

Health and Safety Plan

Flow/Solids Monitoring and Sediment Thickness Characterization

Tittabawassee River, Michigan

Prepared for:

The Dow Chemical Company

November, 2003



Limno-Tech, Inc.

Environmental Engineering
Ann Arbor, Michigan

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1.0 INTRODUCTION

This section of the Site Health and Safety Plan (HASP) document defines general applicability and general responsibilities with respect to compliance with Health and Safety programs.

1.1 Scope and Applicability of the Site Health and Safety Plan

The purpose of this Site Health and Safety Plan is to define the requirements and designate protocols to be followed at the Site during the dry and wet weather sampling program for combined sewer overflows and receiving waters. This Health and Safety Plan applies specifically to work performed by employees of Limno-Tech, Inc. It sets forth the minimum safety requirements pursuant to Occupational Safety and Health Administration (OSHA) regulations. It should be acknowledged that the employees of other consulting and contracted companies will work in accordance with their own independent Health and Safety Plans, provided that the minimum requirements of this plan are fulfilled.

All personnel on site, contractors and subcontractors included, shall be informed of the site emergency response procedures and any potential fire, explosion, health, or safety hazards of the operation. This HASP summarizes those hazards in [Table 1](#) and [Appendix A](#), and defines protective measures planned for the site.

This plan must be reviewed by all personnel prior to entering and conducting activities at the site.

2.0 ORGANIZATIONAL RESPONSIBILITY/KEY PERSONNEL

LTI Technical Project Director: John Wolfe

The technical project director is responsible for staffing and the overall administration of all aspects of the project.

LTI Project Manager: Tim Dekker

The project manager is responsible for oversight of all aspects of the project including health and safety, quality assurance and on-site activities.

LTI Project Engineer/Site Safety Officer: Chris Cieciek

The project engineer/SSO is responsible for on-site activities including: sampling, quality assurance, and implementing the health and safety plan. The project engineer/SSO reports to the project manager.

QA/QC Officer: Cathy Whiting, LTI

The QA/QC officer is responsible for the development, implementation and oversight of the QA/QC program for the site, and reports to the project manager.

Health and Safety Manager: Cathy Whiting, LTI

The HSO is responsible for providing corporate health and safety support/oversight for on-site health and safety.

3.0 PERSONNEL TRAINING REQUIREMENTS

Site personnel may be required to be trained in accordance with applicable work tasks to be conducted, instrumentation/equipment to be used and OSHA regulations. At a minimum, all personnel are required to be trained to recognize the hazards on-site, the provisions of this HASP, and the responsible personnel.

4.0 SAFETY AND HEALTH RISK ANALYSIS

This HASP defines the hazards and methods to protect personnel from those hazards as identified in previous site work or background information. The evaluation of hazards is based upon the knowledge of site background. An overview of historical information concerning the Site see is included in [Appendix D](#).

The current or upcoming site activities are described in the Work Plan for Flow/Solids Monitoring and Sediment Thickness Characterization, September 2003 and will involve the following:

- Level gaging: installing and monitoring electronic level gages and staff gages
- Flow and solids gaging: recording flow data and collecting receiving water samples
- River sediment and floodplain stratigraphic measurements: collecting sediment cores
- Sediment thickness characterization: probing sediment thickness of receiving water bottom and banks.

The following subsections describe the biological, chemical and physical hazards associated with activities at the site. In addition, the protective measures to be implemented during these activities are identified.

4.1 Hazards

There are two categories of hazards that may be associated with the planned sampling activities: (1) biological and chemical exposures and (2) physical hazards.

Biological hazards that may be present during water sampling are exposure to tetanus, hepatitis, and other sewage-borne viral and bacterial diseases, as well as potential exposure to West Nile Virus and Lyme Disease due to exposure to mosquitos and ticks. The chemical hazard faced by sampling staff may include exposure to chemical wastes released by industrial discharges to the sewer system and air or exposure to preservatives used in sample bottles supplied by the laboratories. The chemicals of concern to be most aware of for the work activities to be

conducted are the dioxin/furan group of chemicals. These chemicals are known or suspected carcinogens. The primary exposure hazard associated with these chemicals is direct contact with skin, through which these chemicals can be absorbed into the body. In the environment, dioxins/furans have low solubilities in water and are primarily found adsorbed to particulate matter, especially sediments with higher organic content. Direct contact with sediments should be prevented through the use of personal protective clothing (discussed further below). Direct contact with suspended particulates in the water column and the water, itself, should be avoided also; though significant levels of dioxin/furans in the water column is not anticipated as a significant exposure hazard. Material Safety Data Sheets for a dioxin mix and dibenzofuran are provided in [Appendix A](#) and contain chemical properties, exposure hazards, handling and other pertinent information.

Accidents during sampling can occur as a result of the following hazards:

- Materials handling
- Traffic
- Boating
- Fatigue
- Weather

Although these hazards may not be especially significant under normal conditions, when combined with wet conditions, potentially poor visibility, and long working hours, they require close attention to safe work practices.

[Table 1](#) provides a list of chemicals that have been detected in the receiving waters and sediments in sampling performed by the DEQ in 2000-2002. These chemicals may pose possible exposure hazards through ingestion, inhalation, and/or skin contact. Some materials may be known or suspected carcinogens.

[Appendix A](#) presents a hazard analysis, listing hazards and preventative actions, for the potential work tasks at the site. Possible exposures to chemicals at the site during the work activities will be controlled and minimized through the use of personal protective equipment and proper standard operating procedures, as described in the following section of this HASP. Appendix A also contains representative MSDSs for the primary chemicals of concern.

No work tasks will be implemented in confined spaces. Therefore, no confined space entry procedures are provided in this HASP.

5.0 SAFETY AND HEALTH PROCEDURES

Safety and health procedures in the field include both preventive measures and steps to take during an emergency. Safeguards against biological and chemical hazards include wearing protective clothing, practicing personal hygiene, and updating immunizations. If an injury or other health-related situation occurs, emergency medical assistance may be required. The following subsections of this HASP present safety and health procedures for specific conditions

applicable to the sampling activities in addition to the hazard prevention procedures and general safety rules identified in [Appendix A](#).

5.1 Protective Clothing and Equipment

Protective clothing and equipment will be worn when work activities involve known or suspected biological, chemical or physical hazards. Hazards may occur as a result of atmospheric contamination, when vapors, gases, or particulates may be generated by site activities, or when direct contact with skin-affecting substances may occur. Full facepiece respirators protect lungs, gastrointestinal tract, and eyes against airborne toxicants. Chemical-resistant clothing protects the skin from contact with skin-destructive and absorbable biological and chemical agents.

5.1.1 Selected Protective Clothing and Equipment

The selected protective clothing and equipment for each work task to be conducted during field activities includes the following:

Level gaging: installing and monitoring electronic level gages and staff gages

- Normal work clothes – no anticipation of contact with contaminated media

Flow and solids gaging: recording flow data and collecting receiving water samples

- Rubber gloves to protect hands from contact with water
- Safety glasses or splash shields, as necessary, to protect eyes or face from contact with water
- Raingear, rubber boots and/or waders, as necessary, for protection from sample splashes/spills, instream contact and wet weather
- Steel-toed safety footwear and hardhats, as necessary, when there is a risk of injury from falling objects/equipment

River sediment and floodplain stratigraphic measurements: collecting sediment cores

- Rubber or leather gloves, as necessary, to protect hands from contact with water, sediments and coring equipment
- Safety glasses, goggles or splash shield, as necessary, to protect eyes from airborne debris and splashes during coring
- Raingear, rubber boots and/or waders, as necessary, for protection from water splashes, instream contact and wet weather
- Long sleeved shirts and pants for dry land work to prevent contact with sediments
- Steel-toed safety footwear and hardhats, as necessary, when there is a risk of injury from falling objects/equipment

Sediment thickness characterization: probing sediment thickness of receiving water bottom and banks

- Rubber or leather gloves, as necessary, to protect hands from contact with water, sediments and coring equipment
-

- Safety glasses, goggles or splash shield, as necessary, to protect eyes from airborne debris and splashes during probing
- Raingear, rubber boots and/or waders, as necessary, for protection from water splashes, instream contact and wet weather
- Long sleeved shirts and pants for dry land work to prevent contact with sediments
- Steel-toed safety footwear and hardhats, as necessary, when there is a risk of injury from falling objects/equipment

5.1.2 Modification of Selected Protective Clothing and Equipment

The level of protection provided by clothing and equipment may be upgraded or downgraded based upon a change in site conditions or findings of investigations. When a significant change occurs, the hazards should be reassessed. Some indicators of the need for reassessment are:

- Type and measured concentration of the chemical substance in the ambient atmosphere and its toxicity.
- Potential for exposure to substances in air, splashes of liquids, or other direct contact with material due to work being done.
- Knowledge of chemicals on-site along with properties such as toxicity, route of exposure, and contaminant matrix.

Reassessment of the level of protection should be conducted under the following conditions:

- Commencement of a new work phase, such as the start of sampling or work that begins on a different portion of the site.
- Change in job tasks during a work phase.
- Change of season/weather.
- When temperature extremes or individual medical considerations limit the effectiveness of protective clothing and equipment.
- Contaminants other than those previously identified are encountered.
- Change in ambient levels of contaminants.
- Change in work scope which affects the degree of contact with contaminants.

In situations where the type of contaminant, concentration, and possibilities of contact are not known, the appropriate protective clothing and equipment must be selected based on professional experience and judgment until the hazards can be better identified. Standard operating procedures for inspecting personal protective equipment are presented in [Appendix B](#).

5.2 Personal Hygiene Practices

The following personal hygiene practices are required during sampling:

- Do not eat, drink, or smoke during sampling.
 - Wash hands thoroughly after sampling, before eating, drinking or smoking.
-

- Shower thoroughly as soon as possible after completion of work.
- Launder clothes after sampling.

In addition to these personal hygiene practices, check immunization records to be sure tetanus shots are up to date (i.e., a booster given within the last 10 years).

5.3 Traffic Safety Procedures

Traffic safety procedures during sample collection from bridges should include the following:

- Station the vehicle as close to the sample collection location as possible on the side nearest oncoming traffic.
- Use the vehicle emergency flasher lights or other portable flashing lights during sampling.
- Allow adequate room around the work area to allow traffic to pass. If necessary, cordon off the sampling area using orange safety cones, barricades, or other suitable devices.
- Wear orange safety vests with reflective material at all times.

5.4 Boating Safety Procedures

The following requirements apply to personnel working in boats to collect river water samples:

- The boat should be operated only by designated, experienced staff.
- U.S. Coast Guard boating safety guidelines or equivalent should be adhered to when operating a boat during sampling activities.
- Personnel flotation devices must be worn by all staff when aboard the boat.
- The boat must be equipped with the required running lights for night-time and poor visibility conditions.
- The boat must be equipped with a safety line and life preserver.
- The boat must be equipped with an anchor and alternative means of locomotion (extra motor, floatable oars).
- The boat must be equipped with suitable signalling devices, such as an air horn and signal light.
- Weather and water conditions must be monitored (e.g., marine weather radio forecasts for storm, wave, current conditions and watercraft warnings) to determine if it is safe to be out on a water body.

5.5 Fatigue Guidelines

Although the study design and logistics will minimize this, occasionally sampling staff may be working for long periods without sleep. Lack of sleep can compound existing hazards, both during sampling and afterward when staff members must drive home. In order to help reduce the effect of fatigue on safety and job performance, sampling will always be conducted by at least a

two member team. Each member of the team is responsible for monitoring the fatigue of the other member and for assisting with alternate means of conducting work activities, transport home, etc., if it appears that a field team member is too tired to function safely and effectively.

5.6 Weather and Environmental Hazard Guidelines

Weather and environmental conditions can present a considerable challenge to conducting field activities in a safe manner. Sampling during adverse weather conditions (e.g., excessive heat or cold, storm events with precipitation, lightning, high winds) and where environmental hazards (e.g., poison ivy, biting insects, unstable slopes, falling tree limbs) are present requires an additional level of preparation, precaution and awareness.

- Monitor your surroundings for weather and physical environmental hazards.
- Wear clothing that is appropriate for protection from the elements (e.g., hot and cold weather, direct sun exposures, wind, rain, hail) and also appropriate for protection from biological, chemical or physical hazards associated with the field activities to be conducted.
- Consider the appropriateness of using sunscreens or bug repellents in light of the potential for introducing contaminants from these substance into the samples. Often suitable clothing can provide adequate protection in lieu of these products.
- Have a readily available source of potable water for personal hydration, especially during hot weather conditions.
- Monitor team members for signs of heat exhaustion, heat stroke, or hypothermia.
- Take cover during thunder and lightning storms.
- Take extra precautions to avoid slipping or tripping during wet or icy conditions
- When sampling from a boat, be sure to appropriately monitor weather, wave and current conditions to determine if it is safe to be out on a body of water.

5.7 Emergency Procedures and Medical Assistance

If an injury occurs, take the following steps:

- Prevent further injury and notify the sampling team leader and/or other appropriate personnel.
- Initiate first aid and get medical attention for the injured person immediately (see attached list of local hospitals and maps in [Appendix C](#)).
- Contact appropriate supervisors.
- Prepare an accident report (i.e., MIOSHA No. 101 Supplementary Record of Occupational Injuries and Illnesses.).

If an illness occurs, take the following steps:

- Cease or postpone sampling activities and inform appropriate supervisors.
 - Seek medical attention following procedures in accordance with insurance carrier.
-

As a follow-up to an injury or possible exposure above established exposure limits, all employees are entitled to and encouraged to seek medical attention and physical testing. Depending upon the type of exposure, it is critical to perform follow-up testing within 24-48 hours. It will be up to the employers medical consultant to advise the type of test required to accurately monitor for exposure effects.

5.8 Emergency Contact/Notification System

The following list provides names and telephone numbers for emergency contact personnel. In the event of a medical emergency, personnel will take direction from the HSO and notify the appropriate emergency organization. Local hospitals and emergency medical facilities and maps is presented in [Appendix C](#). In the event of a fire or chemical spill, the site supervisor will notify the appropriate local, state, and federal agencies.

| <u>Organization</u> | <u>Telephone</u> |
|--|------------------|
| Limno-Tech, Inc. | (734) 332-1200 |
| Emergency/Police/Fire/Ambulance | 911 |
| Hospitals/Emergency Care Facilities: | |
| Midmichigan Medical Center - Midland | (989) 839-3000 |
| St. Luke's Hospital - Saginaw | (989) 771-6000 |
| St. Mary's Emergency Care Center - Saginaw | (989) 497-3200 |
| Poison Control Center (Illinois) | (800) 942-5969 |
| National Response Center | (800) 424-8802 |

5.9 Spill or Leaks

In the event of a spill or a leak of hazardous substances (such as sample preservative solutions or gasoline), site personnel will:

- Inform their supervisor immediately;
- Locate the source of the spillage and stop the flow if it can be done safely;
- Begin containment and recovery of the spilled materials.

TABLE 1
CHEMICALS DETECTED IN SEDIMENT,
2002 DEQ Baseline Chemical Characterization

| Parameter | Maximum Detected Level |
|------------------------|-----------------------------------|
| Tetrachloroethene | 95 ug/kg |
| Phenanthrene | 350 ug/kg |
| Fluoranthene | 510 ug/kg |
| Pyrene | 350 ug/kg |
| Chrysene | 230 ug/kg |
| Hexachlorobenzene | 1300 ug/kg |
| Benzo(a)anthracene | 190 ug/kg |
| 4,4'-DDD | 83 ug/kg |
| 4,4'-DDT | 1100 ug/kg |
| 4,4'-DDE | 170 ug/kg |
| Hexabromobenzene | 170 ug/kg |
| 2378-TCDD | 40.99 pg/g; TEQ = 40.99 pg/g |
| 12378-PeCDD | 27.75 pg/g; TEQ=13.875 pg/g |
| 123478-HxCDD | 2.87.88 pg/g; TEQ = 28.788 pg/g |
| 123678-HxCDD | 142.84 pg/g; TEQ = 14.284 pg/g |
| 123789-HxCDD | 53.02 pg/g; TEQ = 5.302 pg/g |
| 1234678-HpCDD | 2998.75 pg/g; TEQ = 29.988 pg/g |
| 12346789-OCDD | 26560.18 pg/g; TEQ = 26.56 pg/g |
| 1278TCDF | 5673.44 pg/g; TEQ = 567.344 pg/g |
| 12378-PeCDF | 4891.86 pg/g; TEQ = 244.593 pg/g |
| 23478-PcCDF | 2029.73 pg/g; TEQ = 1014.865 pg/g |
| 123478-HxCDF | 5020.21 pg/g; TEQ = 502.021 |
| 123678-HxCDF | 1014.95 pg/g; TEQ = 101.495 pg/g |
| 234678-HxCDF | 219.77 pg/g; TEQ = 21.977 pg/g |
| 123789-HxCDF | 63.91 pg/g; TEQ = 6.391 pg/g |
| 1234678-HpCDF | 4131.74 pg/g; TEQ = 41.317 pg/g |
| 1234789-HpCDF | 346.97 pg/g; TEQ = 3.47 pg/g |
| 12346789-OCDF | 7565.38 pg/g; TEQ = 7.565 pg/g |
| Total Dioxin/Furan TEQ | TEQ = 2076.34 pg/g |
| Aluminum | 7060 ug/kg |
| Arsenic | 23 ug/kg |
| Barium | 92 ug/kg |
| Beryllium | 0.3 ug/kg |

| Parameter | Maximum Detected Level |
|------------------|-------------------------------|
| Calcium | 43500 ug/kg |
| Chromium | 28 ug/kg |
| Cobalt | 8 ug/kg |
| Copper | 40 ug/kg |
| Iron | 17900 ug/kg |
| Lead | 35 ug/kg |
| Lithium | 21 ug/kg |
| Mercury | 0.2 ug/kg |
| Magnesium | 13200 ug/kg |
| Manganese | 505 ug/kg |
| Nickel | 21 ug/kg |
| Potassium | 1480 ug/kg |
| Selenium | 0.8 ug/kg |
| Silver | 0.3 ug/kg |
| Sodium | 75 ug/kg |
| Strontium | 71 ug/kg |
| Titanium | 104 ug/kg |
| Vanadium | 15 ug/kg |
| Zinc | 69 ug/kg |

Source: Tayler, A.B., and J.M. McCabe, 2002. *Baseline Chemical Characterization of Saginaw Bay Watershed Sediments*. Prepared for the Office of the Great Lakes, Michigan Department of Environmental Quality. August 29, 2002.

APPENDIX A:

TASK HAZARD DESCRIPTIONS AND GENERAL SAFETY RULES

SEDIMENT SAMPLING

Hazards generally associated with sampling of sediments include:

- Contact with or inhalation of contaminants, potentially in high concentrations in sampling media.
- Back strain and muscle fatigue due to lifting, shoveling and augering techniques.
- Contact with or inhalation of equipment decontamination solutions.

HAZARD PREVENTION

- To minimize exposure to chemical contaminants, a thorough review of suspected contaminants should be completed along with implementation of an adequate protection program.
- Proper lifting (pre-lift weight assessment, use of legs, multiple personnel) techniques will prevent back strain. Use slow easy motions when deploying sampling equipment to decrease muscle strain.
- Material Safety Data Sheets or equivalent for all decontamination solutions should be included with each Site Health and Safety Plan.
- First aid equipment should be available based on MSDS requirements.

SURFACE WATER SAMPLING

Physical, biological and chemical hazards are associated with water sampling, and they include the following:

- Contact with contaminated water.
- Drowning due to slipping, tripping, or falling while sampling. The use of personal protective clothing may increase the likelihood of drowning and accidents, due to the added weight and cumbersome nature of PPE.

HAZARD PREVENTION

- Sampling should be done on the bank, if possible, and the sampling personnel should be secured with a safety line, if necessary. When entering the water, the sampler should wear a personal flotation device, chemical resistant hip or chest waders and not stand in water deeper than his/her knee.
- If a boat must be used, a motor or row boat in good condition and complete with floating oars should be employed. Two samplers should be in the boat, seated on opposite ends, and each should wear a life preserver. Samplers should remain seated while in the boat, and if feasible, the boat should be connected to the shore by a rope. A safety watch should be positioned on shore.
- The buddy system should be used at all times.

GENERAL SAFETY RULES

General Activities

- Each employee shall comply with the safety rules, regulations, and orders which apply to his own actions and conduct, and shall not interfere with any method or process adopted for protection of any employee on any company property or project.
- On sites involving hazardous materials, eating, drinking, chewing gum and chewing tobacco will be allowed only in designated areas. All personnel are required to wash their hands and face immediately after completing work activities in an exclusionary zone.
- Never work alone in an isolated area unless arrangements have been made for periodic contact with another employee.
- Keep out of areas that are barricaded or marked restricted. There may be work going on or conditions that expose you to danger.
- Do not enter any confined space until the area has been cleared by a supervisor or safety officer. Confined spaces may include, but are not limited to, sewers, sumps, manholes and trenches.
- If you are in doubt about the safe or proper way to do any job, get instructions from your supervisor.
- Any condition which you feel is unsafe should be reported to your supervisor or other responsible person. Unsafe conditions, acts, or equipment must be promptly corrected and/or reported to your supervisor so that corrective action may be taken.
- Report all accidents and injuries to the supervisor or project manager. Even minor injuries requiring only on-site first aid must be reported.
- USE GOOD JUDGEMENT IN DOING YOUR WORK. DO NOT TAKE UNNECESSARY CHANCES.

Housekeeping

- Good housekeeping must be maintained at all times in all project work areas.
- Common paths of travel should be established and kept free from the accumulation of materials.
- Keep access to aisles, exits, ladders, stairways, scaffold and emergency equipment free from obstructions.
- Specific areas should be designated for the proper storage of materials.
- Tools, equipment, material and supplies shall be stored in an orderly manner.

- As work proceeds, scrap materials and other non-essential items must be neatly stored or removed from the work area.
- Containers should be provided for collection of trash and other debris and shall be removed at regular intervals.
- Solvent waste and oily rags must be kept in a fire resistant, covered container until removed from the project site.
- Flammable/combustible liquids must be kept in approved containers and must be stored in an approved storage area.
- All spills shall be quickly cleaned up. Oil and grease shall be cleaned from walking and working surfaces.

Illumination

- Site work will be performed during daylight hours whenever possible. Work conducted during hours of darkness will require enough illumination intensity “to read a newspaper without difficulty”.

Personal Protective Equipment

- ANSI approved eye and face protection must be worn when exposed to hazards from flying particles, molten metal, liquid chemicals, acids or caustic liquids, chemical gases or vapors, or potentially injurious light radiation.
- ANSI approved hard-hats must be worn when there is potential of head injury from impact, falling or flying objects, or electrical shock and burns.
- Appropriate protective footwear must be worn when working in areas where there is a danger of foot injuries due to falling or rolling objects, objects piercing the sole, or when the feet are exposed to electrical hazards.
- Appropriate hand, face, and body protection must be worn when exposed to hazards such as those from dermal absorption of harmful substances, severe cuts or lacerations, severe abrasions, punctures, chemical burns, thermal burns and harmful temperature extremes.
- Hearing protection must be worn when working around heavy equipment or other noisy machinery. The following general rule of thumb should be used to determine if hearing protection is required in a specific area. If you must raise your voice to be heard while communicating with persons near you, hearing protection is required.

Fire Extinguishers

- Watch for fire hazards. Know the location and operation for the fire extinguisher in your area. Check with your supervisor if in doubt. Report any fire extinguishers that are partly empty or otherwise inoperative.

Electrical Safety

- All temporary wiring, including extension cords, shall have ground fault circuit interrupters (GFCIs) installed.
- Extension cords must also be equipped with third-wire grounding. Cords passing through work areas must be covered, elevated or protected from damage. Cords should not be routed through doorways unless protected from pinching.
- Electrical power tools and equipment must be effectively grounded or double-insulated and UL approved.
- Electrical power tools, equipment and cords are to be inspected for damage before use. If damaged, they must be tagged and removed from service.
- Only qualified personnel are to work on energized electrical circuits and equipment. Only authorized personnel are permitted to enter high-voltage areas.

Tools, Machinery and Other Equipment

- Do not use defective handtools. Watch for broken or loose handles and mushroomed heads and report them to your supervisor. Always use the right tool for the job.
- Use the guards provided for all power tools. Do not use any equipment if the guard is broken, inoperative, or missing.
- Employees must not tamper with or attempt any unauthorized repair to any equipment.
- Do not start any machinery without first personally making certain that no one can be injured by the operation.
- Never move any piece of equipment without first checking completely around it to see that it is safe to do so.
- Always stay alert and maintain a safe distance from operating equipment, especially equipment on cross slopes and unstable terrain.
- Never approach operating equipment from the rear. Always make positive contact with the operator, and confirm that the operator has stopped the motion of the equipment.
- Never approach the side of operating equipment. Remain outside of the swing and turning radius.
- Maintain a safe distance from pinch points of operating equipment.
- Never turn your back on operating heavy equipment in case reverse signal alarms are not present or properly functional.
- Never climb onto operating equipment or operate contractor/subcontractor equipment.

- Never ride contractor/subcontractor equipment unless it is designed to accommodate passengers (e.g., equipped with firmly attached passenger seat). Getting on or off any vehicle while it is in motion is prohibited.
- Never work or walk under a suspended load.
- Never use equipment as a personnel lift unless it is specifically designed for this purpose. Riding on excavator/loader buckets, crane hooks or material hoists is prohibited.

Manual Lifting

- Practice lifting properly. Lift with your legs, not your back. Do not try to lift more than you can handle. Get help or use mechanical lifting aids if the load is too heavy or awkward to handle safely. Make sure the path of travel is clear prior to lifting.

Ladders

- Ladders must be inspected by a competent person for visible defects prior to each days use. Defective ladders must be tagged and removed from service.
- Personnel must face the ladder when climbing, keeping the belt buckle between side rails. Personnel must use both hands to climb. Use rope to raise and lower equipment and materials.
- Use ladders at an angle such that horizontal distances from top support to foot of the ladder is one-fourth of the working length of the ladder. Ladders must extend at least three feet above top support/landing surface.
- Ladders which may be displaced by work activities or traffic must be secured or barricaded.
- Stepladders are to be used in the fully opened and locked position. Personnel are not to stand on the top two steps of a stepladder and are not to sit on top or straddle a stepladder.



Compliance Today and Beyond

[First Aid Measures](#)
[Personal Protection](#)
[Handling/Storage](#)

[Fire Fighting Measures](#)
[Physical-Chemical Properties](#)
[Chemical Ingredients](#)

[Manufacturer/Responsible Party](#)
[Accidental Release Measures](#)
[HAZCOM Label](#)

Product Identification

Product ID: DIOXIN MIX M-8280A
MSDS Date: 06/15/1995 **Tech Review:** 08/27/1996
FSC: 6850 **NIIN:** LIIN: 00N072524 **MSDS Number:** 199796
Submitter: N EN

Status Cd: C
MFN: 01
Article: N
Kit Part: N

Manufacturer-Responsible Party

Company Name: ACCUSTANDARD INC
Address: 25 SCIENCE PARK SUITE 687
Box:
City: NEW HAVEN **State:** CT **ZIP:** 06511 **Country:** US
Info Phone Num: 203-786-5290
Emergency Phone Num: 203-786-5290
Resp. Party Other MSDS Num.:

Preparer's Name: N/P
Chemtrec Ind/Phone:
Proprietary Ind: N
Review Ind: N
Published: Y
CAGE: 0U4A8
Special Project Cd: N

Contractor Identification

Company Name: ACCUSTANDARD INC
Address: 125 MARKET ST
Box:
City: NEW HAVEN **State:** CT **ZIP:** 06513 **Country:**

US
Phone: 203-786-5290
Contract Num:
CAGE: 0U4A8

CHEMICAL INGREDIENTS

Ingred Name: DIBENZO-P-DIOXIN, 2,3,7,8-TETRACHLORO-; (2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN) (TCDD) (CERCLA)

CAS: 1746-01-6 Cd: M
RTECS #: HP3500000 Cd: M
= Wt: Cd:
= Vol: Cd:
> Wt: Cd:
>Vol: Cd:
< Wt: Cd:
<Vol: Cd:
% Low Wt: Cd:
% High Wt: Cd:
% Low Vol: Cd:
% High Vol: Cd:
% Text: 0.0005
Environmental Wt:
Other REC Limits: N/K
OSHA PEL: N/K (FP N) Cd: M
OSHA STEL: Cd:

ACGIH TLV: N/K (FP N) Cd: M
ACGIH STEL: N/P Cd:
EPA Rpt Qty:
DOT Rpt Qty:
Ozone Depleting Chemical:
Ingred Name: DIBENZO-P-DIOXIN, 1,2,3,7,8-PENTACHLORO-; (1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN)
CAS: 40321-76-4 Cd: M
RTECS #: HP3395000 Cd: M
= Wt: Cd:
= Vol: Cd:
> Wt: Cd:
>Vol: Cd:
< Wt: Cd:
<Vol: Cd:
% Low Wt: Cd:

% High Wt: Cd:
% Low Vol: Cd:
% High Vol: Cd:
% Text: 0.0005
Environmental Wt:
Other REC Limits: N/K
OSHA PEL: N/K (FP N) Cd: M

OSHA STEL: Cd:
ACGIH TLV: N/K (FP N) Cd: M
ACGIH STEL: N/P Cd:
EPA Rpt Qty:
DOT Rpt Qty:
Ozone Depleting Chemical:

Ingred Name: DIBENZO-P-DIOXIN, HEXACHLORO-; (1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN)

CAS: 39227-28-6 Cd: M
RTECS #: HP3200000 Cd: M
= Wt: Cd:
= Vol: Cd:
> Wt: Cd:
>Vol: Cd:
< Wt: Cd:
<Vol: Cd:
% Low Wt: Cd:
% High Wt: Cd:
% Low Vol: Cd:

% High Vol: Cd:
% Text: 0.0005
Environmental Wt:
Other REC Limits: N/K
OSHA PEL: N/K (FP N) Cd: M
OSHA STEL: Cd:
ACGIH TLV: N/K (FP N) Cd: M
ACGIH STEL: N/P Cd:
EPA Rpt Qty:
DOT Rpt Qty:
Ozone Depleting Chemical:

Ingred Name: DIBENZO-P-DIOXIN, 1,2,3,4,6,7,8-HEPTACHLORO-; (1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN)

CAS: 35822-46-9 Cd: M
RTECS #: HP3190000 Cd: M
= Wt: Cd:
= Vol: Cd:
> Wt: Cd:
>Vol: Cd:
< Wt: Cd:
<Vol: Cd:
% Low Wt: Cd:
% High Wt: Cd:
% Low Vol: Cd:

% High Vol: Cd:
% Text: 0.0005
Environmental Wt:
Other REC Limits: N/K
OSHA PEL: N/K (FP N) Cd: M
OSHA STEL: Cd:
ACGIH TLV: N/K (FP N) Cd: M
ACGIH STEL: N/P Cd:
EPA Rpt Qty:
DOT Rpt Qty:
Ozone Depleting Chemical:

Ingred Name: DIBENZO-P-DIOXIN, 1,2,3,4,6,7,8,9-OCTACHLORO-; (OCTACHLORODIBENZO-P-DIOXIN)

CAS: 3268-87-9 Cd: M
RTECS #: HP3350000 Cd: M
= Wt: Cd:
= Vol: Cd:
> Wt: Cd:
>Vol: Cd:
< Wt: Cd:
<Vol: Cd:
% Low Wt: Cd:
% High Wt: Cd:
% Low Vol: Cd:

% High Vol: Cd:
% Text: 0.0005
Environmental Wt:
Other REC Limits: N/K
OSHA PEL: N/K (FP N) Cd: M
OSHA STEL: Cd:
ACGIH TLV: N/K (FP N) Cd: M
ACGIH STEL: N/P Cd:
EPA Rpt Qty:
DOT Rpt Qty:
Ozone Depleting Chemical:

Ingred Name: TOLUENE (SARA 313) (CERCLA)

CAS: 108-88-3 Cd: M
RTECS #: XS5250000 Cd: M
= Wt: Cd:
= Vol: Cd:
> Wt: Cd:
>Vol: Cd:
< Wt: Cd:
<Vol: Cd:
% Low Wt: Cd:
% High Wt: Cd:

% Low Vol: Cd:
% High Vol: Cd:
% Text: 99.99
Environmental Wt:
Other REC Limits: N/K
OSHA PEL: 200 PPM Cd: M
OSHA STEL: Cd:
ACGIH TLV: 50 PPM, S Cd: M
ACGIH STEL: N/P Cd:
EPA Rpt Qty: 1000 LBS

DOT Rpt Qty: 1000 LBS

Ozone Depleting Chemical: N

Hazards Identification

LD50 LC50 Mixture : NONE SPECIFIED BY MANUFACTURER.**Route of Entry Inds -****Inhalation:** YES**Skin:** YES**Ingestion:** YES**Carcinogenicity Inds -****NTP:** NO**IARC:** NO**OSHA:** NO**Health Hazards Acute and Chronic**

ACUTE: HARMFUL OR FATAL IF SWALLOWED. VAPOR HARMFUL IF INHALED. SYMPTOMS: HEADACHE, DIZZINESS, HALLUCINATIONS, DISTORDED PERCEPTIONS, CHANGES IN MOTOR ACTIVITY, NAUSEA, RESPIRATORY IRRITATION, CENTRAL NERVOUS SYSTEM DEPRESSION, UNCONSCIOUSNESS, LIVER, KIDNEY AND LUNG DAMAGE. CONTACT MAY CAUSE SEVERE EFFECTS OF OVEREXPOSURE

Explanation of Carcinogenicity

NOT RELEVANT.

Signs and Symptoms of Overexposure

HEALTH HAZARD: EYE IRRITATION. MAY CAUSE SKIN IRRITATION. CHRONIC: TOLUENE APPEARS ON THE NAVY LISTING OF OCCUPATIONAL CHEMICAL REPRODUCTIVE HAZARDS. SEEK CONSULTATION FROM APPROPRIATE HEALTH PROFESSIONALS CONCERNING LATEST HAZARD LIST INFORMATION AND SAFE HANDLING AND EXPOSURE INFORMATION (FDS).

Medical Conditions Aggravated by ExposureRESPIRATORY, LIVER AND KIDNEY CONDITIONS.

First Aid Measures

First Aid

GET MEDICAL ASSISTANCE FOR ALL CASES OF OVEREXPOSURE. EYES: IMMEDIATELY FLUSH THOROUGHLY WITH WATER FOR AT LEAST 15 MINUTES. SKIN: IMMEDIATELY FLUSH THOROUGHLY WITH LARGE AMOUNTS OF WATER. INHALATION: REMOVE TO FRESH AIR; GIVE ARTIFICIAL RESPIRATION IF BREATHING HAS STOPPED. INGESTION: CALL MD IMMEDIATELY. ONLY INDUCE VOMITING AT THE INSTRUCTIONS OF MD. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

Accidental Release Measures

Spill Release Procedures

WEAR SUITABLE PROTECTIVE EQUIPMENT. ELIMINATE ANY IGNITION SOURCES UNTIL THE AREA IS DETERMINED TO BE FREE FROM EXPLOSION OR FIRE HAZARDS. CONTAIN THE RELEASE AND ELIMINATE ITS SOURCE, IF THIS CAN BE DONE WITHOUT RISK.

Neutralizing AgentNONE SPECIFIED BY MANUFACTURER.

Disposal Considerations

Waste Disposal MethodsDISPOSE AS HAZARDOUS WASTE. COMPLY WITH FEDERAL, STATE AND LOCAL REGULATIONS.

Handling and Storage

Handling and Storage Precautions

KEEP CONTAINER TIGHTLY CLOSED. STORE IN A COOL AREA AWAY FROM IGNITION SOURCES AND

OXIDIZERS. DO NOT BREATHE VAPOR OR MIST.

Other Precautions

DO NOT GET IN EYES, ON SKIN, OR ON CLOTHING. ELECTRICALLY GROUND ALL EQUIPMENT WHEN HANDLING THIS PRODUCT.

Fire Fighting Measures

Flash Point Method: TCC

Flash Point: Flash Point Text: 40.0F, 4.4C

Autoignition Temp: Autoignition Temp Text: N/A

Lower Limits: 1.30%

Upper Limits: 7.10%

Extinguishing Media

USE DRY CHEMICAL, FOAM, CARBON DIOXIDE. USE WATER SPRAY TO COOL EXPOSED CONTAINERS.

Fire Fighting Procedures

WEAR NIOSH APPROVED SCBA AND FULL PROTECTIVE EQUIPMENT (FP N).

Unusual Fire/Explosion Hazard

DANGEROUS FIRE AND EXPLOSION HAZARD. VAPOR CAN TRAVEL DISTANCES TO IGNITION SOURCE AND FLASH BACK.

Personal Protection

Respiratory Protection

IF WORKPLACE EXPOS LIM OF PROD/ANY COMPONENT IS EXCEEDED (SEE TLV/PEL), A NIOSH APPRVD AIR SUPPLIED RESP IS ADVISED IN ABSENCE OF PROPER ENVIRON CTL. OSHA REGS ALSO PERMIT OTHER NIOSH APPRVD RESPS (NEG PRESS TYPE) UNDER SPECIFIED ((SUP DAT)

Ventilation

MATERIAL SHOULD BE HANDLED OR TRANSFERRED IN AN APPROVED FUME HOOD OR WITH ADEQUATE VENTILATION.

Protective Gloves

VITON OR EQUIVALENT.

Eye Protection

ANSI APPRVD CHEM WORKERS GOGGS (FP N).

Other Protective Equipment

EMERGENCY EYEWASH & DELUGE SHOWER MEETING ANSI DESIGN CRITERIA (FP N).

Work Hygienic Practices

WASH THOROUGHLY AFTER HANDLING. DO NOT TAKE INTERNALLY.

Supplemental Safety and Health

RESP PROT: CNDTNS (SEE YOUR SFTY EQUIP SUPPLIER). ENGINEERING AND/OR ADMINISTRATIVE CONTROLS SHOULD BE IMPLEMENTED TO REDUCE EXPOSURE.

Physical/Chemical Properties

HCC:

NRC/State Lic Num:

Net Prop Wt for Ammo:

Boiling Pt: B.P. Text: 232F, 111C

Melt/Freeze Pt: M.P/F.P Text: -139F, -95C

Decomp Temp: Decomp Text: N/K

Vapor Pres: 21.9 @ 20C **Vapor Density:** 3.2

Volatile Org Content %:

Spec Gravity: 0.87 (H*20=1)

VOC Pounds/Gallon:

pH: N/K

VOC Grams/Liter:

Viscosity: N/P

Evaporation Rate & Reference: 2.2 (BUTYL ACETATE=1)

Solubility in Water: INSOLUBLE

Appearance and Odor: CLEAR LIQUID, WITH AROMATIC ODOR

Percent Volatiles by Volume: >99

Corrosion Rate: N/K

Stability and Reactivity Data

Stability Indicator/Materials to Avoid: YES OXIDIZERS AND STRONG MINERAL ACIDS.
Stability Condition to Avoid: HEAT; CONTACT WITH IGNITION SOURCES.
Hazardous Decomposition Products: CO*X, HYDROCARBONS.
Hazardous Polymerization Indicator: NO
Conditions to Avoid Polymerization: NOT RELEVANT.

Toxicological Information

Toxicological Information: N/P

Ecological Information

Ecological: N/P

MSDS Transport Information

Transport Information: N/P

Regulatory Information

SARA Title III Information: N/P
Federal Regulatory Information: N/P
State Regulatory Information: N/P

Other Information

Other Information: N/P

HAZCOM Label

Product ID: DIOXIN MIX, M-8280A
CAGE: 0U4A8
Assigned Ind: N
Company Name: ACCUSTANDARD INC
Street: 125 MARKET ST
PO Box:
City: NEW HAVEN **State:** CT **ZIP:** 06513 **Country:**
US
Health Emergency Phone: 203-786-5290
Label Required Ind: Y
Date of Label Review: 08/27/1996
Status Cd: C
Mfg Label Num:

Label Date: 08/27/1996
Year Procured: N/K
Origination Cd: G
Chronic Hazard Ind: Y
Eye Protection Ind: YES
Skin Protection Ind: YES
Signal Word: DANGER
Respiratory Protection Ind: YES
Health Hazard: Severe
Contact Hazard: Moderate
Fire Hazard: Severe
Reactivity Hazard: None

Hazard And Precautions EXTREMELY FLAMMABLE. ACUTE: HARMFUL OR FATAL IF SWALLOWED. VAPOR HARMFUL IF INHALED. SYMPTOMS: HEADACHE, DIZZINESS, HALLUCINATIONS, DISTORTED PERCEPTIONS, CHANGES IN MOTOR ACTIVITY, NAUSEA, RESPIRATORY IRRITATION, CENTRAL NERVOUS SYSTEM DEPRESSION, UNCONSCIOUSNESS, LIVER, KIDNEY AND LUNG DAMAGE. CONTACT MAY CAUSE SEVERE EYE IRRITATION. MAY CAUSE SKIN IRRITATION. CHRONIC: TOLUENE APPEARS ON THE NAVY OCCUPATIONAL CHEMICAL REPRODUCTIVE HAZARDS LIST (FP N).



Compliance Today and Beyond

[First Aid Measures](#)
[Personal Protection](#)
[Handling/Storage](#)

[Fire Fighting Measures](#)
[Physical-Chemical Properties](#)
[Chemical Ingredients](#)

[Manufacturer/Responsible Party](#)
[Accidental Release Measures](#)
[HAZCOM Label](#)

Product Identification

Product ID: DIBENZOFURAN O-585
MSDS Date: 09/01/1988 **Tech Review:** 12/27/1995
FSC: 6810 **NIIN:** LIIN: 00N067741 **MSDS**
Number: 193197
Submitter: N EN

Status Cd: C
MFN: 01
Article: N
Kit Part: N

Manufacturer-Responsible Party

Company Name: CHEM SERVICE INC
Address:
Box: 3108
City: WEST CHESTER **State:** PA **ZIP:** 19381
Country: US
Info Phone Num: 215-692-3026
Emergency Phone Num: 215-692-3026
Resp. Party Other MSDS Num.:

Preparer's Name: N/P
Chemtrec Ind/Phone:
Proprietary Ind: N
Review Ind: N
Published: Y
CAGE: 84898
Special Project Cd: N

Contractor Identification

Company Name: CHEM SERVICE INC
Address: N/K
Box: 3108
City: WEST CHESTER **State:** PA **ZIP:** 19381
Country: US
Phone: 215-692-3026
Contract Num:
CAGE: 84898

Company Name: CHEM SERVICE, INC
Address: 660 TOWER LN
Box: 599
City: WEST CHESTER **State:** PA **ZIP:** 19301-9650
Country: US
Phone: 610-692-3026
Contract Num:
CAGE: 8Y898

CHEMICAL INGREDIENTS

Ingred Name: DIBENZOFURAN (SARA 313)
(CERCLA)
CAS: 132-64-9 **Cd:** M
RTECS #: HP4430000 **Cd:** M
= Wt: Cd:
= Vol: Cd:
> Wt: Cd:
>Vol: Cd:
< Wt: Cd:
<Vol: Cd:
% Low Wt: Cd:
% High Wt: Cd:
% Low Vol: Cd:

% High Vol: Cd:
% Text: N/K
Environmental Wt:
Other REC Limits: N/K
OSHA PEL: N/K (FP N) **Cd:** M
OSHA STEL: Cd:
ACGIH TLV: N/K (FP N) **Cd:** M
ACGIH STEL: N/P **Cd:**
EPA Rpt Qty: 1 LB
DOT Rpt Qty: 1 LB
Ozone Depleting Chemical: N

Hazards Identification

LD50 LC50 Mixture : NONE SPECIFIED BY MANUFACTURER.

Route of Entry Inds -

Inhalation: YES

Skin: YES

Ingestion: YES

Carcinogenicity Inds -

NTP: NO

IARC: NO

OSHA: NO

Health Hazards Acute and Chronic

ACUTE: CAN BE HARMFUL IF SWALLOWED, INHALED, OR ABSORBED THROUGH THE SKIN.

CHRONIC: NONE SPECIFIED BY MANUFACTURER.

Explanation of Carcinogenicity

NOT RELEVANT.

Signs and Symptions of Overexposure

SEE HEALTH HAZARDS.

Medical Cond Aggravated by Exposure

NONE SPECIFIED BY MANUFACTURER.

First Aid Measures

First Aid

AN ANTIDOTE IS A SUBSTANCE INTENDED TO COUNTERACT EFT OF POIS. IT SHOULD BE ADMIN ONLY BY MD/TRAINED EMER PERS. MED ADVICE CAN BE OBTAINED FROM POIS CTL CTR. EYES: FLUSH CONTINUOUSLY W/WATER FOR AT LEAST 15 MIN. SKIN: FLUSH W/WATEER FOR 15-2 0 MIN. IF NO URNS HAVE OCCURRED, USE SOAP & WATER TO CLEANSE SKIN. INHAL: REMOVE TO FRESH AIR. ADMIN OXYGEN IF DFCLT BRTHG. IF BRTHG HAS STOPPED, (SUP DAT)

Accidental Release Measures

Spill Release Procedures

EVACUATE AREA. WEAR APPROPRIATE OSHA-REGULATED EQUIPMENT. VENTILATE AREA. ABSORB ON VERMICULITE OR SIMILAR MATERIAL. SWEEP UP AND PLACE IN AN APPROPRIATE CONTAINER. HOLD FOR DISPOSAL. WASH CONTAMINATED SURFACES TO REMOVE ANY RESIDDUES.

Neutralizing Agent

NONE SPECIFIED BY MANUFACTURER.

Disposal Considerations

Waste Disposal Methods

BURN IN A CHEMICAL INCINERATOR EQUIPPED WITH AN AFTERBURNER AND SCRUBBER. DISPOSE OF IN ACCORDANCE W/LOCAL, STATE & FEDERAL REGULATIONS (FP N).

Handling and Storage

Handling and Storage Precautions

ALL CHEM SHOULD BE CONSIDERED HAZ. AVOID DIRECT PHYSICAL CONT! USE APPROP OSHA/MSMA APPRVD SFTY EQUIP. AVOID CONT W/SKIN, EYES, & CLTHG.

Other Precautions

KEEP TIGHTLY CLSD & STORE IN COOL DRY PLACE. STORE ONLYW/COMPATIBLE CHEM. PERS NOT SPECIFICALLY & PROPERLY TRAINED SHOULD NOTHANDLE THIS CHEM/ITS CONTR. THIS PROD IS FURNISHED FOR LAB USE ONLY! THISPROD MAY NOT BE USED AS ((SUP DAT)

Fire Fighting Measures

Flash Point Method: N/P

Flash Point: **Flash Point Text:** N/K

Autoignition Temp: **Autoignition Temp Text:** N/A

Lower Limits: N/K

Upper Limits: N/K

Extinguishing Media

USE CARBON DIOXIDE, DRY CHEMICAL POWDER OR WATER SPRAY.

Fire Fighting Procedures

WEAR NIOSH/MSHA APPROVED SCBA & FULL PROTECTIVE EQUIPMENT (FP N).

Unusual Fire/Explosion Hazard

NONE SPECIFIED BY MANUFACTURER.

Personal Protection

Respiratory Protection

USE NIOSH/MSHA APPROVED RESPIRATOR APPROPRIATE FOR EXPOSURE OF CONCERN (FP N).

Ventilation

THIS CHEMICAL SHOULD BE HANDLED ONLY IN A HOOD.

Protective Gloves

IMPERVIOUS GLOVES (FP N).

Eye Protection

ANSI APPRVD CHEM WORKERS GOGGS (FP N).

Other Protective Equipment

EMERGENCY EYEWASH & DELUGE SHOWER MEETING ANSI DESIGN CRITERIA (FP N).

Work Hygienic Practices

CONTACT LENSES SHOULD NOT BE WORN IN THE LABORATORY.

Supplemental Safety and Health

FIRST AID PROC: ADMIN ARTF RESP. IF PATIENT IN CARD ARREST, ADMIN CPR. CONTINUE LIFE SUPPORTING MEASURES UNTIL MED ASSIST HAS ARRIVED. OTHER PREC: DRUGS, COSMETICS, AGRICULTURAL/PESTICIDAL PRODS, FOOD ADDITIVES/AS HOUSEHOLD CHEMICALS. >

Physical/Chemical Properties

HCC:

NRC/State Lic Num:

Net Prop Wt for Ammo:

Boiling Pt: B.P. Text: 545F,285C

Melt/Freeze Pt: M.P/F.P Text: >178F,>81C

Decomp Temp: Decomp Text: N/K

Vapor Pres: N/K Vapor Density: N/K

Volatile Org Content %:

Spec Gravity: N/K

VOC Pounds/Gallon:

pH: N/K

VOC Grams/Liter:

Viscosity: N/P

Evaporation Rate & Reference: N/K

Solubility in Water: N/K

Appearance and Odor: BEIGE CRYSTALLINE SOLID

Percent Volatiles by Volume: N/K

Corrosion Rate: N/K

Stability and Reactivity Data

Stability Indicator/Materials to Avoid: YES MAY BE A PEROXIDE FORMER. CHECK FOR PEROXIDES ON ALL OPENED SAMPLES. INCOMPATIBLE WITH STRONG OXIDIZING AGENTS.

Stability Condition to Avoid: EASILY OXIDIZED.

Hazardous Decomposition Products: DECOMPOSITION LIBERATES TOXIC FUMES.

Hazardous Polymerization Indicator: NO

Conditions to Avoid Polymerization: NOT RELEVANT.

Toxicological Information

Toxicological Information: N/P

Ecological Information

Ecological: N/P

MSDS Transport Information

Transport Information: N/P

Regulatory Information

SARA Title III Information: N/P

Federal Regulatory Information: N/P

State Regulatory Information: N/P

Other Information

Other Information: N/P

HAZCOM Label

Product ID: DIBENZOFURAN, O-585

CAGE: 84898

Assigned Ind: N

Company Name: CHEM SERVICE INC

Street: N/K

PO Box: 3108

City: WEST CHESTER **State:** PA **ZIP:** 19381

Country: US

Health Emergency Phone: 215-692-3026

Label Required Ind: Y

Date of Label Review: 12/27/1995

Status Cd: C

Mfg Label Num:

Label Date: 12/27/1995

Year Procured: N/K

Origination Cd: G

Chronic Hazard Ind: N

Eye Protection Ind: YES

Skin Protection Ind: YES

Signal Word: CAUTION

Respiratory Protection Ind: YES

Health Hazard: Slight

Contact Hazard: Slight

Fire Hazard: None

Reactivity Hazard: None

Hazard And Precautions ACUTE: CAN BE HARMFUL IF SWALLOWED, INHALED, OR ABSORBED THROUGH THE SKIN. CHRONIC: NONE SPECIFIED BY MANUFACTURER.

Contact Hazard: Slight

APPENDIX B:
**STANDARD OPERATING PROCEDURES FOR PERSONAL
PROTECTIVE CLOTHING AND EQUIPMENT**

I. STANDARD OPERATING PROCEDURES FOR PERSONAL PROTECTIVE CLOTHING

Proper inspection of PPE features several sequences of inspection depending upon specific articles of PPE and its frequency of use. The different levels of inspection are as follows:

- Inspection and operational testing of equipment received from the factory or distributor.
- Inspection of equipment as it is issued to workers.
- Inspection after use or training and prior to maintenance.
- Periodic inspection of stored equipment.
- Periodic inspection when a question arises concerning the appropriateness of the selected equipment, or when problems with similar equipment arise.

The primary inspection of PPE in use for activities at the Site will occur prior to immediate use and will be conducted by the user. This ensures that the specific device or article has been checked out by the user, and that the user is familiar with its use.

SAMPLE PPE INSPECTION CHECKLISTS

CLOTHING

Before use:

- Determine that the clothing material is correct for the specified task at hand.
- Visually inspect for:
 - imperfect seams
 - non-uniform coatings
 - tears
 - malfunctioning closures
- Hold up to light and check for pinholes.
- Flex product
 - observe for cracks
 - observe for other signs of shelf deterioration
- If the product has been used previously, inspect inside and out for signs of chemical attack:
 - discoloration
 - swelling
 - stiffness

During the work task, periodically inspect for:

- Evidence of chemical attack such as discoloration, swelling, stiffening, and softening. Keep in mind, however, that chemical permeation can occur without any visible defects.
- Closure failure
- Tears
- Punctures
- Seam Discontinuities

GLOVES

Before use:

- Visually inspect for:
 - imperfect seams
 - tears, abrasions
 - non-uniform coating
 - pressurize glove with air, listen for pinhole leaks.

APPENDIX C:
HOSPITALS/EMERGENCY CARE FACILITIES

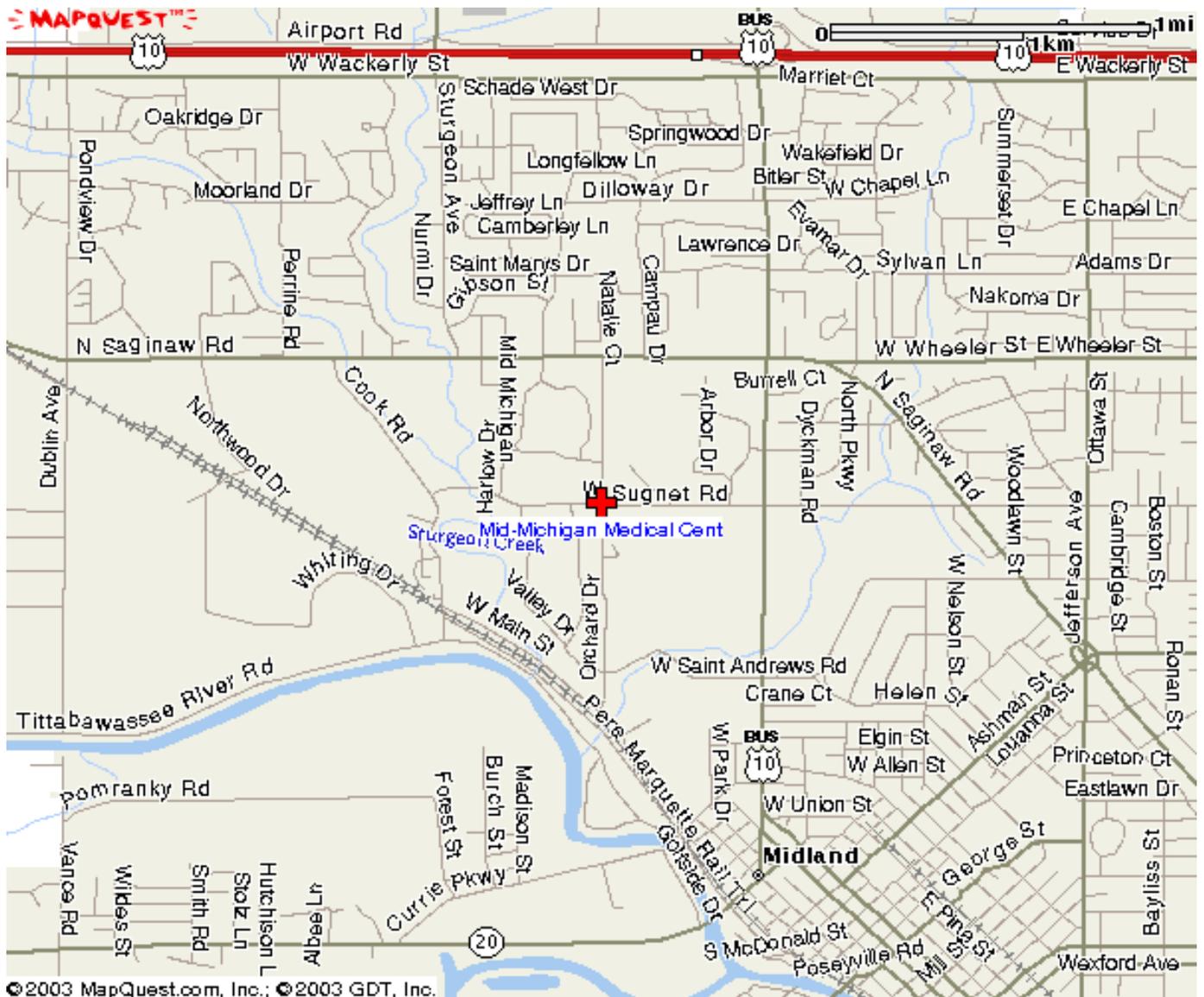
Emergency Medical And Surgical Service

(See maps following table below)

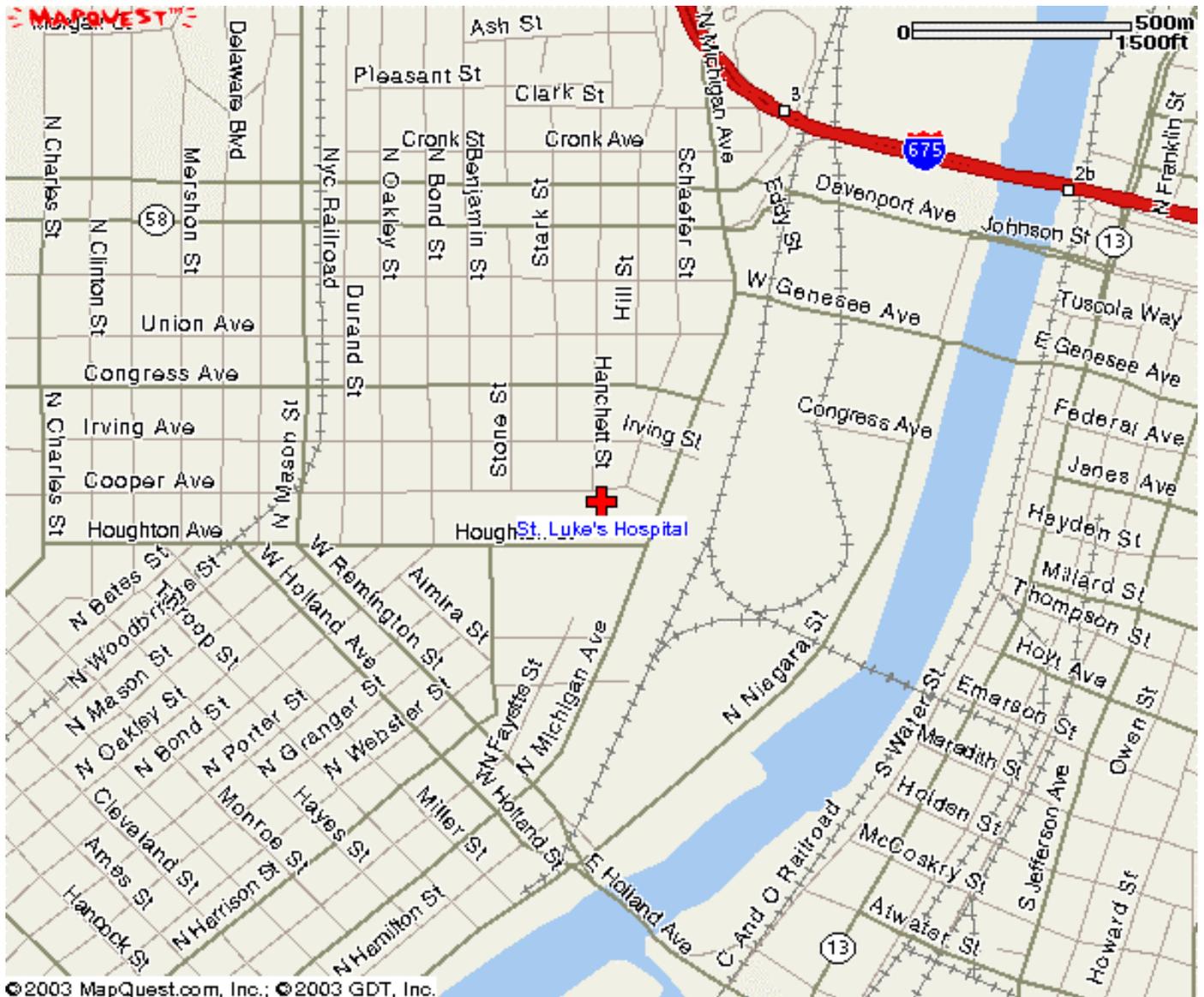
1 Mid-Michigan Medical Center – Midland
4005 Orchard
Midland, MI 48640
989-839-3000

2 St. Luke’s Hospital
700 Cooper Avenue
Saginaw, MI 48602
989-771-6000

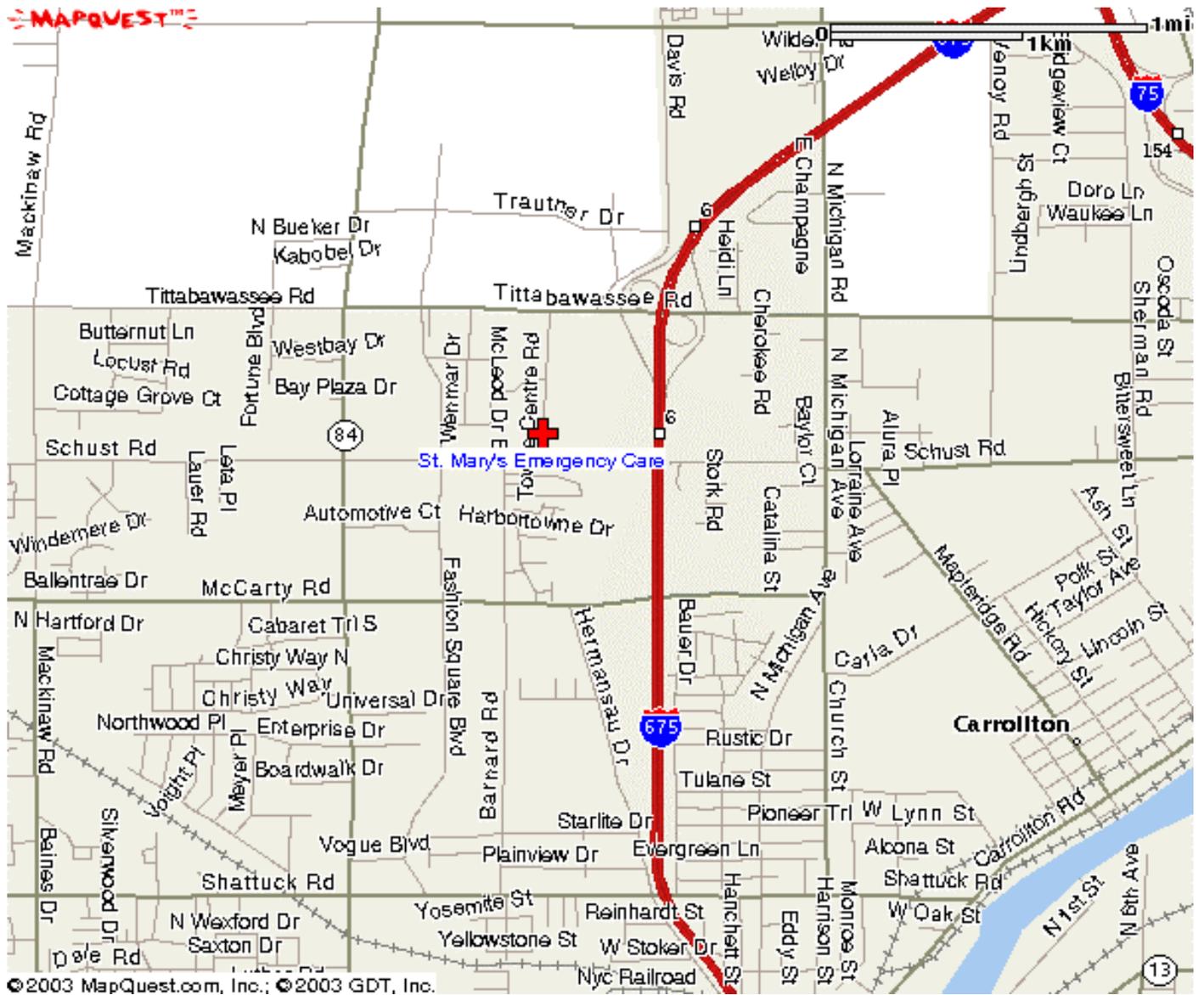
3 St. Mary’s Emergency Care Center
4599 Towne Centre Road
Saginaw, MI 48604



Mid-Michigan Medical Center



St. Luke's Hospital



St. Mary's Emergency Care Center

**APPENDIX D:
SITE INFORMATION**