JASCO/BIX MSDS

MATERIAL SAFETY DATA SHEET

PART I *What is the material and what do I need to know in an emergency?*

1. PRODUCT IDENTIFICATION

TRADE NAME (AS LABELED): **JASCO/BIX PREMIUM AEROSOL PAINT & EPOXY REMOVER**
PRODUCT CODE: **0206-1**
PRODUCT USE: Paint removal.
SUPPLIER/MANUFACTURER'S NAME: **HOMAX PRODUCTS, Inc.**
ADDRESS: 200 Westerly Rd.
Bellingham, WA 98226
CHEMTREC EMERGENCY NO.: 1-800-424-9300 (United States)
1-703-527-3887 (International Collect)
BUSINESS PHONE: 1-800-729-9029
DATE OF PREPARATION: March 10, 2004

This product is sold to consumers for household use in containers of relatively small volume (i.e. 5 gallon or less in size). This MSDS has been developed to address safety concerns affecting those individuals working in warehouses and other places where large numbers of these containers are stored, as well as those affecting potential users of this product in industrial /occupational settings. All pertinent health, safety and environmental information have been presented in this document, per the requirements of the US Federal OSHA Hazard Communication Standard (29 CFR 1910.1200) and Canadian WHMIS.

2. COMPOSITION and INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	% w/w	EXPOSURE LIMITS IN AIR						
			ACGIH-TLV		OSHA-PEL		NIOSH-REL		
			TWA	STEL	STEL	STEL	STEL	STEL	IDLH
			mg/m^3	mg/m^3	mg/m^3	mg/m^3	mg/m^3	mg/m^3	ppm
Methylene chloride	75-09-2	40-70	174	NE	87	433.75	LFC		2300
Propane/Isobutane	68476-86-8	10-30	4508	NE	1800	NE	1800	NE	2100
Methyl alcohol	67-56-1	7-13	262; skin	328; skin	260	NE	260; skin	325; skin	6000
Ammonium hydroxide	1336-21-6	1-5	NE	NE	NE	NE	NE	NE	NE
Toluene	108-88-3	0.5-1.5	188, skin	NE	753	1130	375	560	500
Water and ingredients present in concentrations of less than 1%(or less than 0.1% if carcinogens)		Balance	The ingredients in the balance of this product do not contribute significant hazards beyond those described in this document. All pertinent health, safety and environmental information have been presented, per the requirements of the US Federal OSHA Hazard Communication Standard (29 CFR 1910.1200) and Canadian WHMIS.						

LFC = Lowest feasible concentration, NE = Not Established. See Section 16 for Definitions of Terms Used.

NOTE (1): ALL WHMIS required information is included in appropriate sections based on the ANSI Z400.1-1998 format. This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW:

PHYISCAL DESCRIPTION: This product is an aerosol paint and epoxy remover.

HEALTH HAZARD: This product is harmful if swallowed, inhaled, or absorbed through the skin; it may be fatal or cause blindness if swallowed. This product causes irritation to the eyes or skin. If vapors, mists or particulates of this product are inhaled, irritation of the nose or throat could occur. Use only with adequate ventilation. This product contains Methylene chloride which is a confirmed carcinogen.

FIRE HAZARD: During application fumes or vapors can ignite and burn readily. This product is not flammable after application.

REACTIVITY HAZARD: The product is stable under ordinary conditions. The product is not compatible with strong oxidizers, strong reducing agents, strong bases and strong acids

ENVIRONMENTAL HAZARD: This product does not normally present a significant hazard to aquatic or terrestrial life.

SYMPTOMS OF OVEREXPOSURE BY ROUTE OF ENTRY: The most significant routes of occupational overexposure are inhalation and contact with skin and eyes. The symptoms of overexposure to this product are as follows:

INHALATION: Vapors, mists or sprays of this solution may cause irritation to the respiratory tract. This product can cause central nervous system depression when inhaled, which can result in mental confusion, light-headedness, fatigue, nausea, vomiting, and headache. Methylene chloride, a component of this product, can cause adverse effects on the cardiovascular system. Though not anticipated under normal circumstances of use, exposure to high levels of this product s vapors can cause unconsciousness or death.

SKIN ABSORPTION: Methyl Alcohol, a component of this product, can potentially be absorbed through the skin.

CONTACT WITH SKIN or EYES: Prolonged or repeated skin contact can cause burns and dermatitis. This product can cause eye irritation; contact can lead to pain, inflammation, and temporary eye damage.

INGESTION: Though an unlikely route of occupational exposure, if this product is swallowed, gastric discomfort could occur. Symptoms of ingestion exposure include irritation of the throat, esophagus, and other tissues of the digestive system. If vomiting results in aspiration, chemical pneumonia could follow. Ingestion of this product may cause blindness. Severe ingestion overexposures can be fatal.

INJECTION: Accidental injection of this product can cause burning, reddening, and swelling in addition to the wound.

Hazardous Materials Identification System (HMIS)

Health	**3 ***
Flammability	**4**
Physical Hazard	**0**
Protective Equipment	**C**

See Section 16 for Definition of Ratings

HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in Lay Terms.

ACUTE: Depending on the duration of contact, overexposures can irritate the eyes, skin, mucous membranes or other exposed tissue. Inhalation overexposure can result in central nervous system depression, dizziness, fatigue, vomiting, and headaches. These symptoms of exposure generally alleviated when overexposure ends. Overexposures by all routes of entry can cause blindness. Severe inhalation and ingestion overexposures can be fatal.

CHRONIC: Prolonged or repeated skin overexposure to this product can cause dermatitis. Methylene Chloride, a component of this product, may cause cancer. Long-term exposure to Methylene Chloride may lead to neurological effects such as memory loss, speech and balance problems.

TARGET ORGANS: Acute: Eyes, skin, central nervous system, respiratory system, and the optic nerve. Chronic: Blood, liver, and cardiovascular system.

PART II *What should I do if a hazardous situation occurs?*

4. FIRST-AID MEASURES

Victims of chemical exposure must be taken for medical attention if any adverse effects occur. Take a copy of label and MSDS to physician or health professional with victim.

SKIN EXPOSURE: If this product contaminates the skin, immediately begin decontamination with running water. Remove exposed or contaminated clothing, taking care not to contaminate eyes. Victim must seek immediate medical attention if any adverse exposure symptoms develop.

EYE EXPOSURE: If this product enters the eyes, open victim's eyes while under gently running water. Use sufficient force to open eyelids. Have victim "roll" eyes. Minimum flushing is for 15 minutes. Victim must seek medical attention.

INHALATION: If vapors, mists, or sprays of this product are inhaled, remove victim to fresh air. Victim must seek immediate medical attention if any adverse exposure symptoms develop. If necessary, use artificial respiration to support vital functions. Remove or cover gross contamination to avoid exposure to rescuers.

INGESTION: If this product is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. DO NOT INDUCE VOMITING, unless directed by medical personnel. Have victim rinse mouth with water, if conscious. Never induce vomiting or give a diluent (e.g., water) to someone who is unconscious, having convulsions, or unable to swallow. If contaminated individual is convulsing, maintain an open airway and obtain immediate medical attention.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Persons with pre-existing skin disorders, eye problems, impaired liver, kidney, respiratory or lymphoid system function can be more susceptible to health effects associated with overexposures to this product.

RECOMMENDATIONS TO PHYSICIANS: Treat symptoms and eliminate overexposure. Provide oxygen, if necessary. Pulmonary function tests, chest X-rays, and nervous system evaluations can prove useful. Consultation with an ophthalmologist is recommended if eye exposure leads to tissue damage.

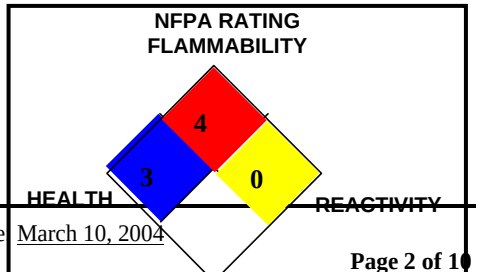
5. FIRE-FIGHTING MEASURES

Information below based on the physical properties of Isobutane and Propane.

FLASH POINT: -205^{0}F (-131.5^{0}C)

AUTOIGNITION TEMPERATURE: 851^{0}F (455^{0}C)

FLAMMABLE LIMITS (in air by volume, %):



Lower: 1.95 % Upper: 8.95 %

FIRE EXTINGUISHING MATERIALS: Use extinguishing material suitable to the surrounding fire.

Water Spray: OK Carbon Dioxide: OK Foam: OK
Dry Chemical: OK Halon: OK Other: Any ABC Class.

UNUSUAL FIRE AND EXPLOSION HAZARDS: When involved in a fire, this material may decompose generating dusts, irritating fumes and toxic gases (e.g., Carbon monoxide, Carbon dioxide, Hydrochloric acid gas, and Phosgene).

Explosion Sensitivity to Mechanical Impact: Not sensitive under normal conditions.
Explosion Sensitivity to Static Discharge: Not sensitive under normal conditions.

SPECIAL FIRE-FIGHTING PROCEDURES: Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Move containers from fire area if it can be done without risk to personnel. Exercise caution; contaminated floors and surfaces can be slippery. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE: Trained personnel using pre-planned procedures should respond to uncontrolled releases. Proper protective equipment should be used. In case of a spill, clear the affected area and protect people. Fire extinguishing media should be readily accessible to responders.

RESPONSE TO INCIDENTAL RELEASES: Personnel who have received basic chemical safety training can generally handle small-scale releases, such as 1 container of this product. Respond to incidental chemical releases by wearing gloves, goggles, and appropriate body protection.

RESPONSE TO NON-INCIDENTAL RELEASES: Respond to non-incidental chemical releases of this product, such as the simultaneous puncturing of several containers, by clearing the impacted area and contacting appropriate emergency personnel. Clean up should only be done by qualified personnel. Responders should wear the level of protection appropriate to the type of chemical released, the volume of the material spilled, and the location where the incident has occurred. Minimum Personal Protective Equipment should be Level B: triple-gloves, chemical resistant apron, boots, and splash goggles and Self-Contained Breathing Apparatus. Level B should also be used when oxygen levels are below 19.5% or are unknown.

RESPONSE EQUIPMENT AND PROCEDURES: Spark-proof tools and equipment should be utilized. Absorb spilled liquid with polypads or other suitable absorbent materials. Decontaminate the area thoroughly. Prevent spill rinsate from contamination of storm drains, sewers, soil or groundwater. Place all spill residues in a suitable container and seal. Dispose of in accordance with applicable U.S. Federal, State, or local procedures or appropriate standards of Canada (see Section 13, Disposal Considerations).

PART III *How can I prevent hazardous situations from occurring?*

7. HANDLING and STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after using this product. Do not eat or drink while using this material. Avoid generating mists and sprays of this product. Remove contaminated clothing immediately.

STORAGE AND HANDLING PRACTICES: All employees who handle this material should be trained to use it safely. Open containers carefully on a stable surface. Empty containers may contain residual liquid; therefore, empty containers should be handled with care. Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Store away from incompatible materials (see Section 10, Stability and Reactivity). Keep container tightly closed when not in use. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely if necessary. Collect all rinsates and dispose of according to applicable U.S. Federal, State, or local procedures or appropriate Canadian standards.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided in Section 2 (Composition and Information on Ingredients). Ensure eyewash/safety shower stations are available near areas where this product is used.

RESPIRATORY PROTECTION: None needed under normal conditions of use. Use NIOSH approved respirators if ventilation is inadequate to control dusts, mists, fumes or vapors. Maintain airborne contaminate concentrations below guidelines listed in Section 2(Composition and Information on Ingredients). Oxygen levels below 19.5% are considered IDLH by OSHA. In such atmospheres use of a full-face-piece pressure/demand SCBA or a full face-piece, supplied air

respirator with auxiliary self-contained air supply is required under OSHA s Respiratory Protection Standard (29 CFR 1910.134). The following NIOSH Respiratory Protection Guidelines are applicable to Methylene Chloride (the main component of this product) and are provided for additional information: **At Any Detectable Concentration** (due to potential its status as a potential carcinogen): Positive pressure, full-face-piece Self Contained Breathing Apparatus; or positive pressure, full-face-piece supplied-air respirator with an auxiliary positive-pressure Self Contained Breathing Apparatus. **Escape**: Gas-mask with organic vapor canister; or escape-type Self Contained Breathing Apparatus.

EYE PROTECTION: For consumer use, wearing eye protection (such as splash goggles) is advisable. However, for specific industrial applications, enhanced eye protection may be necessary. Use approved safety goggles or safety glasses, as described in OSHA 29 CFR 1910.133. If necessary, refer to U.S. OSHA 29 CFR 1910.133, or appropriate Canadian standards.

HAND PROTECTION: For consumer use, wearing protective gloves is recommended. For specific industrial applications, wear chemical impervious gloves (e.g., Neoprene, nitrile). If necessary, refer to U.S. OSHA 29 CFR 1910.138 or the appropriate standards of Canada.

BODY PROTECTION: For consumer use, no specific body protection is normally needed. For specific industrial applications, body protection is not normally needed. Use body protection appropriate for task (e.g., Tyvek suit, rubber apron). If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee s feet may be exposed to electrical hazards, use foot protection, as described in U.S. OSHA 29 CFR 1910.136.

HMIS PERSONAL PROTECTIVE EQUIPMENT RATING: Industrial Use situations: C; Safety Glasses, Gloves and Body Protection.

9. PHYSICAL and CHEMICAL PROPERTIES

RELATIVE VAPOR DENSITY (air = 1): Not determined.
EVAPORATION RATE (BuAc =1): Not determined.
SPECIFIC GRAVITY: 1.18
MELTING/FREEZING POINT: Not determined.
SOLUBILITY IN WATER: Negligible
BOILING POINT: Not determined.
VAPOR PRESSURE, PSIG @ 20°C: Not determined.
pH: Not determined.
ODOR THRESHOLD: Not determined.
V.O.C., less water and exempt: 129 g/L

COEFFICIENT OF OIL/WATER DISTRIBUTION (PARTITION COEFFICIENT): Not determined.

APPEARANCE, ODOR AND COLOR: This product is an amber colored aerosol with an ether-like odor.

HOW TO DETECT THIS SUBSTANCE (warning properties): The appearance and odor of this product may act as warning properties in the event of an accidental release.

10. STABILITY and REACTIVITY

STABILITY: Stable under normal circumstances of use and handling. Methylene chloride, a component of this product, slowly decomposes to form Hydrogen chloride upon prolonged contact with water.

DECOMPOSITION PRODUCTS: Thermal decomposition of this product may generate irritating fumes, and toxic gases (e.g., Carbon monoxide and Carbon dioxide).

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: This product is not compatible with strong acids, oxidizers and bases. Components of this product may attack some forms of plastic, rubber, and coatings.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Avoid contact with incompatible chemicals.

PART IV *Is there any other useful information about this material?*

11. TOXICOLOGICAL INFORMATION

TOXICITY DATA: The following toxicology information is available for components greater than 1% in concentration.

The following data are available for Methyl alcohol:

Skin-Rabbit, adult 20 mg/24H Moderate irritation effects
Eye effects-Rabbit, adult 100 mg/24H Moderate irritation effects
DNA Inhibition-Human: lymphocyte 300 mmol/L
Microsomal Mutageniticity Assay-Mouse: lymphocyte 7900 mg/L
Oral-Rat TDLo:7500 mg/kg (17-19D preg):Reproductive effects
Inhalation-Rat TCLo:10,000 ppm/7H (7-15D preg):Teratogenic effects
Oral-Man LDLo:6422 mg/kg: Central nervous system effects, Pulmonary system effects, Gastrointestinal tract effects
Oral-Man TDLo:3429 mg/kg: Eye effects
Oral-Human LDLo:428 mg/kg: Central nervous system effects, Pulmonary system effects
Oral-Human LDLo:143 mg/kg: Eye effects, Pulmonary system effects, Gastrointestinal tract effects
Oral-Woman TDLo:4 g/kg: Eye effects, Pulmonary system effects, Gastrointestinal tract effects
Inhalation-Human TCLo:86,000 mg/m3:Eye effects, Pulmonary system effects
Inhalation-Human TCLo:300 ppm:Eye effects, Central nervous system effects, Pulmonary system effects
Oral-Woman TDLo:4 g/kg

Oral-Rat LD_{50}:5628 mg/kg
Inhalation-Rat LC_{50}:64,000 ppm/4H
Intraperitoneal-Rat LD_{50}:7529 mg/kg
Intravenous-Rat LD_{50}:2131 mg/kg
Oral-Mouse LD_{50}:7300 mg/kg

The following data are available for Methyl alcohol (continued):

Intraperitoneal-Mouse LD_{50}:10,765 mg/kg
Subcutaneous-Mouse LD_{50}:9800 mg/kg
Intravenous-Mouse LD_{50}:4710 mg/kg
Oral-Monkey LDLo:7000 mg/kg
Inhalation-Monkey LCLo:1000 ppm
Skin-Monkey LDLo:393 mg/kg

The following data are available for Methylene Chloride:

Eye effects-Rabbit, adult 162 mg Moderate irritation effects
Eye effects-Rabbit, adult 10 mg Mild irritation effects
Eye effects-Rabbit, adult 17,500 mg/m3/10M
DNA Inhibition System-Human:fibroblast 5000 ppm/1H-C
Cytogenetic Analysis System-Hamster:ovary 5 g/L
DNA Inhibition System-Hamster:lung 5000 ppm/1H-C
Sister Chromatid Exchange System-Hamster:lung 5000 ppm/1H-C
Inhalation-Rat TCLo:4500 ppm/24H (1-17D preg):Reproductive effects
Inhalation-Mouse TCLo:1250 ppm/7H (6-15D preg):Teratogenic effects
Inhalation-Rat TCLo:3500 ppm/6H/2Y-I:Carcinogenic effects
Inhalation-Mouse TCLo:2000 ppm/5H/2Y-C:Carcinogenic effects
Oral-Human LDLo:357 mg/kg:Central nervous system effects
Inhalation-Rat TCLo:500 ppm/6H/2Y:Equivocal tumorigenic agent
Oral-Human LDLo:357 mg/kg:Peripheral nervous system effects,Central nervous system effects
Inhalation-Human TCLo:500 ppm/1Y-I:Central nervous system effects,Cardiovascular effects
Inhalation-Human TCLo:500 ppm/8H:Central nervous system effects
Oral-Rat LD_{50}:1600 mg/kg
Inhalation-Rat LC_{50}:88,000 mg/m3/30M
Inhalation-Mouse LC_{50}:14,400 ppm/7H
Intraperitoneal-Mouse LD_{50}:437 mg/kg
Subcutaneous-Mouse LD_{50}:6460 mg/kg
Oral-Dog, adult LDLo:3 g/kg
Inhalation-Dog, adult LCLo:14,108 ppm/7H
Intraperitoneal-Dog, adult LDLo:950 mg/kg
Subcutaneous-Dog, adult LDLo:2700 mg/kg
Intravenous-Dog, adult LDLo:200 mg/kg
Inhalation-Cat, adult LCLo:43,400 mg/m3/4.5H
Oral-rab LDLo:1900 mg/kg
Inhalation-Rabbit, adult LCLo:10,000 ppm/7H
Subcutaneous-Rabbit, adult LDLo:2700 mg/kg
Inhalation-Guinea Pig, adult LCLo:5000 ppm/2H

The following data are available for Ammonium hydroxide:

Eye effects-Rabbit, adult 1 mg/30S RNS Severe irritation effects
Eye effects-Rabbit, adult 750 mg Severe irritation effects
Mutation in Microorganisms-Salmonella typhimurium 10 mL/plate
Mutation in Microorganisms-Escherichia coli 10 mL/disc
Oral-Human LDLo:43 mg/kg
Inhalation-Human LCLo:5000 ppm
Inhalation-Human TCLo:700 ppm:Eye effects
Inhalation-Human TCLo:408 ppm:Irritant effects
Oral-Rat LD_{50}:350 mg/kg
Oral-Cat, adult LDLo:750 mg/kg
Intravenous-Rabbit, adult LDLo:10 mg/kg

The following data are available for: Toluene

Acute oral toxicity (LD50): 636 mg/kg [Rat].
Acute toxicity of the vapor (LC50): 49 mg/m3 4 hour(s) [Rat].
Eye effects-Human 300 ppm
Skin-Rabbit, adult 435 mg Mild irritation effects
Skin-Rabbit, adult 500 Moderate irritation effects

Eye effects-Rabbit, adult 870 mg Mild irritation effects
Eye effects-Rabbit, adult 2 mg/24H Severe irritation effects
Eye effects-Rabbit, adult 100 mg/30S rns Mild irritation effects
oms-grasshopper-Inhalation 562 mg/L
Cytogenetic Analysis System-Rat-Subcutaneous 12 g/kg/12D-I
Inhalation-Mouse TCLo:400 ppm/7H (female 7 16D post):Reproductive effects
Oral-Mouse TDLo:9 g/kg (female 6 15D post):Teratogenic effects
Oral-Human LDLo:50 mg/kg
Inhalation-Human TCLo:200 ppm: BRN, Central nervous system effects, Blood effects
Inhalation-Man TCLo:100 ppm: Central nervous system effects
Oral-Rat LD_{50}:5000 mg/kg
Inhalation-Rat LCLo:4000 ppm/4H
Intraperitoneal-Rat LD_{50}:1332 mg/kg
Intravenous-Rat LD_{50}:1960 mg/kg
Unreported-Rat LD_{50}:6900 mg/kg
Inhalation-Mouse LC_{50}:400 ppm/24H
Intraperitoneal-Mouse LD_{50}:59 mg/kg
Subcutaneous-Mouse LD_{50}:2250 mg/kg
Unreported-Mouse LD_{50}:2 g/kg
Intraperitoneal-Mouse LD_{50}:640 mg/kg
Inhalation-Rabbit, adult LCLo:55,000 ppm/40M
Skin-Rabbit, adult LD_{50}:12,124 mg/kg

The following data are available for Isobutane:

LC_{50} (rat, inhalation): 57pph/15 minutes
LC_{LO} (mouse, inhalation): 1041 g/m^3/2 hours

SUSPECTED CANCER AGENT: The following table summarizes the carcinogenicity listing for the components of this product. NO indicates that the substance is not considered to be, or suspected to be, a carcinogen by the listed agency.

CHEMICAL	IARC	NTP	NIOSH	OSHA	ACGIH	PROPOSITION 65
Methylene Chloride	2B	Anticipated	YES	YES	A3	Carcinogen
Methyl alcohol	NO	NO	NO	NO	NO	NO
Ammonium hydroxide	NO	NO	NO	NO	NO	NO
Toluene	3	NO	NO	NO	A4	Reproductive
Isobutane	NO	NO	NO	NO	NO	NO
Propane	NO	NO	NO	NO	NO	NO

Note: See section 16 for definition of ratings.

IRRITANCY OF PRODUCT: This product can be severely irritating to contaminated tissue. Prolonged exposure can lead to tissue damage.

SENSITIZATION TO THE PRODUCT: The components of this product are not reported to be sensitizers.

TOXICOLOGICAL SYNERGISTIC PRODUCTS: Methylene Chloride, the main component of this product, can be metabolized to carbon monoxide. Other exposures to carbon monoxide (e.g., smoking, exhaust fumes) can have synergistic effects.

REPRODUCTIVE TOXICITY INFORMATION: Listed below is information concerning the effects of this product and its components on the human reproductive system.

Mutagenicity: When used as directed, this product is not expected to produce mutagenic effects in humans. Methylene chloride, a component of this product, is classified as a mutagen.
Embryotoxicity: When used as directed, this product is not expected to produce embryotoxic effects in humans.
Teratogenicity: When used as directed, this product is not expected to produce teratogenic effects in humans. Methylene chloride, Toluene and Methanol, components of this product, have shown teratogenic effects in animal studies.

Reproductive Toxicity: When used as directed, this product is not expected to produce adverse reproductive effects in humans. Methylene chloride, Toluene and Methanol, components of this product, have shown reproductive toxicity in animal studies.

A mutagen is a chemical that causes permanent changes to genetic material (DNA) such that the changes will propagate through generational lines. An embryotoxin is a chemical that causes damage to a developing embryo (i.e. within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A teratogen is a chemical that causes damage to a developing fetus, but the damage does not propagate across generational lines. A reproductive toxin is any substance that interferes in any way with the reproductive process.

BIOLOGICAL EXPOSURES INDICES (BEIs): Methanol: in urine, end-of-shift 15 mg/L
Toluene: o-Cresol in urine, end of shift - 0.5 mg/L
Hippuric acid in urine, end of shift - 1.6 g/g creatine
Toluene in blood, prior to last shift of work week - 0.05 mg/L

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

ENVIRONMENTAL STABILITY: When released into the soil, this material may leach into the groundwater. When released into the soil, this product is expected to quickly evaporate. When released into the water, this product may biodegrade to a moderate extent. This product is not expected to significantly bioaccumulate. When released into the air, this material may be moderately degraded by reaction with photochemically produced hydroxy radicals. When released into the air, this product may be removed from the atmosphere to a moderate extent by wet deposition. The following information is pertinent to the components of this product: **Methylene Chloride**: Slowly decomposes to form hydrochloric acid upon prolonged contact with water. Measured log octanol/water partition coefficient is 1.25. Henry s Law Constant is estimated to be 3.69 X 10^{-3}. Potential for soil mobility is very high; soil organic carbon/waster coefficient is estimated to be 24. Methylene Chloride has a half-life in air of grater than 30 days. **Methyl alcohol:** When released into the water, this material has a half-life of 1-10 days; in the air, the half-like is 10-30 days. **Toluene:** When released into the air, this material is expected to have a half-life of less than 1 day. This material is not expected to significantly bioaccumulate. This material has a log octanol-water partition coefficient of less than 3.0. Bioconcentration factor = 13.2 (eels).

EFFECT OF MATERIAL ON PLANTS or ANIMALS: This product can be harmful to animal life if large volumes of it are released into the environment. Refer to Section 11, Toxicological Information , for specific animal data.

EFFECT OF CHEMICAL ON AQUATIC LIFE: This product can be harmful to contaminated aquatic life (especially if large volumes of it are released into an aquatic environment). The following ectotoxicity data is available for the components of this product.

Methylene Chloride:

LC_{50} in water flea (Daphnia magna) = 244 mg/L
LC_{50} in fathead minnow (Pimephales promelas) = 320 mg/L
LC_{50} in bluegill (Lepomis Macrocirus) = 224 mg/L
LC_{50} in mysid (Mysidopsis bahia) = 256 mg/L
LC_{50} in golden orfe (Leucicus idus) is 5225 mg/L
Maximum acceptable toxicant concentration in fathead minnow (Pimephales promelas) = 108 mg/L
Acute mobilization ec_{50} in water flea (Daphnia magna) = 480 mg/L

Methyl alcohol

Fathead minnow: 29.4 g/L (96 hr);
Fathead minnow: LC_{50}: 29400 mg/L (96 hr);
Goldfish LC_{50}: 250 ppm (11 hr);
Rainbow trout: LC_{50}: 8000 mg/L (48 hr) (48 hr) (pH 7.63, 25^0C);
Rainbow trout LC_{50}13-68 mg/L (96 hr);
Phytobacterium phosphoreum: EC_{50}: 51,000 - 320,000 mg/L (30 minutes)

Ammonium Hydroxide

Rainbow Trout LC_{50} 0.008mg/L, 24 hr
Fathead Minnow LC_{50} 8.2 mg/L, 96 hr
Bluegill/Sunfish LC_{50} 0.024-0.093 mg/L 48 hr
Water Flea (daphnia) EC_{50} 0.66 mg/L 48 hr, 22 C.

13. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Consumer Waste: Dispose of according to pertinent state and local household waste and requirements**. Industrial Use:** Waste disposal must be in accordance with appropriate U.S. Federal, State, and local regulations or with regulations of Canada. This product, if unaltered by the handling, may be disposed of by treatment at a permitted facility or as advised by your local waste regulatory authority.

EPA WASTE NUMBER: The specific RCRA codes depend on the exact nature of the discarded material.

14. TRANSPORTATION INFORMATION

THIS PRODUCT IS HAZARDOUS PER 49 CFR 172.101, THE U.S. DEPARTMENT OF TRANSPORTATION.

PROPER SHIPPING NAME: Aerosols
HAZARD CLASS NUMBER and DESCRIPTION: 2.1 (Flammable Gas)
UN IDENTIFICATION NUMBER: UN1950
DOT LABEL(S) REQUIRED: Flammable Gas
PACKING GROUP: Not applicable.
NORTH AMERICAN RESPONSE GUIDEBOOK NUMBER (2000): 126

MARINE POLLUTANT: No component is designated as a DOT Marine Pollutant.

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: The above-listed DOT basic description applies to this product under the regulations of Transport Canada.

15. REGULATORY INFORMATION

ADDITIONAL U.S. REGULATIONS:

EPA REPORTING REQUIREMENTS: The following reporting requirements are applicable to components of this product:

CHEMICAL	SECTION 302 (40 CFR 355, Appendix A)	SECTION 304 (40 CFR Table 302.4)	SECTION 313 (40 CFR 372.65)
Methylene Chloride	NO.	RQ = 1000 lbs	YES
Methyl alcohol	NO	RQ = 5000 lbs.	YES
Toluene	NO	RQ = 1000 lbs	YES
Ammonium hydroxide	NO	RQ = 1000 lbs.	YES
Isobutane	NO	NO	NO
Propane	NO	NO	NO

U.S. SARA SECTION 311/312 FOR PRODUCT: Acute health effects and chronic health effects.

U.S. TSCA INVENTORY STATUS: The components of this product are listed on the TSCA Inventory.

OTHER U.S. FEDERAL REGULATIONS: Not applicable.

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): Components of this product are found on the Proposition 65 Carcinogen List and the Adverse Reproductive Effects List. WARNING: This product contains a chemical known to the State of California to cause cancer or birth defects or other reproductive harm.

ANSI LABELING (Z129.1): Label Hazard Warning: HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH THE SKIN. EYE, SKIN AND RESPIRATORY TRACT IRRITANT. MAY BE FATAL OR CAUSE BLINDNESS IF SWALLOWED. WARNING CONTENTS UNDER PRESSURE. CONTAINER MAY EXPLODE IF HEATED.

Label Precautions: Do not breathe fumes, dusts, vapors or mist. Do not get in eyes or on skin or clothing. Cannot be made nonpoisonous. Do not swallow or take internally. Use only in a well-ventilated area. Use safety glasses and gloves. Keep away from heat and open flame.

ENVIRONMENTAL HAZARDS: Do not discharge effluent containing this product into streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA.

ADDITIONAL CANADIAN REGULATIONS:

CANADIAN DSL/NDSL INVENTORY STATUS: The components of this product are listed on the DSL Inventory.

CANADIAN WHMIS SYMBOLS: **A: Compressed Gas**
B1: Flammable Gases
D2A: Poisonous and infectious materials other effects very toxic

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

16. OTHER INFORMATION

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DEFINITIONS OF TERMS

A large number of abbreviations and acronyms appear on a MSDS. Some of these, which are commonly used, include the following:

CAS #: This is the Chemical Abstract Service Number that uniquely identifies each compound.

ACGIH - American Conference of Governmental Industrial Hygienists, a professional association which establishes exposure limits. **TLV -** Threshold Limit Value - an airborne concentration of a substance that represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour Time Weighted Average **(TWA)**, the 15-minute Short Term Exposure Limit, and the instantaneous Ceiling Level **(C)**. Skin absorption effects must also be considered. **OSHA** - U.S. Occupational Safety and Health Administration. **PEL -** Permissible Exposure Limit - This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the

vacated PELs are indicated. The phrase, Vacated 1989 PEL, is placed next to the PEL that was vacated by Court Order. **IDLH -** Immediately Dangerous to Life and Health **-** This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury. **The DFG - MAK** is the Republic of Germany s Maximum Exposure Level, similar to the U.S. PEL. **NIOSH** is the National Institute of Occupational Safety and Health, which is the research arm of the U.S. **O**ccupational **S**afety and **H**ealth **A**dministration (**OSHA**). NIOSH issues exposure guidelines called **R**ecommended **E**xposure **L**evels (**REL**s). When no exposure guidelines are established, an entry of **NE** is made for reference.
HAZARD RATINGS: HAZARDOUS MATERIALS IDENTIFICATION SYSTEM: Health Hazard: **0** (minimal acute or chronic exposure hazard); **1** (slight acute or chronic exposure hazard); **2** (moderate acute or significant chronic exposure hazard); **3** (severe acute exposure hazard; onetime overexposure can cause permanent injury and may be fatal); **4** (extreme acute exposure hazard; onetime overexposure can be fatal). Flammability Hazard: **0** (minimal hazard); **1** (materials that require substantial pre-heating before burning); **2** (combustible liquid or solids; liquids with a flash point of 38-93◦C [100-200◦F]); **3** (Class IB and IC flammable liquids with flash points below 38◦C [100◦F]); **4** (Class IA flammable liquids with flash points below 23◦C [73◦F] and boiling points below 38◦C [100◦F]. Reactivity Hazard: **0** (normally stable); 1 (material that can become unstable at elevated temperatures or which can react slightly with water); **2** (materials that are unstable but do not detonate or which can react violently with water); **3** (materials that can detonate when initiated or which can react explosively with water); **4** (materials that can detonate at normal temperatures or pressures).
NATIONAL FIRE PROTECTION ASSOCIATION: Health Hazard: **0** (material that on exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials); **1** (materials that on exposure under fire conditions could cause irritation or minor residual injury); **2** (materials that on intense or continued exposure under fire conditions could cause temporary incapacitation or possible residual injury); **3** (materials that can on short exposure could cause serious temporary or residual injury); **4** (materials that under very short exposure could cause death or major residual injury). Flammability Hazard and Reactivity Hazard: Refer to definitions for Hazardous Materials Identification System .
FLAMMABILITY LIMITS IN AIR: Much of the information related to fire and explosion is derived from the National Fire Protection Association (**NFPA**). Flash Point - Minimum temperature at which a liquid gives off sufficient vapors to form an ignitable mixture with air. Autoignition Temperature: The minimum temperature required to initiate combustion in air with no other source of ignition. LEL - the lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source. UEL - the highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.

TOXICOLOGICAL INFORMATION: Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. Definitions of some terms used in this section are: **LD_{50}** - Lethal Dose (solids & liquids) which kills 50% of the exposed animals; **LC_{50}** - Lethal Concentration (gases) which kills 50% of the exposed animals; **ppm** concentration expressed in parts of material per million parts of air or water; **mg/m^3** concentration expressed in weight of substance per volume of air; **mg/kg** quantity of material, by weight, administered to a test subject, based on their body weight in kg. Other measures of toxicity include **TDLo**, the lowest dose to cause a symptom and **TCLo** the lowest concentration to cause a symptom; **TDo**, **LDLo**, **LDo**, **TC**, **TCo**, **LCLo**, and **LCo**, the lowest dose (or concentration) to cause lethal or toxic effects. **BEI** - Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV. Ecological Information: **EC** is the effect concentration in water. Data from several sources are used to evaluate the cancer-causing potential of the material. The sources and ratings are: **IARC** - the International Agency for Research on Cancer; 1 = Carcinogenic to humans, 2A, 2B = Probably carcinogenic to humans, 3 = Unclassifiable as to carcinogenicity in humans, and 4 = Probably not carcinogenic to humans. **NTP** - the National Toxicology Program; K =Known to be a human carcinogen, and R = Reasonably anticipated to be a human carcinogen. **RTECS** - the Registry of Toxic Effects of Chemical Substances. **OSHA -** Occupational Safety and Health Administration and **CAL/OSHA -** California s subunit of the Occupational Safety and Health Administration; Ca = Carcinogen defined with no further categorization. **ACGIH** American Conference of Governmental Industrial Hygienists; A1 = Confirmed human carcinogen, A2 = Suspected human carcinogen, A3 = Confirmed animal carcinogen with unknown relevance to humans, A4 = Not classifiable as a human carcinogen, and A5 = Not suspected as a human carcinogen. **NIOSH** U.S. National Institute for Occupational Safety and Health; Ca = Potential occupational carcinogen, with no further categorization. **EPA** U.S. Environmental Protection; A = Human carcinogen, B = Probable human carcinogen, C = Possible human carcinogen, D = Not classifiable as to human carcinogenicity, E = Evidence of Non-carcinogenicity for humans, K = Known human carcinogen, L = Likely to produce cancer in humans, CBD = Cannot be determined, NL = Not likely to be carcinogenic in humans, and I = Data are inadequate for an assessment of human carcinogenic potential.
REGULATORY INFORMATION: This section explains the impact of various laws and regulations on the material. **EPA** is the U.S. Environmental Protection Agency. **WHMIS** is the Canadian Workplace Hazardous Materials Information System. **DOT** and **TC** are the U.S. Department of Transportation and the Transport Canada, respectively. Superfund Amendments and Reauthorization Act **(SARA)**; the Canadian Domestic/

Non-Domestic Substances List **(DSL/NDSL)**; the U.S. Toxic Substance Control Act **(TSCA)**; Marine Pollutant status according to the **DOT**; the Comprehensive Environmental Response, Compensation, and Liability Act **(CERCLA or Superfund)**; and various state regulations. This section also includes information on the precautionary warnings that appear on a material s industrial package label.