** — Firefighters to use self contained breathing apparatus.  
Unusual fire and Explosion Hazards: **X None (Aqueous Product)** — Firefighters to use self contained breathing apparatus.

### SECTION 5 - REACTIVE DATA

Stability: **Stable** Incompatibility:  
Hazardous Decomposition Products = **CARBON MONOXIDE**  
SECTION 6 - HEALTH HAZARDS  
Threshold Limit Value - Product as is:  
(See Section 2 for Ingredient TLV) **X Non Established** — Not Applicable Source:  
Primary Routes of Exposure: \_\_\_ Eyes \_\_\_ Skin **X Oral** \_\_\_ Inhalation \_\_\_ Other:  
Signs and Symptoms of Over-exposure (Acute): **NO KNOWN HEALTH HAZARDS**  
Signs and Symptoms of Over-exposure (Chronic): **WILL IRRITATE EYES ON DIRECT CONTACT**  
Medical conditions aggravated by Over-exposure: **NOT KNOWN**  
Carcinogen or Suspect **N.A.**  
Carcinogen Ingredients **NO** **NO NTP** **NO IARC** **NO OSHA** **X None**

### SECTION 7 - EMERGENCY AND FIRST AID PROCEDURES

Eyes: **Flush with water for 15 minutes. See physician immediately.**  
Skin: **X Flush with warm soapy water for 15 minutes.** \_\_\_ Flush with vinegar, rinse with water.  
Ingestion: **X Drink 3-4 glasses of water, induce vomiting.** \_\_\_ Do not induce vomiting, call physician immediately.  
Inhalation: **X No toxic vapors emitted.** \_\_\_ Move to fresh air - call physician immediately.

### SECTION 8 - SPECIAL PROTECTION INFORMATION

Respiratory Protection: **IF TLV IS EXCEEDED**  
Ventilation Requirements: \_\_\_ Local Exhaust \_\_\_ Mechanical \_\_\_ Other:  
Protective Gloves: **X Latex** \_\_\_ Neoprene  
Other Protective Clothing: \_\_\_ Rubber apron **X Splash proof face mask**

### SECTION 9 - SPILL OR LEAK PROCEDURES

Steps to be Taken if Released or Spilled: **Pick up excess with absorbent, flush area with water.**  
Waste Disposal Methods: **In accordance with Local, State, Federal Regulations.**

### SECTION 10 - STORAGE AND HANDLING INFORMATION - Do not mix with any other chemicals

Precautions to be Taken in Handling and Storage: **Store in original containers.** **X Keep from freezing**

### SECTION 11 - SECTION 313 NOTIFICATION, SARA TITLE III

**RAW MATERIAL** **CONTENT**  
**METHYL CARBITOL** **NOT MORE THAN 6%**