HALEY ALDRICH

www.haleyaldrich.com

REVISED SOIL VAPOR INTRUSTION EVALUATION WORK PLAN
FORMER DOLLINGER CORPORATION FACILITY
1 TOWN LINE CIRCLE, BRIGHTON, NEW YORK
SITE # 828078

by Haley & Aldrich of New York
Rochester, New York

for Department of Environmental Conservation
Avon, New York

File No. 129388-002
January 2017

HALEY & ALDRICH OF NEW YORK
200 Town Centre Drive
Suite 2
Rochester, NY 14623
585.359.9000

6 January 2017
File No. 129388-002

New York State Department of Environmental Conservation
Division of Environmental Remediation
6274 East Avon-Lima Road
Avon, New York 14414

Attention: Todd Caffoe, P.E.
Environmental Engineer 2

Subject: Soil Vapor Intrusion Evaluation Work Plan
Former Dollinger Corporation Facility
1 Town Line Circle
Brighton, New York
Site # 828078

Dear Mr. Caffoe:

On behalf of Bunzl Distribution USA, LLC (Bunzl), Haley & Aldrich of New York (Haley & Aldrich) is pleased to submit this *Revised* Soil Vapor Intrusion Evaluation Work Plan for the above-referenced Former Dollinger Site (Site), for the New York State Department of Environmental Conservation's (Department) review and approval. The Site is shown on Figure 1. The purpose of this work plan is to evaluate the potential for soil vapor intrusion (SVI) at the Site in conformance with the New York State Department of Health (NYSDOH) document *Guidance for Evaluating Soil Vapor Intrusion in the State of New York* dated October 2006. The *revised* sampling locations within the main building and annex areas are shown on Figure 2.

Background

The former Dollinger Facility is an approximately 18.5 acre property which is roughly rectangular in shape, located at 1 Townline Circle in Brighton, New York. An approximately 140,000 square foot, 1-story, slab-on-grade building containing manufacturing, warehousing, and office space is centrally located on the Site. Building structure elements (columns, footers) are founded on relatively shallow supporting soils (reportedly four to five feet). Exterior walls consist of concrete "tip-up" panels reportedly founded at the same approximate shallow depth.

The Site was the location of the manufacture and assembly of industrial filters between 1970 and 1987. Operations at the facility ceased in approximately 1987 and the building was vacated of personnel,

equipment, and operations prior to its sale in 1989. The former degreasing operation was located in the Annex portion of the building, which is currently used for storage.

Between 1991 and 2001 a predecessor company to Bunzl, American Filtrona, entered into an Order on Consent with the Department to complete investigation and remediation of the Site, with focus on groundwater, soil and sediment found to be have been impacted by the former degreaser operations. That work was completed in conformance with the Order on Consent. The site equipment and wells were decommissioned with approval from the NYSDEC in 2001.

The Site is currently owned by Wilray, Inc. and its current tenants are Solid Surfaces, Inc. in the majority of the building and DXO Communications in the southeast corner.

In 2016 an Order on Consent and Administrative Settlement was negotiated between Bunzl and the Department. The Order on Consent to complete an evaluation of the potential for soil vapor intrusion into the building was put into effect ten days after the NYSDEC Commissioner's signature on 9 February 2016.

Scope of Work

This work plan describes the work necessary to complete an evaluation for potential SVI at the facility; including, evaluation of chemicals present and used at the facility that may affect site sampling and results; completing sampling points below the building's floor slab to allow collection and analysis of sub-slab vapor that may be affected by residues of chlorinated compounds from the former degreaser operation; sampling and analysis of indoor air for potential presence of those same compounds; sampling and analysis of outdoor ambient air to help with evaluation of area background air quality; and, synthesis of the data to complete the evaluation.

1.1 PRODUCT INVENTORY

A product inventory will be completed to identify potential sources of volatile organic compounds (VOC) that could impact the indoor air. An inventory of products that are stored within the annex portion of the building will be conducted and documented on a building inventory form, to determine if the products may contain the site compounds of concern (COC's); the site COC's include TCE and its breakdown products. If chemical products are found within the proposed sampling areas, these products will be removed from the sampling area for the duration of the sampling event.

A product inventory will not be performed in the portion of the building occupied by Solid Surfaces Inc. However, based on the information provided by Solid Surfaces, site COCs are not a component of the products used in this area of the building which include denatured alcohol, mildew remover, and adhesives. The Safety Data Sheets (SDS) for products used by Solid Surfaces are included in the Appendix A.

1.2 SUB SLAB POINT INSTALLATION

Five temporary soil vapor sampling points will be installed beneath the floor slab. The sample point will be installed using a hand drill advanced to a depth of approximately 2 inches below the base of the floor slab. The probes will be constructed of inert tubing (e.g. high density polyethylene (HDPE) of appropriate size 1/8 to 1/4 inch in diameter. The sampling points will be sealed with hydrated bentonite or cement grout to prevent the infiltration of indoor air during sampling, and capped until the time of sampling.

1.3 SAMPLING PROCEDURES

Haley & Aldrich will perform the sampling program consistent with guidance from the NYSDOH *Guidance for Evaluating Soil Vapor Intrusion in New York State (October 2006)*, including the following procedures:

1. Laboratory-supplied SUMMA® canisters will be used for all air sampling. The 6-liter SUMMA® canisters will be equipped with a dedicated pre-calibrated 8-hour integrated flow controller supplied by a NYSDOH certified laboratory and will be placed on a table or bench at the selected indoor air sampling locations and one outdoor air sampling location so that the intake of the flow controllers is at the approximate height of the breathing zone for facility workers (36 – 54 inches above the floor) at each sampling location.

   Figure 2 shows the *revised* locations of planned samples. These locations were selected because they conform to the same area previously subject to the site investigation and remediation program – the former degreaser was located inside an annex to the main building, extending off the north-central side of the main site building. Prior impacts associated with the site degreaser were confined to the subsurface soils and groundwater beneath the annex and extended a short distance outside the footprint and downgradient to the northwest of the annex (site groundwater flow is to the northwest, toward a site stormwater pond and an off-site tributary to Red Creek). *The revised* sampling locations have been planned beneath the annex and the area immediately south beneath the adjoining building that was subject to the former investigation and remediation, *additional sample locations are planned within the occupied office spaces in the manufacturing area south of the annex.*

2. Sub-slab vapor sampling points will be briefly evacuated to purge any stagnant vapors within the point (the purge volume will approximately three point volumes). During the purging process, Helium tracer gas will be released around the point at the ground surface, and vapor samples will be collected from the installed point and analyzed for helium to assess potential short-circuiting and ensure that the surface seal is intact. Purging will occur at a rate of less than 200 milliliters/minute (0.2 L/min) in accordance with NYSDOH Guidance. The samples will be collected immediately after purging. The soil vapor samples will be collected in dedicated 6-liter SUMMA® canisters equipped with a dedicated pre-calibrated 8-hour integrated flow controller supplied by a NYSDOH certified laboratory.

3. The use of 8-hour flow controllers will yield sample flow rates of approximately 12.5 milliliters/minute, which is below the maximum flow rate of 0.2 L/min specified by the NYSDOH guidance.

4. The samples will be shipped at ambient temperature under Chain-of-Custody (COC) to the laboratory and analyzed for trichloroethene (TCE) and its subsequent breakdown products (cis-1,2-dichloroethene (cis-DCE), and vinyl chloride (VC)). Vacuum readings will be recorded before and after sampling on a field form to document the sample collection. The final vacuum reading recorded at the end of the sampling period will be placed on the sample COC form prior to shipping to the laboratory and each canister vacuum will be checked upon arrival at the laboratory to confirm sample integrity during shipment.

Health & Safety

The above scope of work will be completed in accordance with the Health & Safety plan (HASP) included in Appendix B.

Schedule

The above described work is being planned to begin within one week from the approval date of this work plan. The sampling will take approximately two days and results will be summarized and reported within one month of receipt of the final analytical laboratory report.

Report

Haley & Aldrich will document the results of the sampling program in a letter report to the Department copied to Bunzl to allow for review by the Department in consultation with NYSDOH. The report will compare the results of the sampling for the contaminants of concern of TCE, cis-DCE, and VC with the matrices in the NYSDOH guidance document.

If you have any questions or require additional information please contact the undersigned below.

Sincerely yours,
HALEY & ALDRICH OF NEW YORK

Mark N. Ramsdell, P.E.
Senior Project Manager

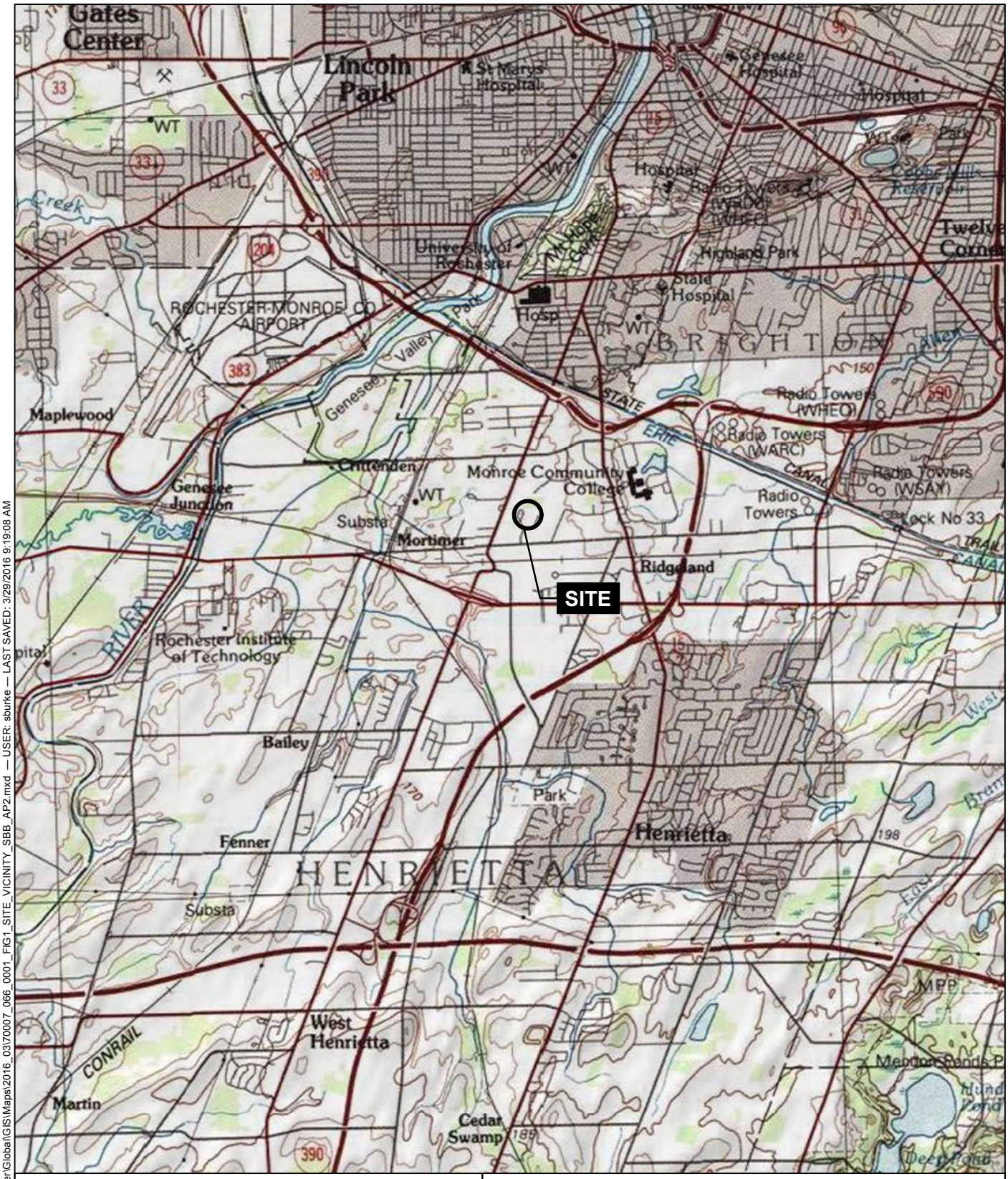
Vincent B. Dick
Senior Vice President

Attachments:

Figure 1: Site Vicinity
Figure 2: Site Plan
Appendix A: Solid Surfaces, Inc. Safety Data Sheets
Appendix B: Health & Safety Plan

G:\Projects\70007-Dollinger\066_2015-6 Activities\Final Deliverable\Revised Work Plan\2017_0106_Revised Dollinger SVI Evaluation Work Plan_F.docx

FIGURES



MAP SOURCE: ESRI
USGS QUAD: ROCHESTER
SITE COORDINATES: 43°05'50" N, 77°37'31" W

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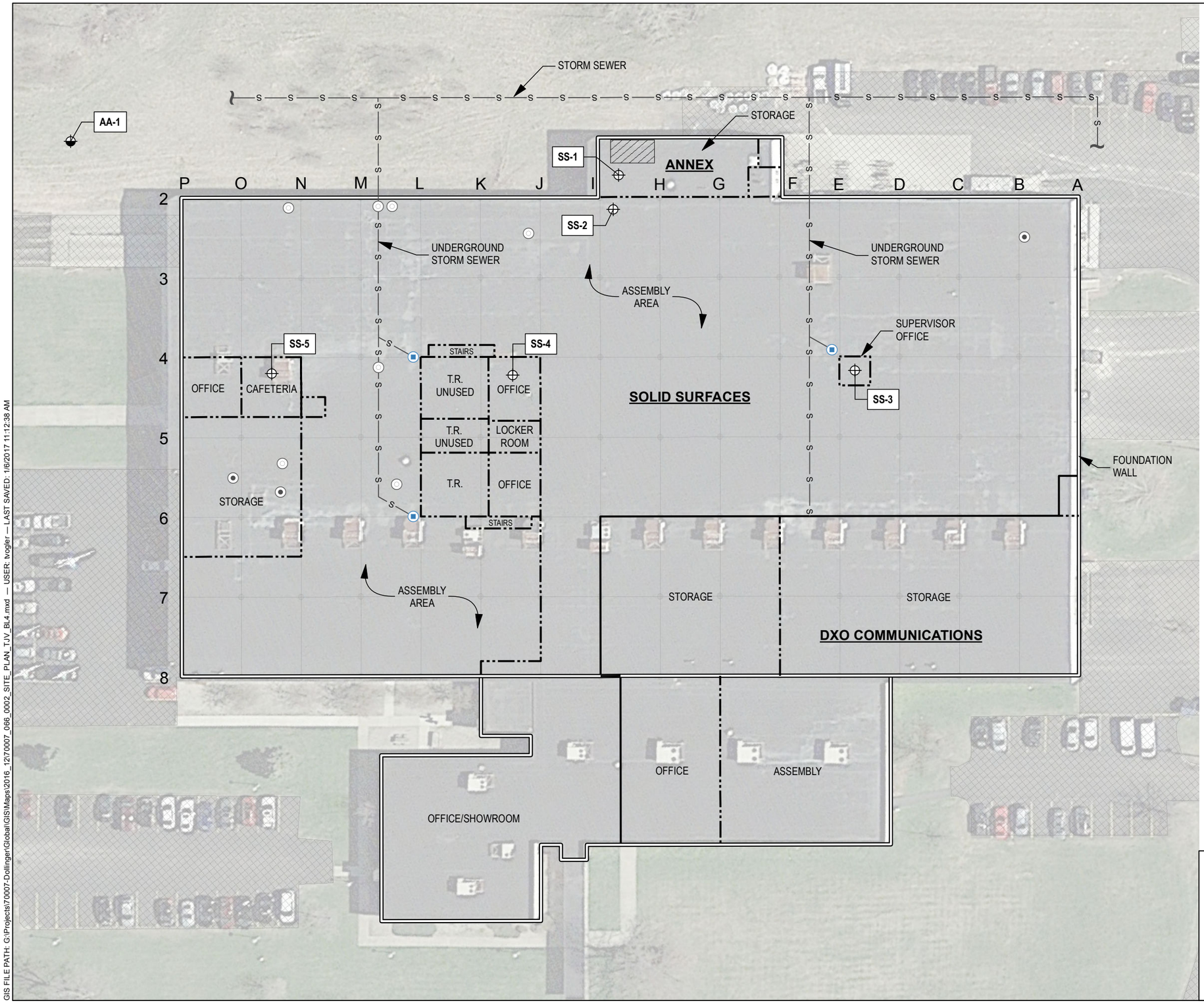
BUNZL USA, INC.
FORMER DOLLINGER BUILDING
BRIGHTON, NEW YORK

SITE VICINITY

APPROXIMATE SCALE: 1 IN = 1.5 MI
MARCH 2016

FIGURE 1

GIS FILE PATH: G:\Projects\70007-Dollinger\Global\GIS\Maps\2016_03\70007_066_0001_FIG1_SITE_VICINITY_SBB_AP2.mxd — USER: sburke — LAST SAVED: 3/29/2016 9:19:08 AM



LEGEND

- FOUNDATION WALL
- TENANT SEPARATION WALL
- INTERIOR WALL
- STORM SEWER
- FORMER DEGREASER PIT
- CLEAN OUT
- FLOOR DRAIN
- ROOF DRAIN
- INDOOR/SUB-SLAB SAMPLE LOCATION
- AMBIENT AIR SAMPLE

NOTES

1. PARTIAL BUILDING DETAILS FROM ORIGINAL DESIGN DRAWINGS, DOLLINGER CORPORATION, 1968.
2. AERIAL IMAGERY SOURCE: GOOGLE EARTH, 2016
3. ALL LOCATIONS ARE APPROXIMATE.

N

0 50 100
SCALE IN FEET

HALEY ALDRICH

BUNZL USA, INC.
FORMER DOLLINGER BUILDING
BRIGHTON, NEW YORK

SITE PLAN

JANUARY 2017

FIGURE 2

GIS FILE PATH: G:\Projects\70007-Dollinger\Global\GIS\Maps\2016_12\70007_066_0002_SITE_PLAN_TJV_BL4.mxd — USER: twogler — LAST SAVED: 1/6/2017 11:12:38 AM

APPENDIX A

Solid Surfaces, Inc. Safety Data Sheets

"CORIAN" JOINT ADHESIVE, PART A & PART B
COR014 Revised April 7, 2011 Printed April 7, 2011

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Material Identification

Corian is a registered trademark of DuPont.

Company Identification

MANUFACTURER/DISTRIBUTOR
DuPont
1007 Market Street
Wilmington, DE 19808

PHONE NUMBERS
Product Information : 1-(800)441-7515
Transport Emergency : 1-(800)424-9300 (CHEMTREC)
Medical Emergency : 1-(800)441-3637

COMPOSITION/INFORMATION ON INGREDIENTS

\# Components

Material	CAS Number	%
Part A Components:		
Synthetic Acrylic Resin		45-65
*Methyl Methacrylate Monomer	80-62-6	35-55
Part B Components:		
Mixture of Benzoate Esters		>90
Diethylene Glycol Dibenzoate	120-55-8	
Dipropylene Glycol Dibenzoate	27138-31-4	
Triethylene Glycol Dibenzoate	120-56-9	
*Benzoyl Peroxide	94-36-0	<3

* Disclosure as a toxic chemical is required under Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

HAZARDS IDENTIFICATION

Emergency Overview

Skin, eye and upper respiratory tract irritation.
Potential skin sensitization.
Central nervous system effects from inhalation overexposure.
Moderately toxic by ingestion.
Flammable liquid (Part A).

(HAZARDS IDENTIFICATION - Continued)

Potential Health Effects

Inhalation exposure may result in nausea, drowsiness, dizziness, headache and other central nervous system effects. Vapors can irritate eyes and nasal passages. Direct contact with eyes may result in irritation with inflammation of the cornea or conjuntiva. Prolonged or repeated contact with skin may result in skin irritation, contact dermatitis, rash, itching and swelling. The product is moderately toxic by ingestion.

Since this mixture has not been tested as a whole to determine the hazards by all routes of exposure, information is provided for each hazardous component of the mixture to meet requirements of OSHA's Hazard Communication Standard (29 CFR 1910.1200). The effects noted occur from exposure to the pure component unless otherwise noted.

INFORMATION FOR COMPONENTS

Inhalation of Methyl methacrylate may cause irritation of the upper respiratory passages; nonspecific discomfort, such as nausea, headache, or weakness; temporary lung irritation effects with cough, discomfort, difficulty breathing, or shortness of breath. On rare occassions, cases of abnormal kidney function as detected by laboratory tests and temporary changes in blood pressure have been reported.

Skin contact with Methyl methacrylate may cause skin irritation with discomfort or rash; or allergic skin rashes. Evidence from animal tests suggests that skin permeation may occur. Direct contact to Methyl Methacrylate may cause temporary coldness or numbness of the extremities.

Eye contact with Methyl Methacrylate may cause severe eye irritation with discomfort, tearing, or blurring of vision, or possible corneal damage.

In one study, excess colon and rectal cancer was observed in a group of workers employed between 1933-1945 in operations that entailed prolonged, extremely high exposures to the vapor phase of ethyl acrylate and methyl methacrylate monomer, and to volatile by-products of the ethyl acrylate/methyl methacrylate polymerization process. In a follow-up of this study, and in an additional study on workers employed in the same types of operations, but after 1945 and at different plant sites, no increased risk of cancer was observed.

Increased susceptibility to the effects of Methyl methacrylate may be observed in persons with pre-existing disease of the skin or lungs.

(HAZARDS IDENTIFICATION - Continued)

Skin contact with benzoyl peroxide may cause skin irritation with discomfort or rash; or allergic skin rashes. Benzoyl Peroxide may cause skin sensitization in susceptible humans.

Eye contact with Benzoyl Peroxide may cause irritation with discomfort, tearing, or blurring of vision.

Inhalation of Benzoyl Peroxide may cause irritation of the upper respiratory passages, with coughing and discomfort.

Individuals with preexisting diseases of the skin may have increased susceptibility to the toxicity of excessive exposures.

Carcinogenicity Information

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

FIRST AID MEASURES

First Aid

INHALATION

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

SKIN CONTACT

In case of contact, immediately wash skin with soap and water. Wash contaminated clothing before reuse.

EYE CONTACT

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

INGESTION

Ingestion is not an expected route of exposure during normal use of the product. If ingested, consult a physician immediately. All cases of ingestion should be referred immediately to a physician or Poison Control Center. Vomiting should be induced only as advised and by the means specified.

FIRE FIGHTING MEASURES

Flammable Properties

Flash Point	: 51 F (11 C) Method: TCC (for Part A) 375 F (191 C) Method: COC (for Part B)
Flammable limits in Air, % by Volume	
LEL	: 2.1 (Part A); 0.47 (Part B)
UEL	: 12.5 (Part A)

Part A:
Flammable liquid. Vapor forms explosive mixture with air. Vapors or gases are heavier than air and may travel considerable distances to an ignition source and flash back. Susceptible to spontaneous heating. Sealed containers may rupture explosively due to polymerization if exposed to elevated temperatures.

Part B:
Peroxides and decomposition products are flammable and can ignite with explosive force if confined.

Extinguishing Media

Foam, Dry Chemical, CO2.

Use chemical foams for extinguishing flaming pools of material.

Fire Fighting Instructions

Evacuate personnel to a safe area. Wear self-contained breathing apparatus. Wear full protective equipment. Use water spray.

ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Initial Containment

Remove source of heat, sparks, flame, impact, friction or electricity. Prevent material from entering sewers, waterways, or low areas.

Spill Clean Up

Soak up with sand, oil dry, or other noncombustible absorbent materials.

Scrape up and hold for proper disposal.

HANDLING AND STORAGE

Handling (Personnel)

Do not breathe vapor or mist. Do not get in eyes. Avoid contact with skin. Avoid contact with clothing. Wash thoroughly after handling. Wash contaminated clothing prior to reuse. Do not store or consume food, drink or tobacco in areas where they may become contaminated with this material.

Handling (Physical Aspects)

Use of non-sparking and explosion-proof equipment may be necessary depending on type of operation. Keep away from heat, sparks and flames. Close container after each use.

Storage

Store in a cool, dark place. Store below 70 F (21 C). Store in a well ventilated place. Keep container tightly closed.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

Use local exhaust ventilation to keep employee exposure to airborne concentrations below recommended exposure limits.

Personal Protective Equipment

Eye/Face	: Coverall chemical splash goggles.
Additional	: Polyethylene apron.
Protective Gloves	: PVA coated rubber or nitrile

Exposure Guidelines

Applicable Exposure Limits

Methyl Methacrylate Monomer

PEL	(OSHA)	: 100 ppm, 410 mg/m3, 8 Hr. TWA
TLV	(ACGIH)	: 50 ppm, 8 Hr. TWA, STEL 100 ppm, A4 Sensitizer
AEL *	(DuPont)	: None Established

Benzoyl Peroxide

PEL	(OSHA)	: 5 mg/m3, 8 Hr. TWA
TLV	(ACGIH)	: 5 mg/m3, 8 Hr. TWA, A4
AEL *	(DuPont)	: None Established

* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

PHYSICAL AND CHEMICAL PROPERTIES

Physical Data

Form	: Viscous Liquid (Part A)/ Oily Liquid (Part B)
Odor	: Distinctive methacrylate odor
Boiling Point	: 214 F (101 C) @ 760 mm Hg (for MM Monomer) 644 F (340 C) (for Part B)
Vapor Pressure	: 29 mm Hg @ 68 F (20 C) (for Part A) 1 mm Hg @ 298 F (148 C) (for Part B)
Vapor Density	: 3.46 (Air=1.0) (for MM Monomer) 9.6 (Air=1.0) (for Part B)
% Volatiles	: 50-70 VOL% (for Part A) Not Available (for Part B)
Evaporation Rate	: 3.0 (Butyl Acetate=1.0) (for Part A) Not Available (for Part B)
Solubility in Water	: 1.6 g/L (for Part A) 0.03 g/L (for Part B)
Specific Gravity	: 1.17-1.25 @ 73 F (23 C) (for Part A) 1.02-1.10 @ 73 F (23 C) (for Part B)

STABILITY AND REACTIVITY

Chemical Stability

Stable at normal temperatures and storage conditions.

Avoid heat and ignition sources, direct sunlight and contact with oxidizers.

Incompatibility with Other Materials

Part A is incompatible with rducing and oxidizing agents. Generates heat when mixed with oxidizers.

Part B is incompatible with oxidizing materials, strong acids, stong bases, strong alkalies, reducing agents, accelerators.

Decomposition

Combustion products include carbon monoxide, carbon dioxide, smoke, and from Part A, flammable and toxic biphenyl.

Polymerization

Part A will polymerize. Conditions leading to unintentional polymerization include exposure to abnormal temperatures, direct sunlight or oxidizing agents.

TOXICOLOGICAL INFORMATION

Animal Data

There is no toxicity data for the formulated product.

ECOLOGICAL INFORMATION

Ecotoxicological Information

AQUATIC TOXICITY:
Methyl Methacrylate Monomer 96 hour LC50 - Fathead minnows: 150 ppm

DISPOSAL CONSIDERATIONS

Waste Disposal

Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations. Do not flush to surface water or sanitary sewer system. Do not incinerate in closed containers.

TRANSPORTATION INFORMATION

Shipping Information

DOT
Proper Shipping Name : Adhesive
Hazard Class : 3
I.D. No. (UN/NA) : UN1133
Packing Group : II
DOT Label(s) : Flammable Liquid

DOT
Special Information : For containers less than one liter
Proper Shipping Name : Consumer Commodity
Hazard Class : ORM-D

REGULATORY INFORMATION

U.S. Federal Regulations

TSCA Inventory Status : In compliance with TSCA Inventory requirements for commercial purposes.

TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312

Acute : Yes
Chronic : Yes
Fire : Yes

(REGULATORY INFORMATION - Continued)

Reactivity : Yes
Pressure : No

RCRA
Under RCRA, it is the responsibility of the product user to determine at the time of disposal whether a material containing the product or derived from the product should be classified as a hazardous waste (40 CFR 261.11).

State Regulations (U.S.)

STATE RIGHT-TO-KNOW

No substances on the state hazardous substances list, for the states indicated below, are used in the manufacture of products on this Material Safety Data Sheet, with the exceptions indicated.

SUBSTANCES ON THE PENNSYLVANIA HAZARDOUS SUBSTANCES LIST PRESENT AT A CONCENTRATION OF 1 % OR MORE (0.01% FOR SPECIAL HAZARDOUS SUBSTANCES)- Methyl Methacrylate, Benzoyl Peroxide.

SUBSTANCES ON THE NEW JERSEY WORKPLACE HAZARDOUS SUBSTANCE LIST PRESENT AT A CONCENTRATION OF 1% OR MORE (0.1% FOR SUBSTANCES IDENTIFIED AS CARCINOGENS, MUTAGENS OR TERATOGENS)- Methyl Methacrylate, Benzoyl Peroxide.

OTHER INFORMATION

NFPA, NPCA-HMIS

NPCA-HMIS Rating

Health	: Part A: 2
Flammability	: Part A: 3
Reactivity	: Part A: 1

NPCA-HMIS Rating

Health	: Part B: 1
Flammability	: Part B: 1
Reactivity	: Part B: 1

Additional Information

MEDICAL USE: CAUTION: Do not use in medical applications involving permanent implantation in the human body. For other medical applications see DuPont CAUTION Bulletin No. H-50102.

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Responsibility for MSDS : DuPont Surfaces Products

(Continued)

Address	: Chestnut Run Plaza Wilmington, DE
Telephone	: 302-999-4594

# Indicates updated section.

End of MSDS

MATERIAL SAFETY DATA SHEET

Denatured Alcohol

HEALTH	
FLAMMABILITY	3
PHYSICAL HAZ.	0
PPE	G

Printed: 12/14/2005
Revision: 06/13/2005

Date Created: 06/13/2005

1. Product and Company Identification

Product Code: CSL26
Product Name: Denatured Alcohol
Reference #: 1625.5
Manufacturer Information
Company Name: W. M. Barr
2105 Channel Avenue
Memphis, TN 38113
Phone Number: (901)775-0100
Emergency Contact: 3E 24 Hour Emergency Contact (800)451-8346
Information: W.M. Barr Customer Service (800)398-3892
Web site address: www.wmbarr.com

2. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Percentage	OSHA PEL	ACGIH TWA	Other Limits
1. Ethyl alcohol	64-17-5	45.0 -50.0 %	1000 ppm	1000 ppm	No data.
2. Methanol	67-56-1	45.0 -50.0 %	200 ppm	200 ppm	No data.
3. Methyl isobutyl ketone	108-10-1	1.0 -4.0 %	100 ppm	50 ppm	No data.

Hazardous Components (Chemical Name)	RTECS #	OSHA STEL	OSHA CEIL	ACGIH STEL	ACGIH CEIL
1. Ethyl alcohol	KQ6300000	No data.	No data.	No data.	No data.
2. Methanol	PC1400000	No data.	No data.	250 ppm	No data.
3. Methyl isobutyl ketone	SA9275000	No data.	No data.	75 ppm	No data.

3. Hazards Identification

Emergency Overview

Danger! Flammable! Keep away from heat, sparks, flame, and all other sources of ignition. Do not smoke. Extinguish all flames and pilot lights, and turn off stoves, heaters, electric motors and all other sources of ignition during use and until all vapors are gone. Beware of static electricity that mat be generated by synthetic clothing and other sources.

OSHA Regulatory Status: This material is classified as hazardous under OSHA regulations.

Potential Health Effects (Acute and Chronic)

Inhalation Acute Exposure Effects:
Vapor harmful. May cause dizziness, headache, watering of eyes, irritation of respiratory tract, irritation to the eyes, drowsiness, nausea, other central nervous system effects, spotted vision, dilation of pupils, and convulsions.

Skin Contact Acute Exposure Effects:
May cause irritation, drying of skin, redness, and dermatitis. May cause symptoms listed under inhalation. May be absorbed through damaged skin.

Eye Contact Acute Exposure Effects:
May cause irritation.

Ingestion Acute Exposure Effects:
Poison. Cannot be made non-poisonous. May be fatal or cause blindness. May produce fluid in the lungs and pulmonary edema. May cause dizziness, headache, nausea, drowsiness, loss of coordination, stupor, reddening of face and or neck, liver, kidney and heart damage, coma, and death. May produce symptoms listed under inhalation.

Chronic Exposure Effects:
May cause symptoms listed under inhalation, dizziness, fatigue, tremors, permanent central nervous system changes, blindness, pancreatic damage, and death.

Signs and Symptoms Of Exposure

No data available.

Medical Conditions Generally Aggravated By Exposure

Diseases of the liver.

OSHA Hazard Classes:

HEALTH HAZARDS : N/E
PHYSICAL HAZARDS : N/E
TARGET ORGANS & EFFECTS: N/E

4. First Aid Measures

Emergency and First Aid Procedures

Inhalation:
If user experiences breathing difficulty, move to air free of vapors. Administer oxygen or artificial respiration until medical assistance can be rendered.

Skin Contact:
Wash with soap and water.

Eye Contact:
Flush with large quantities of water for at least 15 minutes. If irritation from contact persists, get medical attention.

Ingestion:
Call your poison control center, hospital emergency room or physician immediately for instructions to induce vomiting.

Note to Physician

Poison. This product contains methanol. Methanol is metabolized to formaldehyde and formic acid. These metabolites may cause metabolic acidosis, visual disturbances and blindness. Since metabolism is required for these toxic symptoms, their onset may be delayed from 6 to 30 hours following ingestion. Ethanol competes for the same metabolic pathway and has been used as an antidote. Methanol is effectively removed by hemodialysis. Call your local poison control center for further instructions.

5. Fire Fighting Measures

Flammability Classification:	OSHA Class IB
Flash Pt:	45.00 F Method Used: SCC
Explosive Limits:	LEL: 1.00 UEL: No data.
Autoignition Pt:	No data.

Fire Fighting Instructions

Self-contained respiratory protection should be provided for fire fighters fighting fires in buildings or confined area. Storage containers exposed to fire should be kept cool with water spray to prevent pressure build-up. Stay away from heads of containers that have been exposed to intense heat or flame.

Flammable Properties and Hazards

No data available.

Extinguishing Media

Use carbon dioxide, dry powder, or foam.

Unsuitable Extinguishing Media

No data available.

6. Accidental Release Measures

Steps To Be Taken In Case Material Is Released Or Spilled

Clean-up:

Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind, out of low areas, and ventilate closed spaces before entering. Shut off ignition sources, keep flares, smoking or flames out of hazard area.

Small spills:

Take up liquid with sand, earth or other noncombustible absorbent material and place in a plastic container where applicable.

Large spills:

Dike far ahead of spill for later disposal.

7. Handling and Storage

Precautions To Be Taken in Handling

Read carefully all cautions and directions on product label before use. Since empty container retains residue, follow all label warnings even after container is empty. Dispose of empty container according to all regulations. Do not reuse this container.

Precautions To Be Taken in Storing

Keep container tightly closed when not in use. Store in a cool, dry place. Do not store near flames or at elevated temperatures.

8. Exposure Controls/Personal Protection

Respiratory Equipment (Specify Type)

For OSHA controlled work place and other regular users. Use only with adequate ventilation under engineered air control systems designed to prevent exceeding appropriate TLV. For occasional use, where engineered air control is not feasible, use properly maintained and properly fitted NIOSH approved respirator for organic solvent vapors. A dust mask does not provide protection against vapors.

Eye Protection

Safety glasses, chemical goggles or face shields are recommended to safeguard against potential eye contact, irritation, or injury. Contact lenses should not be worn while working with chemicals.

Protective Gloves

Wear impermeable gloves. Gloves contaminated with product should be discarded. Promptly remove clothing that becomes soiled with product.

Other Protective Clothing

Various application methods can dictate the use of additional protective safety equipment, such as impermeable aprons, etc., to minimize exposure. A source of clean water should be available in the work area for flushing eyes and skin. Do not eat, drink, or smoke in the work area. Wash hands thoroughly after use. Before reuse, thoroughly clean any clothing or protective equipment that has been contaminated by prior use. Discard any clothing or other protective equipment that cannot be decontaminated, such as gloves or shoes.

Engineering Controls (Ventilation etc.)

Use only with adequate ventilation to prevent build-up of vapors. Open all windows and doors. Use only with a cross ventilation of moving fresh air across the work area. If strong odor is noticed or you experience slight dizziness, headache, nausea, or eye-watering -- Stop -- ventilation is inadequate. Leave area immediately.

9. Physical and Chemical Properties

Physical States: [ ] Gas [X] Liquid [ ] Solid
Melting Point: No data.
Boiling Point: 147.00 F
Autoignition Pt: No data.
Flash Pt: 45.00 F Method: SCC
Explosive Limits: LEL: 1.00 UEL: No data.
Specific Gravity (Water = 1): No data.
Bulk Density: 6.61 LB/GA
Vapor Pressure (vs. Air or mm Hg): No data.
Vapor Density (vs. Air = 1): No data.
Evaporation Rate (vs Butyl Acetate=1): No data.
Solubility in Water: No data.
Percent Volatile: 100.0 % by weight.
VOC / Volume: 792.0000 G/L
Corrosion Rate: No data.
pH: No data.
Appearance and Odor

No data available.

10. Stability and Reactivity

Stability: Unstable [ ] Stable [X]
Conditions To Avoid - Instability

No data available.

Incompatibility - Materials To Avoid

Incompatible with strong oxidizing agents.

Hazardous Decomposition Or Byproducts

Decomposition may produce carbon monoxide and carbon dioxide.

Hazardous Polymerization: Will occur [ ] Will not occur [X]
Conditions To Avoid - Hazardous Polymerization

No data available.

11. Toxicological Information

Toxicological Information

No data available.

Carcinogenicity/Other Information

No data available.

Carcinogenicity: NTP? No IARC Monographs? No OSHA Regulated? No

12. Ecological Information

Ecological Information

No data available.

13. Disposal Considerations

Waste Disposal Method

Dispose in accordance with applicable local, state, and federal regulations.

14. Transport Information

LAND TRANSPORT (US DOT)

DOT Proper Shipping Name

No data available.

15. Regulatory Information

US EPA SARA Title III

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
1. Ethyl alcohol	64-17-5	No	No	No	No
2. Methanol	67-56-1	No	Yes 5000 LB	Yes	No
3. Methyl isobutyl ketone	108-10-1	No	Yes 5000 LB	Yes	Yes

US EPA CAA, CWA, TSCA

Hazardous Components (Chemical Name)	CAS #	EPA CAA	EPA CWA NPDES	EPA TSCA	CA PROP 65
1. Ethyl alcohol	64-17-5	No	No	No	No
2. Methanol	67-56-1	HAP	No	No	No
3. Methyl isobutyl ketone	108-10-1	HAP	No	No	No

SARA (Superfund Amendments and Reauthorization Act of 1986) Lists:

Sec.302: EPA SARA Title III Section 302 Extremely Hazardous Chemical with TPQ. * indicates 10000 LB TPQ if not volatile.

Sec.304: EPA SARA Title III Section 304: CERCLA Reportable + Sec.302 with Reportable Quantity. ** indicates statutory RQ.

Sec.313: EPA SARA Title III Section 313 Toxic Release Inventory. Note: -Cat indicates a member of a chemical category.

Sec.110: EPA SARA 110 Superfund Site Priority Contaminant List

TSCA (Toxic Substances Control Act) Lists:

5A(2): Chemical Subject to Significant New Rules (SNURS)

6A: Commercial Chemical Control Rules

8A: Toxic Substances Subject To Information Rules on Production

8A CAIR: Comprehensive Assessment Information Rules - (CAIR)

8A PAIR: Preliminary Assessment Information Rules - (PAIR)

8C: Records of Allegations of Significant Adverse Reactions

8D: Health and Safety Data Reporting Rules

8D TERM: Health and Safety Data Reporting Rule Terminations

Other Important Lists:

CWA NPDES: EPA Clean Water Act NPDES Permit Chemical

CAA HAP: EPA Clean Air Act Hazardous Air Pollutant

CAA ODC: EPA Clean Air Act Ozone Depleting Chemical (1=CFC, 2=HCFC)

CA PROP 65: California Proposition 65

EPA Hazard Categories:

This material meets the EPA 'Hazard Categories' defined for SARA Title III Sections 311/312 as indicated:

[ ] Yes [X] No Acute (immediate) Health Hazard
[ ] Yes [X] No Chronic (delayed) Health Hazard
[ ] Yes [X] No Fire Hazard
[ ] Yes [X] No Reactive Hazard
[ ] Yes [X] No Sudden Release of Pressure Hazard

16. Other Information

Company Policy or Disclaimer

The information contained herein is presented in good faith and believed to be accurate as of the effective date shown above. This information is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determination of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. Any use of this data and information must be determined by the user to be in accordance with applicable federal, state and local laws and regulations.

Material Safety Data Sheet

Section 1 General Information

Manufacturer:
Zinsser Company, Inc.
173 Belmont Drive
Somerset, NJ 08875
(732) 469-8100

Emergency Telephone: Chemtrec (800) 424-9300 **Date: April 30, 2008**

Product Name: **Jomax**

Codes: 60101 60102 60103 60104 60105 60112 60121 60122 60136 60148 60151 60155 60157 047719

Section 2 Hazardous Ingredients

Hazardous Component	CAS#	OSHA PEL	ACGIH TLV
Acetic Acid	64-19-7	10 ppm	10 ppm

Section 3 Hazard Identification

Emergency Overview: This material is a milky white liquid with a flash point greater than 200° F. This material is used as a mildew remover and is an EPA registered pesticide.

Primary Routes of Exposure:

Inhalation
Skin Contact
Eye Contact

Potential Acute Health Effects:

Eye: May cause eye irritation.

Skin: May cause skin irritation.

Ingestion: Not determined.

Inhalation: May cause respiratory tract irritation.

Final Use Product (diluted): In addition to the above information, warnings and handling precautions provided by the producer of household bleach used to prepare the final use product should also be read and followed to minimize the risk of injury.

Potential Chronic Health Effects: This product contains Sodium O-Phenylphenate. Some substituted phenols have been shown to cause depigmentation (white patches on skin), even at diluted concentrations. O-Phenlphenol (OPP) has an important structural difference from the substituted phenol associated with depigmentation. OPP has been reported to produce depigmentation in experimental animals when given orally, but not by skin contact, and in humans only at concentrations that are also significantly irritating to the skin. OPP has not been found to cause depigmentation when present at concentrations used in disinfectant formulations.

Section 4 First Aid Measures

Eye contact: Immediately flush eyes with plenty of water for 30 minutes. Call a physician immediately. Lift the upper and lower eyelid occasionally. Get immediate medical attention.

Skin contact: Immediately flush skin with plenty of running water for 30 minutes. Remove contaminated clothing and shoes. If needed, seek medical attention.

Ingestion: Do not induce vomiting. If conscious give plenty of water or milk. Get immediate medical attention. Do not give anything by mouth to an unconscious or convulsing person.

Inhalation: Remove to fresh air. Give artificial respiration if person is not breathing. Get medical attention if symptoms persist.

Exposure to Final Product (diluted): In addition to the above, follow emergency and first aid procedures for exposures to bleach.

Section 5 Fire Fighting Measures

Flash Point (method): N/D (est. >200° F).

Extinguishing Media: Use appropriate extinguishing media for surrounding fire.

Unusual Fire and Explosion Hazards: None known.

Section 6 Accidental Release Measures

Personal Precautions: Wear acid resistant equipment including eye protection.

Clean Up Methods: For small spills, wipe up and dispose in DOT approved waste containers. For large spills, contain by diking with soil or other absorbent material and carefully neutralize with soda ash or lime. If soda ash is used, provide adequate ventilation to dissipate gases produced. Transfer all waste material to an appropriate container.

(See also Section 8 for information on Exposure Controls and Personal Protective Equipment)

Section 7 Handling and Storage

Handling: Keep away from heat or flame. Keep from freezing. Avoid all contact with eyes. Avoid contact with skin or clothing. Wash areas immediately after contact. Remove and launder clothing.

Storage: Keep out of reach of children. Store in a cool dry place away from incompatible materials. Keep container tightly closed when not in use.

Section 8 Exposure Controls / Personal Protection

Engineering Controls: Use local mechanical ventilation capable of maintaining emissions at the point of use below applicable occupational exposure limits.

Personal Protective Equipment (PPE):

Eye Protection: Chemical splash goggles or full-face shield

Skin Protection: Rubber gloves

Respiratory Protection: Avoid breathing in vapors or spray mists. Do not use in confined areas without proper ventilation. A respirator designed to protect against airborne mists can significantly reduce exposure in situations with the potential to generate mist in the air.

Protective Clothing: Impervious aprons boots or other equipment needed to protect the skin.

General Hygiene Practices: Always wash before performing any other function (such as eating or applying cosmetics). Launder any contaminated clothing.

Section 9 Physical Data

Appearance:	milky white liquid	**Odor:**	vinegar odor
Physical State:	Liquid	**pH:**	3.0-3.5 as supplied (9.1- 9.4 mixed with bleach)
Boiling Point:	N/D (est. ~212° F.)	**Melting Point:**	N/A
Evaporation Rate:	Slower than ether.	**Density:**	8.38 pounds/gallon

Section 10 Stability and Reactivity

Stability: Stable **Hazardous Polymerization:** Will not occur.

Hazardous Decomposition Products: May liberate carbon monoxide, carbon dioxide and unidentified compounds in black smoke.

Conditions to Avoid: Heat and Open Flame

Incompatibility: Strong alkalis, oxidizing or reducing materials, cyanides, sulfides, combustible materials, chromic acid, nitric acid, hydrogen peroxide, active metals, amines, oxides, and carbonates.

Section 11 Toxicological Information

Carcinocenicity: Sodium O-Phenylphenate has been identified by IARC as an animal carcinogen. Rats developed an increased incidence of bladder tumors in lifetime feeding experiments. IARC currently classifies Sodium O-Phenylphenate as a possible human carcinogen (Group 2B).

Jomax has not been tested for potential toxicity. The information contained in this MSDS is based on toxicological information provided by the manufacturers of the components and the final concentration of each of the components.

(See also Section 15 for related information)

Section 12 Ecological Information

Environmental Precautions: This product is toxic to fish. Do not apply directly to water. Do not contaminate water when disposing of equipment wash waters.

Section 13 Disposal Considerations

Recommended Waste Disposal Method: Dispose of contaminated product and materials used to clean up spills in a manner consistent with Federal, State, and local regulatory agencies. Dispose of all empty containers as directed on the label.

Section 14 Transportation Information

Regulated by the US DOT: No

DOT Proper Shipping Name: Cleaning Compound

UN / NA Number: N/A

Section 15 Regulatory Information

CERCLA:

The Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA) requires notification to the National Response Center for releases of quantities of Hazardous Substances equal to or greater than the reportable quantities (RQs) in 40 CFR 302.4 (for CERCLA 102).

Components present in this product at a level which could require reporting under the statute are:

Chemical Name	CAS#	Maximum Concentration (Wt. %)
None	N/A	N/A

SARA Title III, section 311/312:

The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires emergency planning based on Threshold Planning Quantities (TPQs) and release reporting based on Reportable Quantities (RQs) in 40 CFR 355 (used for SARA 302, 304, 311 and 312).

Components present in this product at a level which could require reporting under the statute are:

Chemical Name	CAS#	Maximum Concentration (Wt. %)
None	N/A	N/A

SARA Title III, section 313:

The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires submission of annual reports of release of toxic chemicals that appear in 40 CFR 372 (for SARA 313).

Components present in this product at a level which could require reporting under the statute are:

Chemical Name	CAS#	Maximum Concentration (Wt. %)
None	N/A	N/A

TSCA:

The components of this mixture are listed in the Toxic Substance Control Act Inventory of Chemical Substances.

Section 16 Other Information

Legend: **N/A**: Not Applicable
N/D: Not Determined
N/E: Not Established
N/R: Not Required
STEL: Short Term Exposure Limit
C: OSHA Ceiling Value
cps: Centipoise
mg/m^3: milligrams per cubic meter
mppcf: million particles per cubic foot of air.
PPM: Parts Per Million
PPB: Parts Per Billion
PEL: Permissible Exposure Limit
TLV: Threshold Limit Value
TWA: Time Weighted Average
ACGIH: American Conference of Governmental Industrial Hygienists
CPSC: Consumer Product Safety Commission
DOT: US Department of Transportation
FHSA: Federal Hazardous Substance Act
OSHA: Occupational Safety and Health Administration (US Dept. of Labor)
RCRA: Resource Conservation and Recovery Act
SARA: Superfund Amendment and Reauthorization Act
Skin: This substance has the potential to be absorbed systemically through the skin.
TSCA: Toxic Substance Control Act

Prepared By: Zinsser Regulatory Compliance Dept.
173 Belmont Drive Somerset, NJ 08875 (732) 469-8100

Disclaimer: Zinsser Company, Inc. believes, to the best of its knowledge, information and belief, the information contained herein to be accurate and reliable as of the date of this material safety data sheet. However, because the conditions of handling, use, and storage of these materials are beyond our control, we assume no responsibility or liability for personal injury or property damage incurred by the use of these materials and make no warranty, expressed or implied, regarding the accuracy or reliability of the data or results obtained from their use. All materials may present unknown hazards and should be used with caution. The information and recommendations in this material safety data sheet are offered for the users' consideration and examination. It is the responsibility of the user to determine the final suitability of this information and data and to comply with all applicable international, federal, state, and local laws and regulations.

Integra Adhesives

Issued: 08/01/2009
Revision No: 3

SAFETY DATA SHEET

SURFACE BONDER Xi/ESTONE Xi/13-E/TRIM BONDER TR30/RTP-01/SINK BONDER SK11: PART A

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

Product name: SURFACE BONDER XI/ESTONE XI/13-E/TRIM BONDER TR30/RTP- 01/SINK BONDER SK11: PART A

Use of substance / preparation: Bonding agent for Acrylic, Polyester, Quartz and Natural Stone.

Company name:
Integra Adhesives Inc.
Unit 4, 33759 Morey Avenue
Abbotsford
British Columbia
V2S 2W5
Canada
Tel: +1 604 850 1321
Fax: +1 604 850 1354
Emergency tel: +44 (0)1604 521065
Email: contact@integra-adhesives.com

2. HAZARDS IDENTIFICATION

Main hazards: Highly flammable. Irritating to respiratory system and skin. May cause sensitisation by skin contact.

Workplace exposure limit: This substance does not have a workplace exposure limit.

PBT: This substance is not identified as a PBT substance.

Directive 1999/45/EC: This preparation meets the criteria for classification as dangerous in accordance with Directive 1999/45/EC.

Other hazards: In use, may form flammable / explosive vapour-air mixture.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous ingredients: METHYL METHACRYLATE 30-50%
EINECS: 201-297-1 CAS: 80-62-6
[F] R11; [Xi] R37/38; [Sens.] R43

4. FIRST AID MEASURES

Skin contact: Remove all contaminated clothes and footwear immediately unless stuck to skin. Wash immediately with plenty of soap and water.

Eye contact: Bathe the eye with running water for 15 minutes. Consult a doctor.

Ingestion: Do not induce vomiting. Wash out mouth with water. If conscious, give half a litre of water to drink immediately. Consult a doctor.

Inhalation: Remove casualty from exposure ensuring one's own safety whilst doing so. If unconscious, check for breathing and apply artificial respiration if necessary. Consult a doctor.

5. FIRE-FIGHTING MEASURES

Extinguishing media: Carbon dioxide. Dry chemical powder. Alcohol or polymer foam. Suitable extinguishing media for the surrounding fire should be used. Use water spray to cool containers.

Exposure hazards: In combustion emits toxic fumes of carbon dioxide / carbon monoxide.

Protection of fire-fighters: Wear self-contained breathing apparatus. Wear protective clothing to prevent contact with skin and eyes.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:	Refer to section 8 of SDS for personal protection details. If outside do not approach from downwind. If outside keep bystanders upwind and away from danger point. Mark out the contaminated area with signs and prevent access to unauthorised personnel. Turn leaking containers leak-side up to prevent the escape of liquid.
Environmental precautions:	Do not discharge into drains or rivers. Contain the spillage using bunding.
Clean-up procedures:	Absorb into dry earth or sand. Transfer to a closable, labelled salvage container for disposal by an appropriate method. Clean-up should be dealt with only by qualified personnel familiar with the specific substance.

7. HANDLING AND STORAGE

Handling requirements:	Smoking is forbidden. Use non-sparking tools. Avoid direct contact with the substance. Ensure there is sufficient ventilation of the area. Do not handle in a confined space. Avoid the formation or spread of mists in the air.
Storage conditions:	Store in cool, well ventilated area. Keep container tightly closed. Keep away from sources of ignition.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Hazardous ingredients:	METHYL METHACRYLATE UK - 8 hour TWA: 208 mg/m3 UK - 15 min. STEL: 416 mg/m3
Engineering measures:	Ensure there is sufficient ventilation of the area.
Respiratory protection:	Respiratory protective device with particle filter. Gas/vapour filter, type A: organic vapours (EN141).
Hand protection:	Butyl gloves.
Eye protection:	Safety goggles. Ensure eye bath is to hand.
Skin protection:	Protective clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

State:	Liquid
Colour:	Colourless
Odour:	Characteristic odour
Oxidising:	Non-oxidising (by EC criteria)
Solubility in water:	Slightly soluble
Boiling point/range °C:	101
Flammability limits %: lower:	2.1
upper:	12.5
Flash point °C:	9
Autoflammability °C:	435
Vapour pressure:	29 mm Hg
Relative density:	1.06

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions. May polymerise on exposure to light. May undergo autopolymerisation.
Conditions to avoid:	Heat. Direct sunlight. Hot surfaces. Sources of ignition.
Materials to avoid:	Oxygen. Strong oxidising agents. Strong acids. Finely powdered metals.

Haz. decomp. products: In combustion emits toxic fumes of carbon dioxide / carbon monoxide.

11. TOXICOLOGICAL INFORMATION

Acute effects: Irritating to respiratory system and skin.
Sensitisation: May cause sensitisation by skin contact.

11. TOXICOLOGICAL INFORMATION (SYMPTOMS)

Skin contact: There may be irritation and redness at the site of contact.
Eye contact: There may be irritation and redness. The eyes may water profusely.
Ingestion: There may be soreness and redness of the mouth and throat.
Inhalation: There may be irritation of the throat with a feeling of tightness in the chest. Exposure may cause coughing or wheezing.

12. ECOLOGICAL INFORMATION

Mobility: Readily absorbed into soil.
Persistence and degradability: No data available.
Bioaccumulative potential: No data available.
Other adverse effects: Negligible ecotoxicity.
PBT identification: This substance is not identified as a PBT substance.

13. DISPOSAL CONSIDERATIONS

Disposal operations: Transfer to a suitable container and arrange for collection by specialised disposal company. Mix or disolve with a combustible material and burn in a chemical incinerator equipped with afterburners and scrubbers.
Disposal of packaging: Dispose of in a regulated landfill site or other method for hazardous or toxic wastes.
NB: The user's attention is drawn to the possible existence of regional or national regulations regarding disposal.

14. TRANSPORT INFORMATION

ADR / RID

UN no: 1133
Packing group: II
Shipping name: ADHESIVES
Labelling: 3

ADR Class: 3
Classification code: F1
Hazard ID no: 33

IMDG / IMO

UN no: 1133
Packing group: II
Marine pollutant: .

Class: 3
EmS: F-E,S-D
Labelling: 3

IATA / ICAO

Integra Adhesives

Issued: 08/01/2009
Revision No: 3

UN no:	1133	**Class:**	3
Packing group:	II	**Packing instructions:**	305(P&CA); 307(CAO)
Labelling:	3		

15. REGULATORY INFORMATION

Hazard symbols:

Highly flammable.
Irritant.

Risk phrases:

R11: Highly flammable.
R37/38: Irritating to respiratory system and skin.
R43: May cause sensitisation by skin contact.

Safety phrases:

S24: Avoid contact with skin.
S37: Wear suitable gloves.
S46: If swallowed, seek medical advice immediately and show this container or label.
S60: This material and its container must be disposed of as hazardous waste.

Seveso II guideline: Yes

Note: The regulatory information given above only indicates the principal regulations specifically applicable to the product described in the safety data sheet. The user's attention is drawn to the possible existence of additional provisions which complete these regulations. Refer to all applicable national, international and local regulations or provisions.

16. OTHER INFORMATION

Other information:

This safety data sheet is prepared in accordance with Regulation (EC) No 1907/2006.
* indicates text in the SDS which has changed since the last revision.

Risk phrases used in s.3:

R11: Highly flammable.
R37/38: Irritating to respiratory system and skin.
R43: May cause sensitisation by skin contact.

Legal disclaimer:

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. This company shall not be held liable for any damage resulting from handling or from contact with the above product.

Integra Adhesives

Issued: 08/01/2009
Revision No: 3

SAFETY DATA SHEET

SURFACE BONDER Xi/ESTONE Xi/13-E/TRIM BONDER TR30/RTP-01/SINK BONDER SK11: PART B

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

Product name: SURFACE BONDER Xi/ESTONE Xi/13-E/TRIM BONDER TR30/RTP-01/SINK BONDER SK11: PART B

Use of substance / preparation: Bonding agent for Acrylic, Polyester, Quartz and Natural Stone.

Company name:
Integra Adhesives Inc.
Unit 4, 33759 Morey Avenue
Abbotsford
British Columbia
V2S 2W5
Canada
Tel: +1 604 850 1321
Fax: +1 604 850 1354
Emergency tel: +44 (0)1604 521065
Email: contact@integra-adhesives.com

2. HAZARDS IDENTIFICATION

Main hazards: May cause harm to the unborn child. Irritating to eyes and skin. May cause sensitisation by skin contact. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Possible risk of impaired fertility.

Workplace exposure limit: This substance does not have a workplace exposure limit.

PBT: This substance is not identified as a PBT substance.

Directive 1999/45/EC: This preparation meets the criteria for classification as dangerous in accordance with Directive 1999/45/EC.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous ingredients:
DIBENZOYL PEROXIDE 1-10%
EINECS: 202-327-6 CAS: 94-36-0
[E] R2; [Xi] R36; [Sens.] R43
• DIBUTYL PHTHALATE 1-10%
EINECS: 201-557-4 CAS: 84-74-2
[T] R61; [N] R50; [Xn] R62
• BISPHENOL A-(EPICHLORHYDRIN) {REACTION PRODUCT} 70-90%
EINECS: 500-033-5 CAS: 25068-38-6
[Xi] R36/38; [Sens.] R43; [N] R51/53

4. FIRST AID MEASURES

Skin contact: Wash immediately with plenty of soap and water. Remove all contaminated clothes and footwear immediately unless stuck to skin. Transfer to hospital if there are burns or symptoms of poisoning.

Eye contact: Bathe the eye with running water for 15 minutes. Consult a doctor.

Ingestion: Wash out mouth with water. If conscious, give half a litre of water to drink immediately. If unconscious, check for breathing and apply artificial respiration if necessary.

Inhalation: Remove casualty from exposure ensuring one's own safety whilst doing so. If unconscious, check for breathing and apply artificial respiration if necessary. Move to fresh air in case of accidental inhalation of vapours. Consult a doctor.

5. FIRE FIGHTING MEASURES

Extinguishing media:	Suitable extinguishing media for the surrounding fire should be used.
Exposure hazards:	In combustion emits toxic fumes.
Protection of fire-fighters:	Wear self-contained breathing apparatus. Wear protective clothing to prevent contact with skin and eyes.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:	Refer to section 8 of SDS for personal protection details. Mark out the contaminated area with signs and prevent access to unauthorised personnel.
Environmental precautions:	Do not discharge into drains or rivers. Contain the spillage using bunding.
Clean-up procedures:	Transfer to a closable, labelled salvage container for disposal by an appropriate method. Clean-up should be dealt with only by qualified personnel familiar with the specific substance.

7. HANDLING AND STORAGE

Handling requirements:	Ensure there is sufficient ventilation of the area. Do not handle in a confined space. Avoid direct contact with the substance.
Storage conditions:	Store in cool, well ventilated area. Keep container tightly closed.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Hazardous ingredients:	DIBENZOYL PEROXIDE UK - 8 hour TWA: 5 mg/m3
Engineering measures:	Ensure there is sufficient ventilation of the area.
Respiratory protection:	Respiratory protective device with particle filter. Gas/vapour filter, type A: organic vapours (EN141).
Hand protection:	Butyl gloves.
Eye protection:	Safety goggles. Ensure eye bath is to hand.
Skin protection:	Protective clothing

9. PHYSICAL AND CHEMCIAL PROPERTIES

State:	Paste
Odour:	Barely perceptible odour
Oxidising:	Non-oxidising (by EC criteria)
Solubility in water:	Slightly soluble
Melting point/range °C:	0
Relative density:	1.11

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions. May polymerise on exposure to light.
Conditions to avoid:	Heat. Direct sunlight.
Materials to avoid:	Strong oxidising agents. Strong acids.
Haz. decomp. products:	In combustion emits toxic fumes of carbon dioxide / carbon monoxide.

11. TOXICOLOGICAL INFORMATION

Acute effects:	Irritating to eyes and skin.
Sensitisation:	May cause sensitisation by skin contact.
CMR effects:	Possible risk of impaired fertility.

11. TOXICOLOGICAL INFORMATION (SYMPTOMS)

Skin contact:	There may be mild irritation at the site of contact.
Eye contact:	There may be irritation and redness.
Ingestion:	There may be irritation of the throat.
Inhalation:	There may be irritation of the throat with a feeling of tightness in the chest.

12. ECOLOGICAL INFORMATION

Persistence and degradability:	No data available.
Bioaccumulative potential:	No data available.
Other adverse effects:	Toxic to aquatic organisms. Toxic to soil organisms.
PBT identification:	This substance is not identified as a PBT substance.

13. DISPOSAL CONSIDERATIONS

Disposal operations:	Transfer to a suitable container and arrange for collection by specialised disposal company. Mix or disolve with a combustible material and burn in a chemical incinerator equipped with afterburners and scrubbers.
Disposal of packaging:	Dispose of in a regulated landfill site or other method for hazardous or toxic wastes.
NB:	The user's attention is drawn to the possible existence of regional or national regulations regarding disposal.

14. TRANSPORT INFORMATION

ADR / RID

UN no: 3077 **ADR Class:** 9
Packing group: III **Classification code:** M7
Shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (BISPHENOL A-(EPICHLORHYDRIN) {REACTION PRODUCT})
Labelling: 9 **Hazard ID no:** 90

IMDG / IMO

UN no: 3077 **Class:** 9
Packing group: III **EmS:** NONE
Marine pollutant: . **Labelling:** 9

IATA / ICAO

UN no: 3077 **Class:** 9
Packing group: III **Packing instructions:** 911
Labelling: 9

15. REGULATORY INFORMATION

Hazard symbols:

Toxic.
Dangerous for the environment.

Risk phrases:

* R61: May cause harm to the unborn child.
R36/38: Irritating to eyes and skin.
R43: May cause sensitisation by skin contact.
R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R62: Possible risk of impaired fertility.

Safety phrases:

* S36/37: Wear suitable protective clothing and gloves.
S38: In case of insufficient ventilation, wear suitable respiratory equipment.
S45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S53: Avoid exposure - obtain special instructions before use.
S61: Avoid release to the environment. Refer to special instructions / safety data sheets.

Precautionary phrases:

* Restricted to professional users.

Seveso II guideline:

Yes

Note:

The regulatory information given above only indicates the principal regulations specifically applicable to the product described in the safety data sheet. The user's attention is drawn to the possible existence of additional provisions which complete these regulations. Refer to all applicable national, international and local regulations or provisions.

16. OTHER INFORAMTION

Other information:

This safety data sheet is prepared in accordance with Regulation (EC) No 1907/2006.
* indicates text in the SDS which has changed since the last revision.

Risk phrases used in s.3:

R2: Risk of explosion by shock, friction, fire or other sources of ignition.
R36: Irritating to eyes.
R43: May cause sensitisation by skin contact.
R61: May cause harm to the unborn child.
R50: Very toxic to aquatic organisms.
R62: Possible risk of impaired fertility.
R36/38: Irritating to eyes and skin.
R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Legal disclaimer:

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. This company shall not be held liable for any damage resulting from handling or from contact with the above product.

APPENDIX B

Health & Safety Plan

HALEY & ALDRICH, INC.
SITE-SPECIFIC HEALTH & SAFETY PLAN

For

Former Dollinger Site

1 Town Line Circle Brighton, New York

Project/File No. 70007-066

Prepared by: Santa E. McKenna Date: 16 March 2016

Revised by: Enter Revisor's Name Date: Enter Date

APPROVALS: The following signatures constitute approval of this Health & Safety Plan

Margaret B. Holt- Local H&S Coordinator	Date
Mark N. Ramsdell- Site Project Manager	Date
Brian Fitzpatrick – Corporate Director H&S (Only required per request of LHSCs)	Date

Date printed: 3/31/2016 at 9:06 AM

Note: This HASP has been developed for Haley & Aldrich purposes only and is not for use by others.

TABLE OF CONTENTS

1. PROJECT INFORMATION AND EMERGENCY RESOURCES

Project Name: Former Dollinger Site	**H&A File No.: 70007-066**
Location: 1 Town Line Circle Brighton, New York 14623	
Client/Site Contact: Phone Number: Emergency Phone Number:	Bunzl USA Inc. / Daniel J. Lett (314) 997-5959
General Contractor: **Superintendent:** Phone Number: Emergency Phone Number:	NA
H&A Project Manager: Phone Number: Emergency Phone Number:	Mark Ramsdell 585.321.4262 585.370.6597
Local Health & Safety Coordinator: Emergency Phone Number:	Margaret Holt 585.321.4214 585.721.2426
Nearest Hospital: Address: (see map on next page) Phone Number:	Strong Memorial Hospital 601 Elmwood Avenue Rochester, NY 14642 585.487.1195
Nearest Occ. Health Clinic: http://www.talispoint.com/liberty/ext/ Address: (see map on next page) Phone Number	Rochester Immediate Care 2685 E Henrietta Rd, Henrietta, NY 14467 585.444.0058
Liberty Mutual Claim Policy	**WC7Z11254100036**
Emergency Response Number:	**911**
Other Local Emergency Response Number:	Monroe County Sheriff's Office 585.753.4178
Other Ambulance, Fire, Police, or Environmental Emergency Resources:	Henrietta Fire District 585.334.1234

Work Scope:

This Site-Specific Health and Safety Plan addresses the health and safety practices and procedures that will be employed by all Haley & Aldrich employees participating in the site characterization of the Project Site. This plan is based on an assessment of the site-specific health and safety risks available to Haley & Aldrich and Haley & Aldrich's experience with other project sites. The scope of work for the Site Characterization includes: Conduct product inventory, installation of two sub slab vapor points, sample two sub slab vapor points and indoor air locations one outdoor air location.

Subcontractor(s) to be involved in on-site activities:

Firm Name	Work Activity
Haley & Aldrich, Inc.	Product inventory, temporary sub-slab vapor point installation, conduct indoor air sampling
Enter Subcontractor Name	Enter Work Activity

Projected Start Date: Enter Start Date

Projected Completion Date: Enter Completion Date

Estimated Number of Days to Complete Field Work: 1 day

Directions to the Nearest Hospital:

9 min (3.2 miles)

via W Henrietta Rd

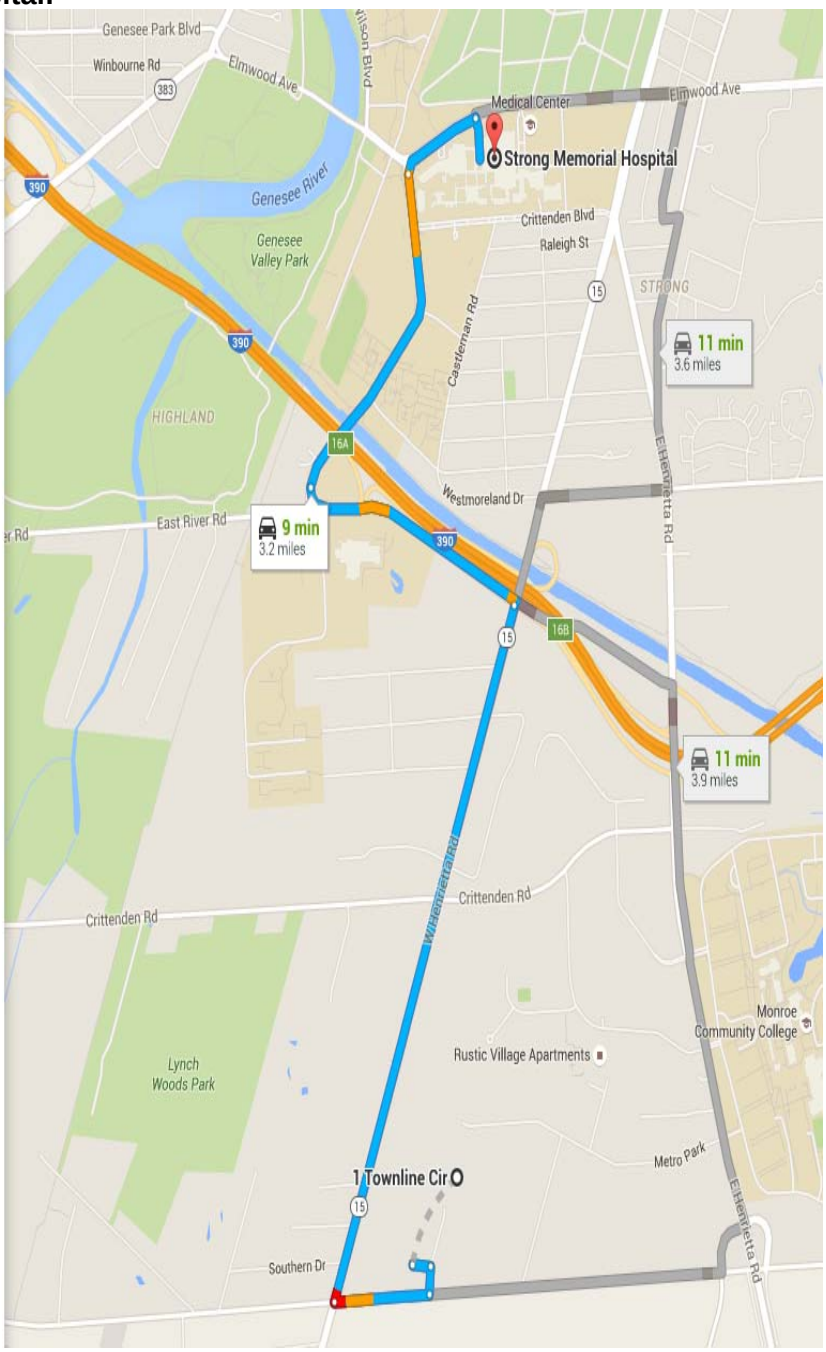
8 min without traffic

1 Townline Cir
Rochester, NY 14623

- Take Townline Cir to Brighton Henrietta Town Line Rd
  29 s (499 ft)
- Take W Henrietta Rd, E River Rd and Kendrick Rd to Middle Drive in Rochester
  8 min (3.0 mi)
- Turn right onto Middle Drive
  Destination will be on the left
  24 s (387 ft)

Strong Memorial Hospital, 601 Elmwood Ave
Rochester, NY 14642

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.



2. SITE DESCRIPTION

Site Classification:

☐ Industrial	☐ Commercial	☑ Other Specify

General Description:

Per the NYDEC's Consent Order , Haley & Aldrich will be directing the Contractor to install a series of (3) test pits to investigate the foundation of the NW corner of the Building to access the location, depth and construction details of the footings to the structure.

Background and Historic Site Usage:

The former Dollinger Facility is an approximately 18.5 acre property which is roughly rectangular in shape, located at 1 Townline Circle in Brighton, New York. An approximately 140,000 square foot, 1-story, slab-on-grade building containing manufacturing, warehousing, and office space is centrally located on the Site. Building structure elements (columns, footers) are founded on relatively shallow supporting soils (reportedly four to five feet). Exterior walls consist of concrete "tip-up" panels reportedly founded at the same approximate shallow depth.

The Site was the location of the manufacture and assembly of industrial filters between 1970 and 1987. Operations at the facility ceased in approximately 1987 and the building was vacated of personnel, equipment, and operations prior to its sale in 1989. The Site is currently owned by Wilray, Inc.

Project Scope:

Conduct product inventory, installation of two sub slab vapor points, sample two sub slab vapor points and indoor air locations one outdoor air location. Samples will be analyzed for trichloroethene (TCE) and its subsequent breakdown products (cis-1,2-dichloroethene (cis-DCE), and vinyl chloride (VC)).

Overview of Hazards:

The sub slab vapor points could potentially contain contamination (chlorinated VOCs greater than 10 ppm; in soil and groundwater. Personnel Protective Equipment will be required to limit exposure to these compounds via dermal adsorption and/or inhalation.

Site Status: Indicate current activity status and describe operations at the site.

- ☑ Active
- ☐ Inactive
- ☑ Partially active
- ☐ Other

The area where work will be performed is currently used as a storage area and an active facility for counter top manufacturing.

Site Plan:

Is a site plan or sketch available? ☑ Y ☐ N

If yes, attach a copy to this plan. If no, explain how site activities and work areas will be referenced.

Work Areas:

List/identify each specific work area(s) on the job site and indicate its location(s) on the site plan:

1. Building Annex
2. Solid Surface's Main Area
3. Enter work area description
4. Enter work area description

3. PROJECT TASK BREAKDOWN

List and describe each distinct work task below.

Task No.	Detailed Task Description	Employee(s)	Work Date(s) or Duration
1	Product Inventory	Enter employees	Enter dates/duration
2	Install sub slab vapor points	Enter employees	Enter dates/duration'
3	Conduct sub slab vapor and indoor/outdoor air sampling	Enter employees	Enter dates/duration'
4	Enter detailed task description	Enter employees	Enter dates/duration'

4. HAZARD ASSESSMENT

Safety Data Sheets (SDS) of hazardous materials used during the execution of work shall be available on site. SDSs are required for chemicals used to prepare samples, calibration gases, etc. SDSs are not required for waste materials. SDSs are available in Boston-based field vehicles and at the H&A Geotechnical Laboratory.

Chemical Hazards:

Does chemical analysis data indicate that the site is contaminated? ☐ Y ☑ N

Indicate the potential physical state of the hazardous materials at the site.

- ☑ Gas/Vapor
- ☐ Sludge
- ☑ Liquid
- ☑ Solid/Particulate

Indicate the anticipated or actual class of compounds at the site.

- ☐ Asbestos
- ☐ Inorganics
- ☐ BTEX
- ☐ Pesticides
- ☑ Chlorinated Solvents
- ☐ Petroleum products
- ☐ Heavy Metals
- ☐ Other Specify

Impacted Environments:

Indicate media in which contamination is expected.

- ☑ Air
- ☑ Groundwater
- ☐ Soil
- ☑ Sediment
- ☐ Surface water
- ☐ Other Specify

Estimated concentrations:

Indicate medium of major chemicals expected to be encountered by onsite personnel.

Work Activity	Media	Chemical	Anticipated Concentration
Vapor Sampling	Vapor	Trichloroethene	<1 PPM
Enter work activity	Enter media	Enter chemical	Enter anticipated concentration
Enter work activity	Enter media	Enter chemical	Enter anticipated concentration
Enter work activity	Enter media	Enter chemical	Enter anticipated concentration

(Media key: A = Air; GW = Groundwater; SW = Surface Water; SO = Soil; SE = Sediment)

Chemicals of Concern:

Enter and describe the major chemicals of concern and include OSHA personal exposure limits (PEL) and action levels for each.

The following link provides generic H&S topic information that can be copied and pasted into this section. Prior to selecting information from the linked document, users must carefully read the information to ensure its suitability. Topics are alphabetized for ease of use.

https://hank.haleyaldrich.com/staffcenter/safety/SitePages/HASP%20Templates.aspx

Topics can be found in the HASP_Topics document.

TABLE 1
OCCUPATIONAL EXPOSURE LIMITS (CONCENTRATIONS IN AIR)

(CIRCLE CONTAMINANTS OF CONCERN, WRITE ADDITIONAL CONTAMINANTS AND EXPOSURE ON LAST PAGE)

CHEMICAL	ROUTES OF EXPOSURE	IDLH	Ceiling	STEL	PEL	TLV	REL	PID (IP eV)	FID	ODOR THRES-HOLD	IRRITATION THRESHOLD	ODOR DESCRIPTION
VAPORS & GASES												
Acetone	R, I, C	2500	-	750 [ACGIH]	1000	500	250	9.69	60	13	-	fragrent, mint-like
Ammonia	R, I, C	300	-	35 [NOSH, ACGIH]	50	25	25	10.18**	-	0.5-2	10	Pungent suffocating odor
Benzene	R,A,I,C	Ca [500]	-	1 [NIOSH]; 2.5 [ACGIH]	1	0.5	0.1	9.24	150	4.68	-	Solvent, aromatic
Carbon tetrachloride (Tetrachloromethane)	R,A,I,C	Ca [200]	25 [instantaneous] 200 [5 min peak in any 4 hrs.]	2 [NIOSH, 60-min]; 10 [ACGIH]	2	5	Ca	11.47**	10	50	-	Sweet, pungent, ether-like
Chlorobenzene	R,I,C	1000	-	-	75	10	-	9.07	200	0.68	-	Almond-like
Chloroform	R,I,C	Ca [500]	50 [OSHA]	2 [NIOSH, 60-min]	-	10	-	11.42**	65	50	-	Sweet, pleasant
o-Dichlorobenzene	R,A,I,C	200	50 [NIOSH, OSHA]	50 [ACGIH]	-	25	-	9.06	50	0.3	E 20-30	Pleasant, aromatic
p-Dichlorobenzene	R,A,I,C	Ca [150]	-	-	75	10	Ca	8.98	-	0.18	E 80-160	Distinct, aromatic, mothball-like
Dichlorodifluoromethane (Freon 12)	R,C	15000	-	-	1000	1000	1000	11.75**	15	-	-	Ether-like when at very high concs.
1,1-Dichloroethane	R,I,C	3000	-	-	100	100	100	11.06**	80	200	-	Distinct, chloroform-like
1,2-Dichloroethane (Ethylene dichloride)	R,I,A,C	Ca [50]	100 [OSHA]	2 ppm [NIOSH]; 200 ppm [OSHA, 5-min max peak in any 3 hours]	50	10	1	11.05**	80	88	-	Chloroform-like
1,1-Dichloroethylene (1,1-DCE, Vinylidene chloride)	R,A,I,C	Ca [ND]	-	-	-	5	Ca	10.00**	40	190	-	Chloroform-like
1,2-Dichloroethylene	R,I,C	1000	-	-	200	200	200	9.65	50	0.85	-	Bitter, chloroform-like
Ethanol	R,I,C	3300	-	-	1000	1000	1000	10.47**	25	10	-	Weak, ether-like, wine-like
Ethylbenzene	R,I,C	800	-	125 [NIOSH; ACGIH]	100	100	100	8.76	100	2.3	E 200	Aromatic
Ethylene Glycol	R,I,C	ND	50 [OSHA]; 100 mg/m^3 [ACGIH]	-	-	-	-	-	-	-	-	Odorless
Formaldehyde	I,C	Ca [20]	0.1 [NIOSH, 15-min]; 0.3 [ACGIH]	2	0.75	-	Ca [0.016]	10.88**	-	0.83	-	Pungent, suffocating
Gasoline	R,I,A,C	Ca [ND]	-	500 [OSHA; ACGIH]	300	300	-	-	-	-	E 0.5	Petroleum-like
n-Hexane	R,I,C	1100	-	-	500	50	50	10.18	70	130	E.T 1400-1500	Gasoline-like
Hydrogen Cyanide	R,A,I,C	50	4.7 [ACGIH; Skin]	4.7 [NIOSH - skin]	10 [skin]		-	-	-	0.58	-	Bitter almond
Hydrogen peroxide	R,I,C	75	-	-	1	1	1	10.54**	-	-	-	Sharp
Methanol	R,I,A,C	6000	-	250 [NIOSH; ACGIH, skin]	200	200 [skin]	200	10.84**	12	1000	-	Pungent
Methyl Ethyl Ketone Peroxide	R,I,C	ND	0.2 [NIOSH; ACGIH] 0.7 [OSHA]	-	-	-	-	-	-	-	-	Characteristic odor
Methyl Chloroform (1,1,1-TCA)	R,I,C	700	350 [NIOSH, 15-min]	450 [ACGIH]	350	350	Ca	11.00**	105	20-100	-	Chloroform-like
Methylene Chloride (Dichloromethane, Methylene dichloride)	R,I,A,C	Ca [2300]	-	125	25	50	Ca	11.32**	100	25-50	E 5000	Chloroform-like
Methyl Mercaptan	R,C	150	10 [OSHA] 0.5 [NIOSH, 15-min]	-	-	0.5	-	9.44	-	-	-	Garlic, rotten cabbage
MIBK (Hexone)	R,I,C	500	-	75 [NIOSH; ACGIH]	100	50	50	9.30	-	-	-	Pleasant
Naptha (coal tar)	R,I,C	1000	-	-	100	400	100	-	-	-	-	Aromatic
Naphthalene	R,A,I,C	250	-	15 [NIOSH; ACGIH]	10	10	10	8.12	-	0.3	E 15	Mothball-like
Octane	R,I,C	1000	385 [NIOSH, 15-min]	-	500	300	75	9.82	80	48	-	Gasoline-like
Pentachlorophenol	R,A,I,C	2.5 mg/m^3	-	-	0.5 mg/m^3 [skin]	0.5 mg/m^3 [skin]	0.5 mg/m^3 [skin]	-	-	-	-	Pungent when hot, benzene-like
Phenol	R,A,I,C	250	15.6 [NIOSH, 15-min]	-	5 [skin]	5 [skin]	5 [skin]	8.50	-	0.04	E.N.T. 68	Sweet, acrid
Propane	R,C	2100	-	-	1000	1000	1000	11.07**	80	1600	-	Odorless (commonly smells foul due to additive for odor detection)
Stoddard Solvent (Mineral Sprits)	R,Cl,I	20000 mg/m^3	1800 mg/m^3 [NIOSH, 15-min]	-	500	100	350 mg/m^3	-	-	1	E 400	Kerosene-like
Styrene	R,I,A,C	700	200 [OSHA]	100 [NIOSH]; 600 [OSHA, 5-min max peak in any 3 hours]; 40 [ACGIH]	100	20	50	8.40	85	0.047	E 200-400	Sweet, floral
1,1,2,2-Tetrachloroethane	R,I,A,C	Ca [100]	-	-	5 [skin]	1 [skin]	1 [skin]	11.10**	100	1.5	-	Pungent, chloroform-like
Tetrachloroethylene (Perchloroethylene, Perc, PCE)	R,I,A,C	Ca [150]	200 [OSHA]	300 [OSHA, 5-min max peak in any 3-hours]; 100 [ACGIH]	100	25	Ca	9.32	70	4.68	N.T513-690	Chloroform-like
Toluene	R,A,I,C	500	300 [OSHA]	150 [NIOSH]; 500 [OSHA, 10-min max peak]	200	50	100	8.82	110	2.14	E300-400	Sweet, pungent, benzene-like
Trichloroethylene (TCE)	R,I,A,C	Ca [1000]	200 [OSHA]	300 [OSHA, 5-min max peak in any 2-hours]; 100 [ACGIH]	100	50	Ca	9.45	70	21.4	-	Chloroform-like
1,2,3-Trimethylbenzene	R,I,C	ND	-	-	-	-	25	8.48	-	-	-	Distinctive, aromatic
1,2,4-Trimethylbenzene	R,I,C	ND	-	-	-	-	25	8.27	-	-	-	Distinctive, aromatic
1,3,5-Trimethylbenzene	R,I,C	ND	-	-	-	-	25	8.39	-	-	-	Distinctive, aromatic
Turpentine	R,A,I,C	800	-	-	100	20	100	-	-	200	E.N 200	Pine-like
Vinyl Chloride	R,C	Ca [ND]	5 [OSHA, 15-min]	-	1	1	Ca	9.99	-	3000	-	Pleasant odor at high concs.
Xylenes	R,A,I,C	900	-	150 [NIOSH, ACGIH]	100	100	100	8.56 (m- and o-) 8.44 (p-)	111/116	1.1	E.N.T. 200	Aromatic

TABLE 1
OCCUPATIONAL EXPOSURE LIMITS (CONCENTRATIONS IN AIR)

(CIRCLE CONTAMINANTS OF CONCERN, WRITE ADDITIONAL CONTAMINANTS AND EXPOSURE ON LAST PAGE)

CHEMICAL	ROUTES OF EXPOSURE	IDLH	Ceiling	STEL	PEL	TLV	REL	PID (IP eV)	FID	ODOR THRES-HOLD	IRRITATION THRESHOLD	ODOR DESCRIPTION
DUSTS, MISTS, FUMES, AND MISCELLANEOUS COMPOUNDS												
Asbestos	R	Ca (ND)	-	-	0.1 fiber/cc	0.1 fiber/cc	0.1 fiber/cc	-	-	-	-	-
PCBs-42% Chlorine	R,A,I,C	Ca [5 mg/m^3]	-	-	1 mg/m^3 [skin]	1 mg/m^3 [skin]	0.001 mg/m^3	-	-	-	-	Mild, hydrocarbon
PCBs-54% Chlorine	R,A,I,C	Ca [5 mg/m^3]	-	-	0.5 mg/m^3 [skin]	0.5 mg/m^3 [skin]	0.001 mg/m^3	-	-	-	-	Mild, hydrocarbon
Aluminum - metal dust	R,C	ND	-	-	15 mg/m^3 (total); 5 mg/m^3 (respirable)	10 mg/m^3	10 mg/m^3 (total); 5 mg/m^3 (respirable)	-	-	-	-	-
Aluminum - soluble salts	R,I,C	ND	-	-	2 mg/m^3	2 mg/m^3	2 mg/m^3	-	-	-	-	-
Arsenic- inorganic	R,A,I,C	Ca [5 mg/m^3]	0.002 mg/m^3 [NIOSH, 15-min]	-	0.01 mg/m^3	0.01 mg/m^3	Ca	-	-	-	-	-
Barium:soluble compounds	R,I,C	50 mg/m^3	-	-	0.5 mg/m^3	0.5 mg/m^3	0.5 mg/m^3	-	-	-	-	-
Beryllium	R,C	Ca [4 mg/m^3]	0.005 mg/m^3 [OSHA]; 0.025 mg/m^3 [OSHA, 30-min max peak]; 0.0005 mg/m^3	0.01 mg/m^3 [ACGIH]	0.002 mg/m^3	0.002 mg/m^3	Ca	-	-	-	-	-
Cadmium dusts	R,I	Ca [9 mg/m^3]	-	-	0.005 mg/m^3	0.01 mg/m^3	Ca	-	-	-	-	-
Chromates (Cr(VI) Compounds) & Chromic Acid	R,I,C	Ca [15 mg/m^3]	0.1 mg/m^3 [OSHA]	-	0.001 mg/m^3	0.05 mg/m^3 [water soluble]; 0.01 mg/m^3 [insoluble]	Ca	-	-	-	-	-
Chromium (III) Compounds	R,I,C	25 mg/m^3	-	-	0.5 mg/m^3	0.5 mg/m^3	0.5 mg/m^3	-	-	-	-	-
Chromium Metal	R,I,C	250 mg/m^3	-	-	1 mg/m^3	0.5 mg/m^3	0.5 mg/m^3	-	-	-	-	-
Copper - dust & mist	R,I,C	100 mg/m^3	-	-	1 mg/m^3	1 mg/m^3	1 mg/m^3	-	-	-	-	-
Lead	R,I,C	100 mg/m^3	-	-	0.050 mg/m^3	0.05 mg/m^3	0.050 mg/m^3	-	-	-	-	-
Manganese (compounds and fume)	R,I	500 mg/m^3	5 mg/m^3 [OSHA]	3 mg/m^3 [NIOSH]	-	0.2 mg/m^3	1 mg/m^3	-	-	-	-	-
Mercury & Inorganic Mercury Compounds	R,I,A,C	10 mg/m^3	0.1 mg/m^3 [NIOSH, Skin]; 0.1 mg/m^3 [OSHA]	-	-	0.025 mg/m^3	0.05 mg/m^3 [skin]	-	-	-	-	-
Organo-Mercury Compounds	R,A,I,C	2 mg/m^3	0.04 mg/m^3 [OSHA]	0.03 mg/m^3 [NIOSH]	0.01 mg/m^3	0.01 mg/m^3 [alkyl]; 0.1 mg/m^3 [aryl]	0.01 mg/m^3	-	-	-	-	-
Nickel (metal and compounds)	R,I,C	Ca [10 mg/m^3]	-	-	1 mg/m^3	1.5 mg/m^3 [metal]; 1 mg/m^3 [soluble inorganic compounds]; 1 mg/m^3 [insoluble	0.015 mg/m^3	-	-	-	-	-
Particulate (Not otherwise regulated)	R, C	ND	-	-	15 mg/m^3 (total); 5 mg/m^3 (respirable)	10 mg/m^3 (inhalable); 3 mg/m^3 (respirable)	-	-	-	-	-	-
Portland cement	R,I,C	5000 mg/m^3	-	-	50 mppcf	10 mg/m^3	10 mg/m^3 (total); 5 mg/m^3 (respirable)	-	-	-	-	-
Selenium compounds	R,I,C	1 mg/m^3	-	-	0.2 mg/m^3	0.2 mg/m^3	0.2 mg/m^3	-	-	-	-	-
Silica, crystalline	R, C	Ca [25 mg/m^3 (cristobalie, tridymite); 50 mg/m^3 (quartz, tripoli)]	-	-	Dependent on silicon dioxide content of silica (see Appendix C of the NIOSH Pocket Guide to Chemical Hazards, 2005)	Dependent on minerology [see ACGIH 2005 TLVs and BEIs Handbook]	0.05 mg/m^3	-	-	-	-	-
Silver (metal and soluble compounds)	R,I,C	10 mg/m^3	-	-	0.01 mg/m^3	0.1 mg/m^3	0.01 mg/m^3	-	-	-	-	-
Thallium, soluble	R,A,I,C	15 mg/m^3	-	-	0.1 mg/m^3 [skin]	0.1 mg/m^3 [skin]	0.1 mg/m^3 [skin]	-	-	-	-	-
Tin (metal)	R,C	100 mg/m^3	-	-	2 mg/m^3	2	2 mg/m^3	-	-	-	-	-
Tin (organic compounds)	R,A,I,C	25 mg/m^3	-	-	0.1 mg/m^3	0.1 mg/m^3 [skin]	0.1 mg/m^3 [skin]	-	-	-	-	-
Zinc oxide dust & fume	R	500 mg/m^3	15 mg/m^3 [NIOSH, dust]	10 mg/m^3 [NIOSH; ACGIH; fume]	15 mg/m^3 (total dust); 5 mg/m^3 [respirable dust]; 5 mg/m^3 [fume]	2 mg/m^3 [respirable]	5 mg/m^3 (total dust); 5 mg/m^3 [fume]	-	-	-	-	-

NOTES & ABBREVIATIONS:

All units in parts per million (ppm) unless otherwise noted.
R = Respiratory (Inhalation)
I = Ingestion
A = Skin Absorption
C = Skin Contact
-: Not available
ND: Not detectable.
Ca = Carcinogen
** = Use 11.7 eV lamp
IP: Ionization potential
eV: Electrovolts

IDLH: Immediately dangerous to life and health
Ceiling: Highest allowable instantaneous C = Skin and/or Eye Contact
STEL: Short-term exposure limit. Exposure period is 15 minutes unless otherwise indicated
PEL: OSHA Permissible Exposure Limit (legally-enforceable)
REL: NIOSH Recommended Exposure Limit
PID: Photoionization Detector
OSHA: United States Occupational Safety and Health Administration
NIOSH: National Institute of Occupational Safety and Health
TLV: ACGIH Threshold Limit Value
ACGIH: American Conference of Governmental Industrial Hygienists

Physical Hazards:

Indicate all hazards that may be present for each task. If any of these potential hazards are checked, it is the project manager's responsibility to determine how to eliminate/minimize the hazard to protect onsite personnel.

Copy and paste a checkmark "✓"into appropriate boxes.

Potential Job Hazards	**Task 1** Conduct Product Inventory	**Task 2** Install sub slab vapor points	**Task 3** Conduct sub slab vapor, indoor/outdoor air sampling
Confined space entry*			
Underground utilities		✓	
Overhead utilities			
Electrical hazards		✓	
Excavations greater than 4' depth			
Open excavation fall hazards			
Heavy equipment		✓	
Drilling hazards			
Noise (above 85 dBA)		✓	
Traffic concerns			✓
Extreme weather conditions			
Rough terrain for drilling equipment			
Buried drums			
Heavy lifting (more than 50 lbs)			
High risk fire hazard			
Poisonous insects or plants			
Water hazards			
Use of a boat			
Lockout/Tagout requirements			
Other: Specify			

***CONFINED SPACE ENTRY REQUIRES SPECIAL PROCEDURES, PERMITS AND TRAINING AND MUST BE APPROVED BY THE CORPORATE HEALTH & SAFETY MANAGER.**

Potential Activity Hazards and Hazard Controls:

Copy and paste a checkmark "✓" adjacent to potential activity hazards and relevant hazard controls.

POTENTIAL ACTIVITY HAZARDS

Abrasions and Cuts ✓
Access
Asphyxiation
Bacteria
Biological Hazards
Bloodborne Pathogens
Cave Ins
Chemical/Thermal Burns
Chemicals
Cold Stress
Compressed Gases
Confined Spaces
Congestion
Defective Equipment ✓
Dermatitis
Dropping Materials/Tools to Lower Levels
Drowning or Flowing Water
Electrical Shock
Energized Equipment ✓
Equipment Misuse ✓
Ergonomics
Excavations
Explosions
Fatigue
Fire ✓
Flammability
Flying debris ✓
Foreign Body in Eye ✓
Frostbite/Cold
Fueling and Fuel Storage
Fugitive Dust ✓
Fumes ✓
Generated Wastes
Guards removed
Hazardous Materials ✓
Heat Stress (cramps, exhaustion, stroke)
Heavy Equipment Operation ✓
Heavy Equipment/Stability ✓
Heavy Lifting ✓
High crime area (violence)
High Winds
Hoists, Rigging, Slings, Cables
Housekeeping – Improper ✓
Illumination – Poor ✓
Impact ✓
Inability to Maintain Communication
Inclement Weather ✓
Inclines
Insects/Reptiles
Mold ✓
Moving Equipment, Conveyors or Vehicles ✓
Muddy Site Conditions
New Personnel
Noise ✓
Odor ✓
Overhead Utilities
Overhead Work
Overloaded Equipment
Oxygen deficiency
Pinch Points ✓
Poisonous Plants
Pressure
Pressurized Lines
Radiation
Repetitive Motion
Rigging - Improper
Sharp Objects ✓
Silicosis ✓
Slips, Trips, and Falls ✓
Sprains and Strains ✓
Steam
Sunburn
Surface Water Run-off
Toxicity
Traffic ✓
Underground Utilities ✓
Uneven Terrain
Unsafe Atmosphere
Vibration
Visibility - Poor
Visitors Known/Unknown
VOC Emissions ✓
Weight ✓
Work at Depth
Work at Heights
Work over Water
Working on Ice

HAZARD CONTROLS

Air Monitoring
Appropriate Clothing/Monitoring ✓Of Weather
Appropriate Labels/Signage
Barricades/Fencing/Silt Fencing
Buddy System - Attendant
Chock Blocks
Confined Space Procedures
Decontamination Procedures
Derived Waste Management Plan
Drinking Water/Fluids
Dust Abatement Measures ✓
Emergency Action Plan Procedures
Equipment Inspection
Equipment Manuals/Training
Exclusion/Work Zones
Exhaust Ventilation
Eye Protection ✓
Fall Protection
Fire Extinguisher ✓
Flotation Devices/Lifelines
Gloves ✓
Ground Fault Interrupter
Grounded Hydraulic Attachments
Grounded Equipment/Tanks
Hand Signal Communication
Hard Hat ✓
Hazardous/Flammable Material Storage
Hearing Protection ✓
High Visibility Safety Vest ✓
Hoses, Access to Water
Hotwork Procedures
Isolation of Energy Sources(Lockout/Tagout)
Machine/Equipment Guards
Manual Lifting Equipment
Police Detail
Proper Lifting Techniques
Proper Tool for Job
Proper Work Position/Tools
Protective Equipment
Radio Communication
Respirator, (Specify Type)
Safety Harness /Lanyard/Scaffold
Security Escort
Sloping, Shoring, Trench Box
Spill Prevention Measures
Spill Kits
Stormwater Control
Traffic Controls
Procedures/Methods
Vehicle Inspection
Visitor Orientation Escort
Window Cleaning/Defrost

Specific Activity Hazards and Precautions

Safety Meetings

All H&A personnel visiting the site will be given an orientation safety meeting and are required to read and sign this HASP. Daily safety meetings will be conducted onsite and documented on a Health & Safety Tailgate Meeting Form.

Utility Locators and Underground Hazards

Prior to drilling or excavating, Haley & Aldrich staff members will ensure that permission has been gained from the property owner to access the property. Contact site facilities personnel to assist with location of underground utilities. Before marking any proposed exploration location, it is critical that all readily available information on underground utilities and structures be obtained. The estimated location of utility installations, such as gas, electric, fuel, steam, sewer, telephone, fiber optic, water, drainage or any other underground installation that may be expected to be encountered during drilling work, will be identified with the appropriate authority. Appropriate authorities include client representatives, utility companies, nonprofit organizations (e.g., "Dig-Safe), and others.

Heavy Equipment

Staff Members must be especially careful and alert when working with contractors who use heavy equipment, since equipment failure or breakage can lead to accidents and worker injury. Cranes and equipment for drilling, pile driving, test pitting and coring is of special concern. Should these devices fail during operation the likelihood of worker injury is high. Equipment of this nature should be visually inspected and checked for proper working order prior to the commencement of field work. Those that operate heavy equipment must meet all of the requirements to operate heavy equipment. Haley & Aldrich, Inc. staff members that supervise projects or are associated with such high risk projects that involve digging should use due diligence when working with a construction firm. Maintain visual contact with operators at all times and keep out of the strike zone whenever possible. Always approach heavy equipment with an awareness of the swing radius and traffic routes of each piece of equipment and never go beneath a hoisted load. High-visibility safety vests must be worn onsite at all times. Avoid fumes created by heavy equipment exhaust.

Noise Reduction

Site activities in proximity to heavy equipment often expose workers to excessive noise. It is anticipated that situations may arise when noise levels may exceed the OSHA Action Level of 85 dBA in an 8-hour time-weighted average (TWA). An example of this possibility is working in close proximity to the subcontractor during drilling activities onsite. If excessive noise levels occur, efforts will be made to control this by issuance of earplugs to all personnel and by implementing a system of hand signals understood by all.

Work Site Access & Controls (Standard Precautions)

The work area is restricted to authorized personnel. Clearly define the work area before beginning activities for the day. Caution tape and safety cones must be provided as necessary for vehicular traffic concerns and to protect passers-by. Proper housekeeping is essential to avoid creating hazards to pedestrian and vehicular traffic. Excavations in progress will not be left unattended at any time. Running equipment will not be left unattended at any time. Test borings and test pits will be backfilled upon completion and the area restored. Drilling equipment will be secured above test borings during work stoppages and at the end of the workday.

Weather Related Hazards

H&A employees and their subcontractors should be aware of potential health effects and/or physical hazards of working during inclement weather. Refer to OP1003-Cold Stress and OP1015-Heat Stress for discussion on weather hazards.

The following link provides generic H&S topic information that can be copied and pasted into this section. Prior to selecting information from the linked document, users must carefully read the information to ensure its suitability. Topics are alphabetized for ease of use.

http://intranet/~/media/Files/Reference Resources/H and S/HASPtemplates/HASP Topics.aspx

5. PROTECTIVE MEASURES

Personal Protective Equipment Requirements:

Copy and paste a checkmark "✓"into appropriate boxes.

Required PPE	Task 1	Task 2	Task 3
	Conduct Product Inventory	Install sub slab vapor points	Conduct sub slab vapor, indoor/outdoor air sampling
Hard hat			
Safety glasses w/side shields	✓	✓	✓
Steel-toe footwear	✓	✓	✓
Hearing protection (plugs, muffs)		✓	
Tyvek ™ coveralls			
PE-coated Tyvek™ coveralls			
Boots, chemical resistant			
Boot covers, disposable			
Leather work gloves			
Inner gloves - nitrile	✓	✓	✓
Outer gloves - kevlar		✓	
Tape all wrist/ankle interfaces			
Half-face respirator*			
Full-face respirator*			
Organic vapor cartridges			
Acid gas cartridges			
Other cartridges: Enter type here			
P-100 (HEPA) filters			
Face shield			
Personal Flotation Device (PFD)			
High-Visibility Safety Vest		✓	✓
Other:			
Level of protection required [C or D]:	D	D	D

* In the event of respirator use, H&A staff must be medically qualified, fit tested and clean shaven with no facial hair that will interfere with the seal.

The required PPE checked in any box above must be on site during the task being performed. Work shall not commence unless the required PPE is present.

Site Safety Equipment Requirements:

Check all items that are required to be on site.

Site Safety Equipment

☑ Fire Extinguisher	☑ First Aid Kit	☐ Flashlight
☐ Air horn/signaling device	☐ Cellular Phone	☐ Duct tape
☐ Ladder	☐ Barricade tape	☐ Drum dolly
☐ Two-way radio	☐ Safety cones	☐ Harness/Lanyard
☐ Other Specify		

The required equipment checked in any box above must be on site during the task being performed. Work shall not commence unless the equipment is present.

6. MONITORING PLAN AND EQUIPMENT

Is air/exposure monitoring required at this work site for personal protection? ☐ Y ☑ N

Is perimeter monitoring required for community protection? ☐ Y ☑ N

Monitoring/Screening Equipment Requirements:

Check all items that are required to be on site.

Required Monitoring/Screening Equipment

☑ Photo-Ionization Detector (PID) 10.2eV	☐ Combustible Gas Indicator (CGI) (LEL)
☐ Photo-Ionization Detector (PID) 11.7eV	☐ Multiple Gas Detector LEL/O2/H2S/CO
☐ Photovac Micro Tip (PID) 10.6eV	☐ Dust Monitors (RAMs)
☐ Organic Vapor Monitor (FID)	☐ Colorimetric tubes
☐ Photovac Gas Chromatagraph (GC)	☐ Other

The required equipment checked in any box above must be on site. Work shall not commence unless the equipment is present.

Standard Action Levels and Required Responses:

Exposure Guidelines for common contaminants are listed in Table 1 - Occupational Exposure Limits in the Chemical Hazards section above.

Requirements for PPE upgrades based on monitoring are in Table 2 - Monitoring Methods, Action Levels and Protective Measures following the Specific Monitoring Requirements section below.

Action levels for readings obtained with a multiple gas detector are listed below.

Instrument	Normal	Operating levels	Action levels – required responses
Oxygen Meter	20.9%	Between 19.5-23.5%	Below 19.5 %: leave area, requires supplied air Above 23.5%: leave area, fire hazard
CGI	0%	Less than 10%	Greater than 10%: fire/explosion hazard; cease work
Hydrogen Sulfide	0%	Less than 10 ppm.	Greater than 15 ppm (or 10 ppm for 8 hrs) requires supplied air respirator
Carbon Monoxide	0%	Less than 25 ppm	Greater than 200 ppm for 1 hour (or 25 ppm for 8 hrs) requires supplied air respirator

Standard Air Monitoring Plan (Volatiles):

- Prior to the beginning of work obtain background readings with the PID away from the site.
- Monitor the breathing zone when site soil is exposed (e.g., while drilling or excavating is occurring, etc.) with the PID.
- Monitoring should be conducted most frequently (e.g., every 15-30 minutes) when drilling or excavation first begins in a particular area and when soil is removed from the hole. After this, and if no exceedances of exposure limits are noted (see below), monitoring may be conducted less frequently (e.g., every 60 minutes).
- H&A general exposure limits will be used when a mixture of potentially volatile chemicals are suspected to be present in soil at the site.

In summary, if a reading of 10 ppm above background is detected with the PID for 5 minutes or longer, back away for a few minutes. Screen the air again after any vapors/gases have been given a chance to dissipate. If 10 ppm above background is still noted, evacuate the area and call the LHSC and PM for further guidance.

- Record monitoring data and PPE upgrades in field book or on Record of Field Monitoring form and maintain with project files.

- Air monitoring for exposure should be based on the frequency established under the Standard Air Monitoring Plan or under the Specific Monitoring Requirements. Record time, location and results of monitoring and actions taken based upon the readings.

Standard Dust Control Measures and Monitoring Plan:

Dust Control Measures:

It is anticipated that exposure to airborne dust can be mitigated during work operations as necessary to control dust emissions by means of limiting the area of exposed soils and through the use of water sprays. If dust emissions cannot be controlled by these standard measures, additional measures may be employed such as the use of a tackifier (if approved) to stabilize soil exposures or by covering exposed soil and stockpiles with tarpaulins, plastic sheeting or geotextile fabric. Otherwise cease work immediately and contact the Project Manager or the Corporate Health & Safety Manager for assistance. It is not permissible for dust emissions to escape from the site at any time and perimeter dust monitoring may be required to insure public safety.

Dust Monitoring:

Respirable Aerosol Monitors (RAM) can be used to monitor total dust levels in work zones and/or at the site perimeter. These instruments do not give specific readings of contaminant concentration (e.g. metals, asbestos, etc.). Depending upon the contaminants present, it may be mandatory for all workers to upgrade to level C protection using a half-face air-purifying respirator with HEPA (P-100) filters if dust levels cannot be adequately controlled during any of the on-site tasks. The H&A Site Safety Officer (SSO) will determine PPE upgrades based upon visual determination as necessary and the OSHA PEL for each known or suspected contaminant. The OSHA PEL/STEL for Respirable Nuisance Dust is 5 mg/m^3 (8 hour TWA).

Action levels for fugitive dust at the site perimeter are based upon the daily PM_{10} dust standard of 0.15 mg/m^3 in the National Ambient Air Quality Standard for Inhalable Dust (NAAQS).

Personal dust monitoring using an industrial hygiene pump and a filter cassette may be conducted on each day of operations. In such cases samples are collected from workers with the greatest potential dust exposure and analyzed by an accredited laboratory for specific contaminants.

Specific Monitoring Requirements:

Monitoring requirements and frequency is indicated by task and location below.

Task Number:		Frequency		times per	

Enter description of monitoring requirements by task and location

Task Number:		Frequency		times per	

Enter description of monitoring requirements by task and location

Task Number:		Frequency		times per	

Enter description of monitoring requirements by task and location

TABLE 2
Last Revised September 2002

MONITORING METHOD, ACTION LEVELS AND PROTECTIVE MEASURES

INSTRUMENT	HAZARD	ACTION LEVEL	ACTION RESPONSE
Respirable Dust Monitor	Total Particulates	> 5 mg/m^3	Upgrade to Level C Protection
OVA, HNU[2], Photovac Microtip	Total Organic Vapors	Background	Level D Protection
		10 ppm > background or lowest OSHA permissible exposure limit, whichever is lower, or as modified for this task. Sustained for >5 minutes in the breathing zone.	Upgrade to Level C - site evacuation may be necessary for specific compounds
		50 ppm over background, unless lower values required due to respirator protection factors	Cease work; upgrade to Level B[3] may be required
Explosimeter[4] (LEL)	Flammable/Explosive Atmosphere	<10% Scale Reading	Proceed with work
		10-15% Scale Reading	Monitor with extreme caution
		>15% Scale Reading	Evacuate site
0xygen Meter[5]	Oxygen-Deficient Atmosphere	19.5% - 23.5% 0_2	Normal - Continue work
		< 19.5% 0_2	Evacuate site; oxygen deficient
		> 23.5% 0_2	Evacuate site; fire hazard
Radiation Meter[6]	Ionizing Radiation	0.1 Millirem/Hour	If > 0.1, radiation sources may be present[7]
		> 1 Millirem/Hour	Evacuate site; radiation hazard
Drager Tubes	Vapors/Gases	Species Dependent > 1 ppm vinyl chloride > 1 ppm benzene > 1 ppm 1,1-DCE	Consult Table 1 or other resources for concentration toxicity/detection data. Upgrade to Level C if concentration of compounds exceed thresholds shown at left; May need to cease work if other levels exceeded - site specific
Gas Chromatograph (GC)	Organic Vapors	3 ppm total OV > background or > lowest specific OSHA permissible exposure limit, whichever is lower	On-site monitoring or tedlar bag sample collection for off-site/laboratory analysis

Notes:
1. Monitor breathing zone.
2. Can also be used to monitor some inorganic species.
3. Positive pressure demand self contained breathing apparatus
4. Lower explosive limit (LEL) scale is 0-100%. LEL for most gasses is 15%.
5. Normal atmospheric oxygen concentration at sea level is 20%
6. Background gamma radiation is ~0.01-0.02 millirems/hour.
7. Contact H&A Health and Safety staff immediately.

Calibration and Use of Equipment:

Calibrate all monitoring equipment in accordance with manufacturers requirements, H&A calibration (OP) standards and site specific requirements (e.g., at the beginning and end of each work day). Calibration of equipment shall be documented in the field notes or Daily Field Report (DFR). Documentation should include:

- Date/time
- Zero reading before calibration
- Concentration of calibration gas
- Reading obtained with calibration gas before adjusting span\
- Final reading obtained with calibration gas after adjusting span

7. DECONTAMINATION AND DISPOSAL METHODS

Personal Hygiene Safeguards:

The following minimum personal hygiene safeguards shall be adhered to:

- No smoking or tobacco products on any Hazwoper project.
- No eating or drinking in the exclusion zone.
- It is required that personnel present on site wash hands before eating, smoking, taking medication, chewing gum/tobacco, using the restroom, or applying cosmetics and before leaving the site for the day.
- It is recommended that personnel present on site shower or bathe at home at the end of each day of working on the site.

Standard Personal Decontamination Procedures:

Outer gloves and boots should be decontaminated periodically as necessary and at the end of the day. Brush off solids with a hard brush and clean with soap and water or other appropriate cleaner whenever possible. Remove inner gloves carefully by turning them inside out during removal. Wash hands and forearms frequently. It is good practice to wear work-designated clothing while on-site which can be removed as soon as possible. Non-disposable overalls and outer work clothing should be bagged onsite prior to laundering. If gross contamination is encountered on-site contact the Project Manager and LHSC to discuss proper decontamination procedures. The steps required for decontamination will depend upon the degree and type of contamination but will generally follow the sequence below.

1. Remove and wipe clean hard hat
2. Rinse boots and gloves of gross contamination
3. Scrub boots and gloves clean
4. Rinse boots and gloves
5. Remove outer boots
6. Remove outer gloves
7. Remove Tyvek coverall
8. Remove respirator, wipe clean and store
9. Remove inner gloves

Location of Decontamination Station:

N/A

Disposal of PPE:

PPE that is not grossly contaminated can be bagged and disposed in regular trash receptacles. PPE that is grossly contaminated must be bagged (sealed) and field personnel should communicate with the Project Manager to determine proper disposal.

Tools & Equipment Decontamination:

All decontamination should be conducted at the site and not at the office or lab.

Check all equipment and materials needed for decontamination of tools and other equipment.

☐ Acetone	☐ Distilled water	☐ Poly sheeting
☐ Alconox soap	☐ Drums for water	☐ Steam cleaner
☐ Brushes	☐ Hexane	☐ Tap water
☐ Disposal bags	☐ Methanol	☐ Washtubs
☐ 5 gallon pails	☐ Other Paper towels	

Standard Equipment Decontamination Procedures:

Air monitoring instrumentation and delicate instruments that are difficult to decontaminate or sensitive to water should be protected from contamination during use through the use of plastic sheeting. To the extent possible, efforts should be taken to limit the degree of contamination to hand tools and sampling equipment during use. Proper PPE must be worn while performing decontamination, including the wearing of chemical safety goggles and gloves. Storage or transport of decontamination solvents in squirt bottles is not permitted as they may discharge their contents upon ambient temperature change or leak if overturned. Standard equipment decontamination procedures are as follows. Any additional requirements are listed under Specific Equipment Decontamination Procedures below.

Pretreatment of heavily contaminated equipment may be conducted as necessary:

1. Remove gross contamination using a brush or wiping with a paper towel
2. Soak in a solution of Alconox and water (if possible)
3. Wipe off excess contamination with a paper towel
4. Clean with hexane or acetone and allow to dry

Standard decontamination procedure:

1. Wash using a solution of Alconox and water
2. Rinse with potable water
3. Rinse with methanol
4. Rinse with distilled water

Specific Equipment Decontamination Procedures:

1. Enter description of decontamination step 1

2. Enter description of decontamination step 2

3. Enter description of decontamination step 3

4. Enter description of decontamination step 4

Enter description of additional decontamination steps here

Standard Disposal Methods for Contaminated Materials:

Excess sample solids, decontamination materials, rags, brushes, poly sheeting, etc. that are determined to be free of contamination through field screening can usually be disposed into client-approved, on-site trash receptacles. Uncontaminated wash water may be discarded onto the ground surface away from surface water bodies in areas where infiltration can occur. Contaminated materials must be segregated into liquids or solids and drummed separately for off site disposal. Any additional requirements are listed under Specific Disposal Methods for Contaminated Materials below.

Specific Disposal Methods for Contaminated Materials:

Enter description of specific disposal requirements for contaminated materials

Disposal Methods for Contaminated Soils:

Contaminated soil cuttings and spoils must be drummed for disposal off-site unless otherwise specifically directed. Soil cuttings and spoils determined to be free of contamination through field screening can usually be returned to the boreholes or excavations from which they came. Any additional requirements are listed under Specific Disposal Methods for Contaminated Soils below.

Specific Disposal Methods for Contaminated Soils:

Enter description of specific disposal requirements for contaminated soils

Contaminated Soil Sent to Geotechnical Lab:

Assignments that include geotechnical lab testing on contaminated samples must be accompanied with written data that will provide information on the type and extent of contamination. Project Managers must communicate any anticipated or known chemical hazards to the lab when assigning geotechnical tests. Preferably, a copy of this HASP should be forwarded to the laboratory for their review. If the contamination is not known, the PM must contact the laboratory and discuss the source of the sample to help identify any potential hazards that may be associated with the sample.

8. CONTINGENCY PLANNING

How H&A responds to an emergency depends on whether we are at an active facility or another other location. Many active facilities have very stringent requirements for the mitigation of emergencies. Therefore, the PM is responsible for identifying any specific requirements from the client contact.

As a rule of thumb, the following are H&A's basic responses to handling Emergencies. Typically, H&A does not mitigate emergencies. When Clients request or require specific functions such as First Aid/CPR trained personnel on site, we typically conform. Before any Project Manager or LHSC agrees to something more stringent, many issues should be considered such as training, safety, feasibility of an adequate response, insurance requirements, and much more.

Fire:

- Major Fires - Major fires will be mitigated by the local fire departments or by client's on-site fire/emergency response departments.
- Incipient Stage Fires -Incipient stage fires will be extinguished by on-site personnel using fire extinguishers. Only those who have received annual training may use an extinguisher.

Medical:

All H&A employee injuries and illnesses will be reported to the PM and to HP at hpinjuryreporting@haleyaldrich.com and documented using the Incident Reporting Form. This form is available on HANK.

- First Aid - First aid will be addressed using the on-site first aid kit. H&A employees are not required or expected to administer first aid/CPR to any H&A, Contractor, or Civilian personnel at any time and it is H&A's position that those who do are doing it on their behalf and not as a function of their job.
- Trauma - Based upon the nature of the injury, the injured party may be transported to the nearest hospital or emergency clinic by on-site personnel or by ambulance. First response to a trauma incident is to call 911 or facility security. H&A staff members are expected to assist in ancillary roles only such as directing ambulances to the scene. It is the discretion of the staff member on site whether an ambulance should be procured in remote locations where ambulance services will not be effective.

Hazardous Materials Spill:

- Small incidental spills (e.g. pint of motor oil) caused by H&A employees and/or by the contractor will be mitigated by the H&A staff member and/or the contractor.
- Large spills (e.g. large leak from heavy equipment fuel tank). The contractor is responsible for cleanup. In the event that it posses a serious human or environmental threat, the local Fire Department and/or client emergency response department will be contacted. Once emergency has been mitigated typically clean up will be provided by a vendor.

Rescue:

H&A employees will not enter any confined spaces for rescue purposes.

Weather Related Emergencies:

H&A employees and their subcontractors should be aware of potential health effects and/or physical hazards of working during inclement weather. If applicable, safeguards against the effects and hazards of heat stress, cold stress, frostbite, thunderstorms, and lightning, etc., should be included with the section pertaining to physical hazards in this HASP.

Evacuation Alarms:

Evacuation alarms and/or emergency information will be communicated among personnel on site through verbal communication. If communication will be by other means, describe:

Enter alternate means

Emergency Services:

Emergency services will be summoned via on-site or cellular phone. If contact will be by other means, describe:

Enter alternate means

Emergency Evacuation Plan:

The site evacuation plan is as follows:

1. Establish a designated meeting area to conduct a head count in the event of an emergency evacuation.
2. If the work area is not near an emergency exit, exit via the closest route and meet at the designated meeting area.
3. Notify emergency response personnel (fire, police and ambulance) of the number of missing or unaccounted for employees and their suspected location.
4. Administer first aid will in the meeting area as necessary.

Under no circumstances should any personnel re-enter the site area without the approval of the corporate H&S manager, the H&S coordinator, and the fire department official in charge.

9. HEALTH & SAFETY PLAN ACKNOWEDGMENT FORM

Note: Only H&A employees sign this page.

I hereby acknowledge receipt and briefing on this Health & Safety Plan prior to the start of on-site work and declare that I understand and agree to follow the provisions and procedures set forth herein while working on this site.

PRINTED NAME	SIGNATURE	DATE

10. PRE-JOB SAFETY CHECKLIST

The following checklist is designed to help Project Managers verify that all Health & Safety requirements are satisfied for projects involving site work and to aid in the preparation of the site-specific HASP.

Please initial and date the appropriate box once each requirement has been satisfied prior to commencement of site work.

#	Project H&S Requirements	Approval by PM or LHSC (initial each box or place NA)	Date Approved
1	Project site history has been researched and summarized, current site conditions have been determined and documentation of previous investigations, risk analyses and chemical data has been assembled and summarized.		
2	Project work scope has been outlined and potential chemical and physical hazards associated with work tasks have been identified.		
3	Task Safety Analysis has been performed and attached to the HASP.		
4	H&A personnel to be involved with the project have been identified and are current with medical surveillance, OSHA 40 hour and 8 hour refresher training. Hazwoper site supervisor requirements are satisfied.		
5	Additional training requirements have been met: e.g. nuclear density gauge, DOT, Confined Space Entry, Competent Person Training for Excavation, OSHA 10 hour certification, Railway Safety Training, etc.		
6	H&A personnel that may be required to wear a respirator are medically qualified and have current certification of fit testing.		
7	Client's additional H&S requirements have been met: e.g. facility safety orientations, safety documentation, meetings, special PPE requirements		
8	H&A subcontractors have met H&A's minimum requirements including: current OSHA 40 hour training, medical surveillance, written HASP, insurance, SDSs.		
9	SDSs are on site and available for chemicals on site.		
10	Safety equipment is available: e.g. flashlight, telephone, ladders, traffic cones, barricade tape, fire extinguisher, first aid kit, PPE, respiratory protection, air and dust monitoring instrumentation (calibrated), personal flotation device (PFD), 90' life line with ring, decontamination equipment, etc.		
11	HASP and supporting documentation is complete and signed by all members.		

APPENDIX A
HASP Amendment Form

This Appendix is to be used whenever there is an immediate change in the project scope that would require an amendment to the HASP. For project scope changes associated with "add-on" tasks, the changes must be made in the body of the HASP. Before changes can be made, a review of the potential hazards must be initiated by the H&A Project Manager.

Amendment No.	
Site Name:	
Work Assignment No.:	
Date:	
Type of Amendment:	
Reason for Amendment:	
Alternate Safeguard Procedures:	
Required Changes in PPE:	

Project Manager Signature: _____ Date: _____

Local Health and Safety Coordinator: _____ Date: _____

This original form must remain on site with the original HASP. If additional HASPs are in the field, it is the Project Manager's responsibility to forward a signed copy of this amendment to those who have copies.

APPENDIX B
Issuance and Compliance
Site Safety Officer Role and Responsibilities
Training Requirements

This Health & Safety Plan (HASP) has been prepared in accordance with the requirements of Title 29 the Code of Federal Regulations (CFR) Section 1910.120/1926.65 to provide guidance for the protection of onsite personnel from physical harm and chemical exposure while working at the subject site.

The specific requirements of this HASP include precautions for hazards that exist during this project and may be revised as new information is received or as site conditions change.

- This HASP must be signed by all Haley & Aldrich (H&A) staff members who will work on the project, including H&A visitors. By signing the Health and Safety Plan Acknowledgement Form personnel are acknowledging that they are aware of the specific hazards of the site and agree to follow the provisions and procedures required to safeguard themselves and others from those hazards.
- This HASP or a current signed copy must be retained at the site at all times when H&A staff members are present.
- Deviations from this HASP are not permitted without prior approval from the above signed. Unauthorized deviations may constitute a violation of H&A company procedures/policies and may result in disciplinary action.
- Revisions to this HASP must be outlined within the contents of the HASP. If immediate or minor changes are necessary, the LHSC and H&A Project Manager may use Appendix A (HASP Amendment Form), located in the back of this HASP. Any revision to the HASP requires personnel to be informed of the changes and that they understand the requirements of the change.
- This HASP is not for H&A Subcontractor use. Each subcontractor engaged is responsible for all matters relating to the health and safety of their personnel and the safe operation of their equipment. This HASP will be made available as a reference so that subcontractors are informed of the potential hazards associated with the site to the extent we are aware. Subcontractors must develop their own HASP which must be, at a minimum, at least as protective as this HASP.
- This Site Specific HASP provides only site-specific descriptions and work procedures. General safety and health compliance programs in support of this HASP (e.g., injury reporting, medical surveillance, personal protective equipment (PPE) selection, etc. are described in detail in the H&A Corporate Health and Safety Program Manual and within Standard Operating Procedures (OPs). Both the manual and OPs can be located on the Company Intranet. When appropriate, users of this HASP should always refer to these resources and incorporate to the extent possible. The manual and OPs are available to clients and regulators per request.

Site Safety Officer:

The site safety officer (SSO) is defined as the individual responsible to the employer with the authority and knowledge necessary to implement the HASP and verify compliance with applicable health and safety requirements.

The H&A Project Manager may designate any person as the site safety officer (SSO) and determines the order of authority on site. Usually the highest ranking person on site is the SSO. A site safety officer must be on site at all times. When none of the designated SSOs are present on site, the senior person for H&A on site will default to the SSO. This project has identified the following hierarchy for SSO.

1. Enter name of site safety officer here

2. Enter name of site safety officer here

Site Safety Officer Roles and Responsibilities:

The SSO is responsible for field implementation of this HASP and enforcement of safety rules and regulations. SSO functions include:

- Act as H&A's liaison for health and safety issues with client, staff, subcontractors, and agencies.
- Verify that utility clearance has been performed by H&A subcontractors.
- Oversee day-to-day implementation of the HASP by H&A employees on site.
- Interact with subcontractor project personnel on health and safety matters.
- Verify use of required PPE as outlined in the HASP.
- Inspect and maintain H&A safety equipment, including calibration of air monitoring instrumentation used by H&A.
- Perform changes to HASP and document in Appendix A of the HASP as needed and notify appropriate persons of changes.
- Investigate and report on-site accidents and incidents involving H&A and its subcontractors.
- Verify that site personnel are familiar with site safety requirements (e.g., the hospital route and emergency contact numbers).
- Report accidents, injuries, and near misses to the H&A PM and Local Health and Safety Coordinator (LHSC) as needed.

The SSO will conduct initial site safety orientations with site personnel (including subcontractors) and conduct toolbox and safety meetings thereafter with H&A employees and H&A subcontractors at regular intervals and in accordance with H&A policy and contractual obligations. The SSO will track the attendance of site personnel at H&A orientations, toolbox talks, and safety meetings. Subcontractors will document training and provide training rosters to the H&A SSO.

The SSO will report accidents such as injury, overexposure, or property damage to the Local Health and Safety Coordinator, to the Project Manager, and to the safety managers of other on-site consultants and contractors. The SSO will consult with the safety managers of other on-site consultants and subcontractors on specific health and safety issues arising over the course of the project, as needed.

Health and Safety Training Requirements:

Personnel will not be permitted to supervise or participate in field activities until they have been trained to a level required by their job function and responsibility. H&A staff members, contractors, subcontractors, and consultants who have the potential to be exposed to contaminated materials or physical hazards must complete the training described in the following sections.

The H&A Project Manager/LHSC will be responsible for maintaining and providing to the client/site manager documentation of H&A staff members' compliance with required training as requested. Records shall be maintained per OSHA requirements.

40-Hour Health and Safety Training

The 40-Hour Health and Safety Training course provides instruction on the nature of hazardous waste work, protective measures, proper use of personal protective equipment, recognition of signs and symptoms which might indicate exposure to hazardous substances, and decontamination procedures. It is required for all personnel working on-site, such as equipment operators, general laborers, and supervisors, who may be potentially exposed to hazardous substances, health hazards, or safety hazards consistent with 29 CFR 1910.120.

8-hour Annual Refresher Training

Personnel who complete the 40-hour health and safety training are subsequently required to attend an annual 8-hour refresher course to remain current in their training. When required, site personnel must be able to show proof of completion (i.e., certification) at an 8-hr refresher training course within the past 12 months.

8-Hour Supervisor Training

On-site managers and supervisors directly responsible for, or who supervise staff members engaged in hazardous waste operations, should have eight additional hours of Supervisor training in accordance with 29 CFR 1910.120. Supervisor Training includes, but is not limited to, accident reporting/investigation, regulatory compliance, work practice observations, auditing, and emergency response procedures.

Additional Training for Specific Projects

H&A personnel will ensure their personnel have received additional training on specific instrumentation, equipment, confined space entry, construction hazards, etc., as necessary to perform their duties. This specialized training will be provided to personnel before engaging in the specific work activities including:

- Client specific training or orientation
- Competent person excavations
- Confined space entry (entrant, supervisor, and attendant)
- Heavy equipment including aerial lifts and forklifts
- First aid/ CPR
- Use of fall protection
- Use of nuclear density gauges
- Asbestos awareness