**Section 1: Identification**
(a) VX Cavity
(b) Cavity Embalming Fluid
(c) For use by professional licensed embalmers only
(d) Manufacturer: Pierce Companies – 4722 Bronze Way – Dallas, TX 75236 – 214.333.4230
(e) Emergency Phone Number: 800.424.9300

**Section 2: Hazard Identification**
(a) OSHA/HCS status: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
(b) **DANGER!** Flammable Liquid and Vapor; Pungent odor
(c) **DANGER!** Contains Methanol - Poison. Vapor Harmful. May be fatal or cause blindness if swallowed. Prolonged and repeated skin contact can cause death or blindness. Causes respiratory tract irritation. Harmful if inhaled or absorbed through skin. May cause allergic respiratory and skin reaction. Cancer Hazard. Contains formaldehyde which can cause cancer. Risk of cancer depends on duration and level of exposure.

**Section 3: Composition/Information on Ingredients**

<table>
<thead>
<tr>
<th>CHEMICAL NAME</th>
<th>CAS NUMBER</th>
<th>%</th>
<th>Trade Secret Information: Exact % of concentration is withheld to protect Trade Secret Information. Ranges are given in accordance with CFR 29 1910.1200(i), Appendix E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formaldehyde *</td>
<td>50-00-0</td>
<td>5-15</td>
<td></td>
</tr>
<tr>
<td>Methanol **</td>
<td>67-56-10</td>
<td>15-25</td>
<td></td>
</tr>
</tbody>
</table>

**Section 4: First-Aid Measures**

**Eye Contact:** Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Chemical burns must be treated promptly by a physician. Get medical attention immediately.

**Skin Contact:** In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Remove contaminated, soaked clothing immediately and dispose of safely. Get medical attention immediately.

**Serious Skin Contact:** Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

**Inhalation:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

**Serious Inhalation:** Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth respiration. **WARNING:** It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Seek immediate medical attention.
Ingestion: Wash out mouth with water. If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Protection of first aid personnel: No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. If it is suspected that dust, vapor, mist or gas are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus.

Section 5: Fire-fighting Measures
NFPA: Health: 3 Flammability: 2 Instability: 0
Flammability of product: Flammable liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard.
Extinguishing media: Dry chemical, Carbon dioxide (CO2), Aqueous film forming foam, Foam
Extinguishing media which must not be used for safety reasons: Do not use a solid water stream as it may scatter and spread fire
Special exposure hazards arising from the substance or preparation itself, its combustion products, or released gases: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. Under conditions giving incomplete combustion, hazardous gases produced may consist of carbon monoxide, carbon dioxide (CO2).
Special protective equipment for fire-fighters: Self-contained breathing apparatus (EN 133)
Environmental precautions: Dike and collect water used to fight fire.
Other information: Cool containers/tanks with water spray
Special Remarks on Fire Hazards: Explosive in the form of vapor when exposed to heat or flame. Vapor is heavier than air and may settle in low places or spread long distances to source of ignition and flash back. Explosive atmospheres may linger. Closed containers can rupture and release toxic vapors or decomposition products. Keep away from sources of ignition – No smoking. Take necessary action to avoid static electricity discharge. Ground and bond containers when transferring material. Keep away from heat, sparks and flames. Never puncture metal tab with a metal object. Under certain atmospheric conditions a static electrical charge can ignite flammable vapors from contents of plastic bottles.

Section 6: Accidental Release Measures
Personal Precautions: Do not breathe vapors, aerosols. Do not get in eyes, on skin, or on clothing. Keep away from heat and sources of ignition. Provide adequate ventilation. Keep unnecessary people away; isolate hazard area and deny entry.
Environmental precautions: Prevent further leakage or spillage. Do not discharge into the drains/surface waters/ground water.
Methods for cleaning up: Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Dispose of in accordance with all local, state and federal regulations. Contaminated equipment (brushes, rags) must be cleaned immediately with water. Remove all sources of ignition. Keep people away from and upwind of spill/leak.
Authority notification: Within the United States, call the National Response Center (800.424.8802) and appropriate state and local authorities if the quantity released over 24 hours is equal to or greater than the reportable quantity.

Section 7: Handling and Storage
Handling: Provide sufficient air exchange and/or exhaust in work rooms. Handle in accordance with good industrial hygiene and safety practice. Handle product only in closed system or provide appropriate exhaust ventilation at machinery. Keep containers tightly closed in a dry, cool and well-ventilated place. Do not breathe vapors/dust. Always open containers slowly to allow any excess pressure to vent. Decontaminate soiled clothing properly before re-use. Destroy contaminated leather clothing.
Protection - fire and explosion: Keep away from heat, sparks and flames. Keep away from sources of ignition – no smoking. Take necessary precaution to avoid static electricity discharge. Ground and bond containers when transferring material. In case of fire, emergency cooling with water spray should be available. Never puncture metal tab with a metal object. Under certain atmospheric conditions, a static electrical charge can ignite flammable vapors from contents of plastic bottles.

Technical measures/Storage Conditions: Keep tightly closed in a dry, cool and well-ventilated place. Handle and open container with care. Take measures to prevent the build up of electrostatic charge. In case of fire, emergency cooling with water spray should be available. Never puncture metal tab with a metal object. Under certain atmospheric conditions, a static electrical charge can ignite flammable vapors from contents of plastic bottles.

Incompatible products: Keep away from acids, bases, amines, oxygen, oxidizing agents, reducing agents

Section 8: Exposure Controls/Personal Protection

<table>
<thead>
<tr>
<th>CHEMICAL NAME</th>
<th>CAS NUMBER</th>
<th>PEL OSHA</th>
<th>TLV-ACGIH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formaldehyde *</td>
<td>50-00-0</td>
<td>.75 ppm TWA 2 ppm STEL</td>
<td>.3 ppm Ceiling, A2</td>
</tr>
<tr>
<td>Methanol **</td>
<td>67-56-10</td>
<td>200 ppm TWA 250 ppm STEL</td>
<td>200 ppm TWA 250 ppm STEL</td>
</tr>
</tbody>
</table>

Engineering measures: General or dilution ventilation is frequently insufficient as the sole means of controlling employee exposure. Local ventilation is usually preferred. Explosion-proof equipment (for example fans, switches and grounded ducts) should be used in mechanical ventilation systems.

Protective equipment: A safety shower and eyewash should be readily available.

General advice: Do not breathe vapors or spray mist. Do not get in eyes, on skin or on clothing. Remove and wash contaminated clothing before re-use.

Respiratory protection: For formaldehyde concentrations > 1 and < 10 times the occupational exposure level: Use air-purifying respirator with full facepiece fitted with either cartridge(s) or canister specifically approved for protection against formaldehyde, or a full facepiece powered air-purifying respirator fitted with either cartridge(s) or canister specifically approved for protection against formaldehyde. The air purifying equipment must have an end of service life indicator, or a documented change out schedule established. Otherwise, use supplied air.

For concentrations more than 10 times the occupational exposure level and less than the lower of either 100 times the occupational exposure level or the IDLH: Use Type C full facepiece supplied air respirator operated in positive pressure or continuous flow mode.

For concentrations > 100 times the occupational exposure level or greater than the IDLH level or unknown concentrations (such as in emergencies): Use self-contained breathing apparatus with full facepiece in positive pressure mode or Type C positive-pressure full facepiece supplied-air respirator with an auxiliary positive-pressure self-contained breathing apparatus escape system.

For escape: Use positive-pressure self-contained breathing apparatus with full facepiece or full facepiece mask with chin style or front or back mounted type industrial size canister specifically approved for protection against formaldehyde.

Skin Protection: Wear impervious clothing and gloves to prevent contact. Butyl rubber is recommended. Other protective material may be used, depending on the situation, if adequate degradation and permeation data is available. If other chemicals are used in conjunction with this chemical, material selection should be based on protection for all chemicals present.

Eye/Face Protection: In addition to goggles, wear a face shield if there is a reasonable chance for splash to the face.

Section 9: Physical and chemical properties

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLASH POINT: (ASTM D93)</td>
<td>81°F</td>
</tr>
<tr>
<td>BOILING POINT:</td>
<td>206°F</td>
</tr>
<tr>
<td>EVAPORATION RATE (BUTYL ACETATE=1):</td>
<td>&lt;1</td>
</tr>
<tr>
<td>MELTING POINT:</td>
<td>No information</td>
</tr>
<tr>
<td>pH</td>
<td>2.84</td>
</tr>
<tr>
<td>SOLUBILITY IN WATER:</td>
<td>Soluble</td>
</tr>
<tr>
<td>FLAMMABLE LIMITS: LEL=6% UEL=73%</td>
<td></td>
</tr>
<tr>
<td>SPECIFIC GRAVITY (WATER=1):</td>
<td>.90 g/ml</td>
</tr>
<tr>
<td>VAPOUR DENSITY (AIR=1):</td>
<td>1.1</td>
</tr>
<tr>
<td>VAPOR PRESSURE (mm HG):</td>
<td>68 mm Hg @ 73°F</td>
</tr>
<tr>
<td>% VOLATILE BY WEIGHT:</td>
<td>32.98%</td>
</tr>
<tr>
<td>APPEARANCE AND ODOR INFORMATION:</td>
<td>Clear Liquid w/pungent odor</td>
</tr>
</tbody>
</table>

Section 10: Stability and Reactivity

UNSTABLE: NO   STABLE: YES
CONDITIONS TO AVOID: Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow the inadvertent mixing of formaldehyde with hydrochloric acid since such mixtures may produce bis-chloro-methylether, a known carcinogen.

INCOMPATIBILITY (MATERIALS TO AVOID): Strong oxidizing agents, caustics, strong alkalies and inorganic acids.

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: Decomposition occurs from heat and reaction with materials above. Decomposition products include carbon dioxide, carbon monoxide, hydrogen and formaldehyde gas.

HAZARDOUS POLYMERIZATION: Will not occur

CONDITIONS TO AVOID FOR POLYMERIZATION: Not applicable

Section 11: Toxicological Information

Formaldehyde

<table>
<thead>
<tr>
<th>Toxic effect</th>
<th>LD50: 460 mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute oral toxicity</td>
<td></td>
</tr>
<tr>
<td>Acute dermal toxicity</td>
<td>Data waiving: formaldehyde has corrosive properties.</td>
</tr>
<tr>
<td>Acute inhalation toxicity</td>
<td>LC50 (4h): 1000 mg/m3</td>
</tr>
<tr>
<td>Method</td>
<td>OECD 403</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>irritating</td>
</tr>
<tr>
<td>Species</td>
<td>Humans</td>
</tr>
<tr>
<td>Method</td>
<td>OECD 404</td>
</tr>
<tr>
<td>Skin sensitization</td>
<td>positive</td>
</tr>
<tr>
<td>Species</td>
<td>mouse</td>
</tr>
<tr>
<td>Method</td>
<td>OECD 429</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>corrosive</td>
</tr>
<tr>
<td>Species</td>
<td>Highly irritating</td>
</tr>
<tr>
<td>Method</td>
<td>OECD 405</td>
</tr>
<tr>
<td>Carcinogenic Effects</td>
<td>oral</td>
</tr>
<tr>
<td>Species</td>
<td>rats</td>
</tr>
<tr>
<td>Study</td>
<td>oral (drinking water) lifetime study</td>
</tr>
<tr>
<td></td>
<td>NOAEL: 82 mg/kg</td>
</tr>
<tr>
<td>In vitro Mutagenicity</td>
<td>Ames Test: positive – with and without metabolic activation</td>
</tr>
<tr>
<td>Method</td>
<td>OECD 471</td>
</tr>
<tr>
<td>In vivo Mutagenicity</td>
<td>Formaldehyde is a direct acting locally effective mutagen, with genotoxic effects limited to those cells in direct contact with formaldehyde (OECD SIDS). Did not cause chromosomal damage in rat bone marrow. Method: EU B.12</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>No toxicity to reproduction</td>
</tr>
<tr>
<td>Developmental effects</td>
<td>no adverse developmental effects</td>
</tr>
<tr>
<td>Routes of exposure</td>
<td>oral gavage</td>
</tr>
<tr>
<td>Species</td>
<td>mouse</td>
</tr>
<tr>
<td>Developmental effects</td>
<td>no adverse developmental effects</td>
</tr>
<tr>
<td>Routes of exposure</td>
<td>inhalation</td>
</tr>
<tr>
<td>Species</td>
<td>rat</td>
</tr>
<tr>
<td>Repeated Exposure</td>
<td>Repeated Exposure</td>
</tr>
<tr>
<td>Routes of exposure</td>
<td>oral drinking water</td>
</tr>
<tr>
<td>Species</td>
<td>rats</td>
</tr>
<tr>
<td>Method</td>
<td>OECD 453</td>
</tr>
<tr>
<td></td>
<td>NOAEL: 15 mg/kg bw/day</td>
</tr>
</tbody>
</table>

Methanol
Acute oral toxicity  
LD50: > 5000 mg/kg

Acute dermal toxicity  
LD50: > 5000 mg/kg

Acute inhalation toxicity  
LC50 (4h): > 5 mg/l

Skin corrosion / irritation  
irritating

Skin sensitization  
nonsensitizer
  
Species  
guinea pig

Method  
Maximization

Serious eye damage/eye irritation  
irritant

Species  
rabbit eye

Carcinogenic effects  
No evidence of carcinogenicity

Species  
rats

Study  
inhalation lifetime study

Carcinogenic effects  
No evidence of carcinogenicity

Species  
Mice

Study  
inhalation lifetime study

In vitro Mutagenicity  

In vivo Mutagenicity  
Positive and negative results

Reproductive toxicity  
Some indication of reproductive toxicity in animals at non-physiological levels

Developmental effects  
Some indication of developmental toxicity in animals at non-physiological levels

Section 12: Ecological Information

Formaldehyde

Acute fish toxicity  
LC50: 6.7 mg/l (96h)
  
Species  
Danio rerio (Zebra fish)

Method  
OECD 203

Acute daphnia toxicity  
EC50: 5.8 g/l (48h)
  
Species  
Daphnia pulex

Method  
OECD 202

Species  
Desmodesmus subspicatus

Method  
OECD 201

Ec50 (biomass): 4.89 mg/l (72h)
  
Species  
Scenedesmus quadricauda

Method  
OECD 201

Biodegradation  
in fresh water

Method  
Readily biodegradable

Bioconcentration factor (BCF)  
0.396 l/kg

Bioaccumulation  
Bioaccumulative potential – low
Other potential hazards

The substance does not meet the criteria for PBT / vPvB according to REACH, Annex XIII

Methanol

Acute fish toxicity

<table>
<thead>
<tr>
<th>Substance</th>
<th>LC50: 28 g/l (96h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Species</td>
<td>Pimephales promelas (fathead minnow)</td>
</tr>
<tr>
<td>Method</td>
<td>Flow-through</td>
</tr>
</tbody>
</table>

Chronic fish toxicity

<table>
<thead>
<tr>
<th>Substance</th>
<th>LC50: 15.4 g/l (96h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Species</td>
<td>Lepomis macrochirus (Bluegill sunfish)</td>
</tr>
<tr>
<td>Method</td>
<td>Flow-through</td>
</tr>
</tbody>
</table>

Acute daphnia toxicity

<table>
<thead>
<tr>
<th>Substance</th>
<th>EC50: 24.5 g/l (48h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Species</td>
<td>Daphnia magna</td>
</tr>
</tbody>
</table>

Toxicity to aquatic plants

<table>
<thead>
<tr>
<th>Substance</th>
<th>EC50: 7.1 mg/l (48h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Species</td>
<td>Selenastrum capricornutum (green algae)</td>
</tr>
</tbody>
</table>

Biodegradation

48%

(5d)

Bioconcentration factor (BCF)

Bioaccumulative potential – low

Other potential hazard

The substance does not meet the criteria for PBT / vPvB according to REACH, Annex XIII

Section 13: Disposal Considerations

Waste disposal: The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Dispose of spilled material in accordance with state and local regulations for hazardous waste. Recommended methods are incineration or biological treatment at a federally or state-permitted disposal facility. Note that this information applies to the material as manufactured; processing, use or contamination may make this information inappropriate, inaccurate, or incomplete.

Note that this handling and disposal information may also apply to empty containers, liners and rinsate. State or local regulations or restrictions are complex and may differ from federal regulations. This information is intended as an aid to proper handling and disposal; the final responsibility for handling and disposal is with the owner of the waste.

Empty bottles: DO NOT RECYCLE!

Section 14: Transport Information

DOT/UN HAZARD CLASSIFICATION: N/A
Section 15: Regulatory Information

US State Regulations
Chemicals associated with the product which are subject to the state right-to-know regulations are listed along with the applicable state(s):

**Formaldehyde 50-00-0**
- Pennsylvania  Listed
- New York  Listed
- New Jersey  Listed
- Illinois  Listed
- Louisiana  Listed
- Massachusetts  Listed
- Rhode Island  Listed

**Methanol 67-56-1**
- Pennsylvania  Listed
- New York  Listed
- New Jersey  Listed
- Illinois  Listed
- Massachusetts  Listed
- Rhode Island  Listed

**California Prop.65**
WARNING: This product contains the following chemicals that are known to the State of California to cause cancer, birth defects or other reproductive harm.
- Formaldehyde 50-00-0  Listed

**U.S. FEDERAL REGULATIONS**

**TSCA Inventory:**
We certify that all components are either on the TSCA inventory or qualify for an exemption.

**OSHA FORMALDEHYDE STANDARD:** This product is capable of emitting free formaldehyde and is covered by the OSHA Formaldehyde Standard, 29 CFR 1910.1048.

**Environmental Regulations:**

**Formaldehyde 50-00-0**
- EPCRA Section 313  Listed
- CERCLA Hazardous Substance  Listed
- Extremely Hazardous Substance  Listed

**Methanol 67-56-1**
EPCRA Section 313: Listed
CERCLA Hazardous Substance: Listed

SARA 311:
- Acute Health: Yes
- Chronic Health: Yes
- Fire: Yes
- Sudden release of pressure: No
- Reactive: No

INTERNATIONAL REGULATIONS
- Australia (AICS)
- Canada (DSL)
- China (IECSC)
- Europe (EINECS)
- Japan (ENCS)
- Korea (KECI)
- Philippines (PICCS)

CANADIAN REGULATIONS
WHMIS CLASSIFICATION: This product has been classified in accordance with the hazard criteria of the CPR and the SDS contains all the information required by the CPR.
Class B, Division 3. Class D, Division 1, Subdivision A. Division 2, Subdivision A; Division 2, Subdivision B.

Section 16: Other Information
Hazardous Material Information System III (USA)
- Health: 3
- Flammability: 2
- Physical Hazards: 0

National Fire Protection Association (USA)
- Health: 3
- Flammability: 2
- Instability: 0

HMIS ratings are based on a 0-4 scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS ratings are not required on Safety Data Sheets under 29 CFT 1910.1200, the preparer may choose to provide them. HMIS ratings are to be used with a fully implemented HMIS program. HMIS is a registered mark of the National Paint & Coatings Association (NPCA).

Prepared by: Pierce Companies Regulatory Department
Date of Preparation/Revision: December 8, 2014

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