



## **HPX** **CPF=28<sup>A</sup>**

### **Glutaraldehyde/Lanolin Based Arterial Fluid with Entrone and AD-P**

HPX is a glutaraldehyde arterial fluid which contains Entrone for achieving penetration to the point of complete saturation and AD-P for control of aldehyde action to obtain better diffusion and improvement of cosmetic effect. In addition, HPX contains ultra-fine lanolins and cosmetic oils to prevent dehydration and produce a natural look and texture to tissues. HPX has a superior sanitizing action due to the glutaraldehyde present. HPX is suitable for use in all normal cases where definite firmness of tissues is desired. HPX is not recommended for use in advanced decomposition or edematous cases.

| <b>PH-A<sup>1</sup></b>                                | <b>HPX<sup>B</sup><br/>DEFINITE<sup>2</sup><br/>FIRMNESS</b> | <b>ALOE<br/>FACTOR<sup>3</sup></b> | <b>TRI-SAN<sup>4</sup><br/>ADD FOR<br/>EXTRA FIRMNESS</b> | <b>ALOE FACTOR<sup>5</sup><br/>ADD TO RESTORE<br/>MOISTURE CONTENT</b> |
|--------------------------------------------------------|--------------------------------------------------------------|------------------------------------|-----------------------------------------------------------|------------------------------------------------------------------------|
| <b>3-4</b>                                             | <b>8-10</b>                                                  | <b>1-2</b>                         | <b>2-4</b>                                                | <b>4-8</b>                                                             |
| <b>→ → MIX IN THIS ORDER → →<br/>OUNCES PER GALLON</b> |                                                              |                                    |                                                           |                                                                        |

#### **Notes:**

- A - A value assigned to all Champion fluids ranking them on the basis of preservative ability using recommended dilutions in normal cases. The Champion Preservative Factor is not index but can equal it in certain fluids. It is derived from the total chemical composition of each fluid and results of extensive field research. The Champion Preservative Factor can be used by the embalmer to predict the reactivity, preservative value and firming action of Champion fluids.
- B - Add Champion Coloro Dyes as needed to achieve desired cosmetic effect.
- 1 - For proper water conditioning and pH balance to maximize fluid efficiency (if using soft water - reduce amount to 2-3 ozs.)
  - 2 - These are recommended amounts for normal cases. Additional amounts of fluid will be needed for cases with higher aldehyde demand such as cancer, renal and liver diseases with their complications, institutional cases and other wasting diseases, delayed embalming cases, edema and bodies subjected to extensive drug therapy.
  - 3 - Humectant to control aldehyde action and prevent dehydration during embalming. Do not use in cases of moisture retention (edema, etc.).
  - 4 - For increased aldehyde action of fluid with improved rigidity and preservation. (Increases preservative factor of fluid without inducing dehydration or other unwanted effects.)
  - 5 - For maximum rehydration of tissues. Restores moisture in cases of dehydration or emaciation. Use in last 1 to 1-1/2 gallons of solution with intermittent or restricted drainage.

**BEFORE USING, READ SAFETY DATA SHEET.  
FOR PROFESSIONAL EMBALMING USE ONLY.**

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

Trade name : HPX

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Arterial Embalming Fluid

Use of the substance/mixture : For professional use only

#### 1.3. Details of the supplier of the safety data sheet

THE CHAMPION COMPANY  
400 Harrison Street  
Springfield, Ohio 45505

Telephone No. (937) 324-5681

#### 1.4. Emergency telephone number

Emergency number : CHEMTREC (800) 424-9300 (Spill, Leak, Fire, Exposure or Accident)

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### GHS-US classification

|                                     |      |
|-------------------------------------|------|
| Flam. Liq. 4                        | H227 |
| Acute Tox. 3 (Oral)                 | H301 |
| Acute Tox. 3 (Dermal)               | H311 |
| Acute Tox. 4 (Inhalation:dust,mist) | H332 |
| Skin Irrit. 2                       | H315 |
| Eye Dam. 1                          | H318 |
| Resp. Sens. 1                       | H334 |
| Skin Sens. 1                        | H317 |
| Carc. 1A                            | H350 |
| STOT SE 3                           | H335 |
| STOT SE 1                           | H370 |

#### 2.2. Label elements

##### GHS-US labelling

Hazard pictograms (GHS-US) :



GHS05



GHS06



GHS07



GHS08

Signal word (GHS-US) :

: Danger

Hazard statements (GHS-US) :

: H227 - Combustible liquid  
H301+H311 - Toxic if swallowed or in contact with skin  
H315 - Causes skin irritation  
H317 - May cause an allergic skin reaction  
H318 - Causes serious eye damage  
H332 - Harmful if inhaled  
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled  
H335 - May cause respiratory irritation  
H350 - May cause cancer  
H370 - Causes damage to organs

Precautionary statements (GHS-US) :

: P201 - Obtain special instructions before use  
P202 - Do not handle until all safety precautions have been read and understood  
P210 - Keep away from heat, sparks, open flames, hot surfaces. - No smoking  
P260 - Do not breathe dust, fume, mist, spray, vapors  
P261 - Avoid breathing dust, fume, mist, spray, vapors  
P264 - Wash hands thoroughly after handling  
P270 - Do not eat, drink or smoke when using this product  
P271 - Use only in a well-ventilated area  
P272 - Contaminated work clothing must not be allowed out of the workplace

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P280 - Wear protective clothing, protective gloves, eye protection, face protection  
P285 - In case of inadequate ventilation wear respiratory protection  
P301+P310 - If swallowed: Immediately call a POISON CENTER  
P302+P352 - If on skin: Wash with plenty of water  
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing  
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P307+P311 - If exposed: Call a doctor  
P308+P313 - If exposed or concerned: Get medical attention  
P310 - Immediately call a doctor, a POISON CENTER  
P312 - Call a doctor if you feel unwell  
P330 - Rinse mouth  
P332+P313 - If skin irritation occurs: Get medical attention  
P333+P313 - If skin irritation or rash occurs: Get medical attention  
P342+P311 - If experiencing respiratory symptoms: Call a doctor  
P361 - Take off immediately all contaminated clothing  
P362 - Take off contaminated clothing and wash before reuse  
P363 - Wash contaminated clothing before reuse  
P370+P378 - In case of fire: Use alcohol resistant foam, dry powder, carbon dioxide (CO<sub>2</sub>) to extinguish  
P403+P233 - Store in a well-ventilated place. Keep container tightly closed  
P403+P235 - Store in a well-ventilated place. Keep cool  
P405 - Store locked up  
P501 - Dispose of contents and container to comply with applicable local, state, national and international regulation.

### 2.3. Other hazards

other hazards which do not result in classification : Spills of this product present a serious slipping hazard.

### 2.4. Unknown acute toxicity (GHS-US)

No data available

## SECTION 3: Composition/information on ingredients

### 3.1. Substance

Not applicable

### 3.2. Mixture

| Name                                    | Product identifier  | %       | GHS-US classification                                                                                                                                                                                   |
|-----------------------------------------|---------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Formaldehyde                            | (CAS No) 50-00-0    | 25      | Acute Tox. 3 (Oral), H301<br>Acute Tox. 3 (Dermal), H311<br>Acute Tox. 3 (Inhalation), H331<br>Skin Corr. 1B, H314<br>Eye Dam. 1, H318<br>Skin Sens. 1, H317<br>Carc. 1A, H350<br>STOT SE 3, H335       |
| Methyl alcohol                          | (CAS No) 67-56-1    | 10 - 22 | Flam. Liq. 2, H225<br>Acute Tox. 3 (Oral), H301<br>Acute Tox. 3 (Dermal), H311<br>Acute Tox. 3 (Inhalation:vapor), H331<br>STOT SE 1, H370                                                              |
| Glutaraldehyde                          | (CAS No) 111-30-8   | <3.5    | Flam. Liq. 4, H227<br>Acute Tox. 3 (Oral), H301<br>Acute Tox. 2 (Inhalation:dust,mist), H330<br>Skin Corr. 1B, H314<br>Eye Dam. 1, H318<br>Resp. Sens. 1, H334<br>Skin Sens. 1, H317<br>STOT SE 3, H335 |
| Boric acid, disodium salt, pentahydrate | (CAS No) 12179-04-3 | <2.5    | Repr. 1B, H360                                                                                                                                                                                          |
| Ethyl formate                           | (CAS No) 109-94-4   | < 0.25  | Flam. Liq. 2, H225<br>Acute Tox. 4 (Oral), H302<br>Acute Tox. 4 (Inhalation), H332<br>Eye Irrit. 2A, H319<br>STOT SE 3, H335                                                                            |
| Oils, cedarwood, Texan                  | (CAS No) 68990-83-0 | < 0.25  | Asp. Tox. 1, H304                                                                                                                                                                                       |

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### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

- |                                       |                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| First-aid measures general            | : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).                                                                                                                                                                                                                     |
| First-aid measures after inhalation   | : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Give artificial respiration if necessary. Immediately get medical attention.                                                                                                                                                                                   |
| First-aid measures after skin contact | : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. If skin irritation occurs: Get medical attention.                                                                                                                                                                                   |
| First-aid measures after eye contact  | : In case of contact with eyes, rinse immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult an ophthalmologist. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical attention immediately.                                                                           |
| First-aid measures after ingestion    | : If swallowed, rinse mouth with water (only if the person is conscious). Call a POISON CENTER. Obtain emergency medical attention. Give water or milk if the person is fully conscious. Never give anything by mouth to a person who is not fully conscious. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. |

#### 4.2. Most important symptoms and effects, both acute and delayed

- |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Symptoms/injuries                    | : Causes damage to organs.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Symptoms/injuries after inhalation   | : Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation. Inhalation of concentrated vapors may cause serious damage to the lining of the nose, throat, and lungs. Depression of the central nervous system, headaches, dizziness, drowsiness, loss of coordination. Difficulty in breathing. Danger of serious damage to health by prolonged exposure through inhalation. May cause cancer by inhalation. Causes damage to liver through prolonged or repeated exposure if inhaled. |
| Symptoms/injuries after skin contact | : Toxic in contact with skin. Repeated exposure to this material can result in absorption through skin causing significant health hazard. May cause an allergic skin reaction. Causes skin irritation. Redness. Dermatitis. Contains formaldehyde which can combine with epidermal protein to produce a hapten-protein couple capable of sensitising T-lymphocytes. Subsequent exposures cause a type IV hypersensitivity reaction.                                                                                                                           |
| Symptoms/injuries after eye contact  | : Causes serious eye damage. Can cause blindness.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Symptoms/injuries after ingestion    | : Toxic if swallowed. May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract. Ingestion may cause nausea and vomiting. Can cause blindness. Death in extreme cases. This material contains methanol, which, when ingested, has caused acidosis, ocular toxicity ranging from diminished visual capacity to complete blindness, and death.                                                                                                                                                                              |

#### 4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

- |                                |                                                                      |
|--------------------------------|----------------------------------------------------------------------|
| Suitable extinguishing media   | : Foam. Dry powder. Carbon dioxide. Water spray. Sand.               |
| Unsuitable extinguishing media | : Do not use a solid water stream as it may scatter and spread fire. |

#### 5.2. Special hazards arising from the substance or mixture

- |                  |                                                                                                                                                                                                                                                    |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Fire hazard      | : Combustible liquid.                                                                                                                                                                                                                              |
| Explosion hazard | : May form flammable/explosive vapor-air mixture. Heating will cause pressure rise with risk of bursting and subsequent explosion. Vapors can travel considerable distances to a source of ignition where they can ignite, flash back, or explode. |

#### 5.3. Advice for firefighters

- |                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Firefighting instructions             | : Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Protective equipment for firefighters | : Do not enter fire area without proper protective equipment, including respiratory protection. Wear a self contained breathing apparatus.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Other information                     | : Special danger of slipping by leaking and spilling product. Thermal combustion may release carbon monoxide and dioxide, unburned hydrocarbons. Toxic gases and fumes may be released in a fire. On heating, there is a risk of bursting due to internal pressure build-up. Cool down the containers exposed to heat with a water spray. Combustible liquid. Explosive dust-air mixtures may form. Vapors are heavier than air and may travel considerable distance to an ignition source and flash back to source of vapors. Alcohols burn with a pale blue flame which may be extremely hard to see under normal lighting conditions. Personnel may be able to feel the heat of the fire without seeing flames. Extreme caution must be exercised in fighting alcohol fires. |

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### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : Avoid breathing dust, fume, mist, spray, vapors. Stop leak if safe to do so. Surface will become slippery when wet or damp. No open flames. No smoking. Take precautionary measures against static discharge. Eliminate all ignition sources if safe to do so.

##### 6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

##### 6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.  
Emergency procedures : Ventilate area.

#### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

#### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials. Collect all waste in suitable and labelled containers and dispose according to local legislation. Ensure all national and local regulations are observed. Thoroughly wash the area with water after a spill or leak clean-up. Dispose of waste according to applicable legislation. Incinerate, dispose in sanitary landfill - if permitted. Consult the appropriate authorities about waste disposal.

#### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Precautions for safe handling : Obtain special instructions before use. Avoid contact with skin and eyes. Work in a well-ventilated area. When not in use, keep containers tightly closed. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.  
Hygiene measures : Do not eat, drink or smoke when using this product. Handle in accordance with good industrial hygiene and safety practices.

#### 7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Provide local exhaust or general room ventilation. A washing facility for eye and skin cleaning purposes should be present.  
Storage conditions : Keep out of reach of children. Keep only in the original container in a cool, well-ventilated place away from highly flammable substances. Keep container tightly closed and dry. Store away from direct sunlight or other heat sources.  
Incompatible materials : Strong acids, bases. Oxidizing agents.

#### 7.3. Specific end use(s)

No additional information available

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

| Boric acid, disodium salt, pentahydrate (12179-04-3) |                                 |                                          |
|------------------------------------------------------|---------------------------------|------------------------------------------|
| USA ACGIH                                            | ACGIH TWA (mg/m <sup>3</sup> )  | 2 mg/m <sup>3</sup> (inhalable fraction) |
| USA ACGIH                                            | ACGIH STEL (mg/m <sup>3</sup> ) | 6 mg/m <sup>3</sup> (inhalable fraction) |
| Glutaraldehyde (111-30-8)                            |                                 |                                          |
| USA ACGIH                                            | ACGIH Ceiling (ppm)             | 0.05 ppm (activated and inactivated)     |
| Formaldehyde (50-00-0)                               |                                 |                                          |
| USA ACGIH                                            | ACGIH Ceiling (ppm)             | 0.3 ppm                                  |
| USA OSHA                                             | OSHA PEL (TWA) (ppm)            | 0.75 ppm                                 |
| USA OSHA                                             | OSHA PEL (STEL) (ppm)           | 2 ppm (see 29 CFR 1910.1048)             |
| Methyl alcohol (67-56-1)                             |                                 |                                          |
| USA ACGIH                                            | ACGIH TWA (ppm)                 | 200 ppm                                  |

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| Methyl alcohol (67-56-1) |                                     |                       |
|--------------------------|-------------------------------------|-----------------------|
| USA ACGIH                | ACGIH STEL (ppm)                    | 250 ppm               |
| USA OSHA                 | OSHA PEL (TWA) (mg/m <sup>3</sup> ) | 260 mg/m <sup>3</sup> |
| USA OSHA                 | OSHA PEL (TWA) (ppm)                | 200 ppm               |

| Ethyl formate (109-94-4) |                                     |                       |
|--------------------------|-------------------------------------|-----------------------|
| USA ACGIH                | ACGIH STEL (ppm)                    | 100 ppm               |
| USA OSHA                 | OSHA PEL (TWA) (mg/m <sup>3</sup> ) | 300 mg/m <sup>3</sup> |
| USA OSHA                 | OSHA PEL (TWA) (ppm)                | 100 ppm               |

### 8.2. Exposure controls

|                                  |                                                                                                                                                                                                                          |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Appropriate engineering controls | : Provide local exhaust or general room ventilation. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.                                            |
| Personal protective equipment    | : Avoid all unnecessary exposure. Wear protective clothing, protective gloves, eye protection/goggles, face protection. For certain operations, additional Personal Protection Equipment (PPE) may be required.          |
| Hand protection                  | : Wear impermeable protective nitrile gloves. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. |
| Eye protection                   | : Contact lenses should not be worn. Chemical goggles and face shields are required to prevent potential eye contact, irritation or injury.                                                                              |
| Skin and body protection         | : Long sleeved protective clothing. Overall. Rubber apron, boots. safety foot-wear.                                                                                                                                      |
| Respiratory protection           | : In case of insufficient ventilation. Wear suitable respiratory equipment. Approved organic vapor respirator.                                                                                                           |
| Other information                | : Do not eat, drink or smoke during use.                                                                                                                                                                                 |

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

|                                             |                             |
|---------------------------------------------|-----------------------------|
| Physical state                              | : Liquid                    |
| Color                                       | : Pink                      |
| Odor                                        | : Pungent odor              |
| Odor threshold                              | : No data available         |
| pH                                          | : No data available         |
| Relative evaporation rate (butyl acetate=1) | : 1                         |
| Melting point                               | : No data available         |
| Freezing point                              | : No data available         |
| Boiling point                               | : 93.33 °C (200 °F)         |
| Flash point                                 | : 82.77 °C (181 °F COC)     |
| Auto-ignition temperature                   | : No data available         |
| Decomposition temperature                   | : No data available         |
| Flammability (solid, gas)                   | : No data available         |
| Vapor pressure                              | : No data available         |
| Relative vapor density at 20 °C             | : ≈ 1                       |
| Relative density                            | : No data available         |
| Density                                     | : 1.06 Specific Gravity     |
| Solubility                                  | : Water: completely soluble |
| Log Pow                                     | : No data available         |
| Log Kow                                     | : No data available         |
| Viscosity, kinematic                        | : No data available         |
| Viscosity, dynamic                          | : No data available         |
| Explosive properties                        | : No data available         |
| Oxidising properties                        | : No data available         |
| Explosive limits                            | : 6.7 - 72 vol %            |

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### 9.2. Other information

VOC content : 20 % (Percent Volatiles)

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No additional information available

### 10.2. Chemical stability

Stable at normal conditions.

### 10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

### 10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

### 10.5. Incompatible materials

Strong acids. Strong bases. Oxidizing agents.

### 10.6. Hazardous decomposition products

On thermal combustion form: Fume. Carbon monoxide. Carbon dioxide. unburned hydrocarbons. Toxic fumes.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Toxic if swallowed. Toxic in contact with skin. Harmful if inhaled.

| Boric acid, disodium salt, pentahydrate (12179-04-3) |                                |
|------------------------------------------------------|--------------------------------|
| LD50 oral rat                                        | 2403 mg/kg                     |
| ATE US (oral)                                        | 2403.00000000 mg/kg bodyweight |
| Glutaraldehyde (111-30-8)                            |                                |
| LD50 oral rat                                        | 252 mg/kg                      |
| LD50 dermal rabbit                                   | 560 µl/kg                      |
| LC50 inhalation rat (mg/l)                           | 0.1 mg/l/4h                    |
| ATE US (oral)                                        | 252.00000000 mg/kg bodyweight  |
| ATE US (vapors)                                      | 0.10000000 mg/l/4h             |
| ATE US (dust,mist)                                   | 0.10000000 mg/l/4h             |
| Formaldehyde (50-00-0)                               |                                |
| LD50 oral rat                                        | 600 mg/kg                      |
| LD50 dermal rabbit                                   | 270 mg/kg                      |
| LC50 inhalation rat (mg/l)                           | 0.578 mg/l/4h                  |
| ATE US (oral)                                        | 100.00000000 mg/kg bodyweight  |
| ATE US (dermal)                                      | 270.00000000 mg/kg bodyweight  |
| ATE US (gases)                                       | 700.00000000 ppmv/4h           |
| ATE US (vapors)                                      | 0.57800000 mg/l/4h             |
| ATE US (dust,mist)                                   | 0.57800000 mg/l/4h             |
| Methyl alcohol (67-56-1)                             |                                |
| LC50 inhalation rat (ppm)                            | 22500 ppm (Exposure time: 8 h) |
| ATE US (oral)                                        | 100.00000000 mg/kg bodyweight  |
| ATE US (dermal)                                      | 300.00000000 mg/kg bodyweight  |
| ATE US (vapors)                                      | 3.00000000 mg/l/4h             |
| Ethyl formate (109-94-4)                             |                                |
| LD50 oral rat                                        | 1850 mg/kg                     |
| LD50 dermal rabbit                                   | > 5000 mg/kg                   |
| ATE US (oral)                                        | 1850.00000000 mg/kg bodyweight |
| ATE US (gases)                                       | 4500.00000000 ppmv/4h          |
| ATE US (vapors)                                      | 11.00000000 mg/l/4h            |
| ATE US (dust,mist)                                   | 1.50000000 mg/l/4h             |

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|                                   |                                                                                                                   |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Skin corrosion/irritation         | : Causes skin irritation.                                                                                         |
| Serious eye damage/irritation     | : Causes serious eye damage.                                                                                      |
| Respiratory or skin sensitisation | : May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction. |
| Germ cell mutagenicity            | : Not classified<br>(Based on available data, the classification criteria are not met)                            |
| Carcinogenicity                   | : May cause cancer.                                                                                               |

| Formaldehyde (50-00-0)                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IARC group                                         | 1 - Carcinogenic to humans                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| National Toxicity Program (NTP) Status             | 2 - Known Human Carcinogens                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Reproductive toxicity                              | : Not classified<br>(Based on available data, the classification criteria are not met)                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Specific target organ toxicity (single exposure)   | : May cause respiratory irritation. Causes damage to organs.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Specific target organ toxicity (repeated exposure) | : Not classified<br>(Based on available data, the classification criteria are not met)                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Aspiration hazard                                  | : Not classified<br>(Based on available data, the classification criteria are not met)                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Symptoms/injuries after inhalation                 | : Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation. Inhalation of concentrated vapors may cause serious damage to the lining of the nose, throat, and lungs. Depression of the central nervous system, headaches, dizziness, drowsiness, loss of coordination. Difficulty in breathing. Danger of serious damage to health by prolonged exposure through inhalation. May cause cancer by inhalation. Causes damage to liver through prolonged or repeated exposure if inhaled. |
| Symptoms/injuries after skin contact               | : Toxic in contact with skin. Repeated exposure to this material can result in absorption through skin causing significant health hazard. May cause an allergic skin reaction. Causes skin irritation. Redness. Dermatitis. Contains formaldehyde which can combine with epidermal protein to produce a hapten-protein couple capable of sensitising T-lymphocytes. Subsequent exposures cause a type IV hypersensitivity reaction.                                                                                                                           |
| Symptoms/injuries after eye contact                | : Causes serious eye damage. Can cause blindness.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Symptoms/injuries after ingestion                  | : Toxic if swallowed. May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract. Ingestion may cause nausea and vomiting. Can cause blindness. Death in extreme cases. This material contains methanol, which, when ingested, has cards acidosis, ocular toxicity ranging from diminished visual capacity to complete blindness, and death.                                                                                                                                                                               |

## SECTION 12: Ecological information

### 12.1. Toxicity

| Glutaraldehyde (111-30-8) |                                                                                      |
|---------------------------|--------------------------------------------------------------------------------------|
| LC50 fishes 1             | 7.8 - 22 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])          |
| EC50 Daphnia 1            | 14 mg/l (Exposure time: 48 h - Species: Daphnia magna)                               |
| LC50 fish 2               | 2.6 - 4.8 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [flow-through])   |
| EC50 Daphnia 2            | 0.56 - 1.0 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])              |
| Formaldehyde (50-00-0)    |                                                                                      |
| LC50 fishes 1             | 22.6 - 25.7 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through]) |
| EC50 Daphnia 1            | 2 mg/l (Exposure time: 48 h - Species: Daphnia magna)                                |
| LC50 fish 2               | 1510 µg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])              |
| EC50 Daphnia 2            | 11.3 - 18 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])               |

### 12.2. Persistence and degradability

| HPX                           |                  |
|-------------------------------|------------------|
| Persistence and degradability | Not established. |

### 12.3. Bioaccumulative potential

| HPX                       |                  |
|---------------------------|------------------|
| Bioaccumulative potential | Not established. |

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| Glutaraldehyde (111-30-8) |                           |
|---------------------------|---------------------------|
| Log Pow                   | 0.22 (at 25 °C)           |
| Formaldehyde (50-00-0)    |                           |
| Log Pow                   | 0.35 (at 25 °C)           |
| Ethyl formate (109-94-4)  |                           |
| BCF fish 1                | (will not bioconcentrate) |

### 12.4. Mobility in soil

No additional information available

### 12.5. Other adverse effects

|                              |                                       |
|------------------------------|---------------------------------------|
| Effect on ozone layer        | : No additional information available |
| Effect on the global warming | : No additional information available |
| Other information            | : Avoid release to the environment.   |

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

|                                |                                                                                                                                                                                                |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Waste disposal recommendations | : Dispose in a safe manner in accordance with local and national regulations. Incinerate, dispose in sanitary landfill - if permitted. Ensure all national and local regulations are observed. |
| Additional information         | : Do not re-use empty containers. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose containers to flames, sparks, heat, or other potential ignition sources.                |
| Ecology - waste materials      | : Avoid release to the environment.                                                                                                                                                            |

## SECTION 14: Transport information

In accordance with DOT

|                                |                                                       |
|--------------------------------|-------------------------------------------------------|
| Transport document description | : UN2209, Formaldehyde, solutions, 8, PGIII, ltd.qty. |
| Hazard labels (DOT)            | : 8 - Corrosive                                       |



|                                                                  |                                                                                                         |
|------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| Packing group (DOT)                                              | : III                                                                                                   |
| DOT Packaging Exceptions (49 CFR 173.xxx)                        | : 154                                                                                                   |
| DOT Packaging Non Bulk (49 CFR 173.xxx)                          | : 203                                                                                                   |
| DOT Packaging Bulk (49 CFR 173.xxx)                              | : 241                                                                                                   |
| DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) | : 5 L                                                                                                   |
| DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)     | : 60 L                                                                                                  |
| DOT Vessel Stowage Location                                      | : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel. |
| DOT Vessel Stowage Other                                         | : 40 - Stow "clear of living quarters"                                                                  |

### Additional information

|                   |                                           |
|-------------------|-------------------------------------------|
| Other information | : No supplementary information available. |
|-------------------|-------------------------------------------|

### Transport by sea

No additional information available

### Air transport

No additional information available

# HPX

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### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

|                                                                                                                                                                       |         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>HPX</b>                                                                                                                                                            |         |
| RQ (Reportable quantity, section 304 of EPA's List of Lists)                                                                                                          | 431 lb  |
| <b>Formaldehyde (50-00-0)</b>                                                                                                                                         |         |
| Listed on the United States TSCA (Toxic Substances Control Act) inventory<br>Listed on the United States SARA Section 302<br>Listed on United States SARA Section 313 |         |
| RQ (Reportable quantity, section 304 of EPA's List of Lists)                                                                                                          | 100 lb  |
| SARA Section 302 Threshold Planning Quantity (TPQ)                                                                                                                    | 500     |
| SARA Section 313 - Emission Reporting                                                                                                                                 | 0.1 %   |
| <b>Methyl alcohol (67-56-1)</b>                                                                                                                                       |         |
| RQ (Reportable quantity, section 304 of EPA's List of Lists)                                                                                                          | 5000 lb |
| SARA Section 313 - Emission Reporting                                                                                                                                 | 1.0 %   |

#### 15.2. International regulations

##### CANADA

|                                                       |                                                                                                                                                                                                                                                                                                                                             |
|-------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Glutaraldehyde (111-30-8)</b>                      |                                                                                                                                                                                                                                                                                                                                             |
| Listed on the Canadian DSL (Domestic Substances List) |                                                                                                                                                                                                                                                                                                                                             |
| WHMIS Classification                                  | Class D Division 1 Subdivision B - Toxic material causing immediate and serious toxic effects<br>Class D Division 2 Subdivision B - Toxic material causing other toxic effects<br>Class E - Corrosive Material                                                                                                                              |
| <b>Formaldehyde (50-00-0)</b>                         |                                                                                                                                                                                                                                                                                                                                             |
| Listed on the Canadian DSL (Domestic Substances List) |                                                                                                                                                                                                                                                                                                                                             |
| WHMIS Classification                                  | Class A - Compressed Gas<br>Class B Division 1 - Flammable Gas<br>Class D Division 1 Subdivision A - Very toxic material causing immediate and serious toxic effects<br>Class D Division 2 Subdivision A - Very toxic material causing other toxic effects<br>Class D Division 2 Subdivision B - Toxic material causing other toxic effects |
| <b>Ethyl formate (109-94-4)</b>                       |                                                                                                                                                                                                                                                                                                                                             |
| Listed on the Canadian DSL (Domestic Substances List) |                                                                                                                                                                                                                                                                                                                                             |
| WHMIS Classification                                  | Class B Division 2 - Flammable Liquid<br>Class D Division 2 Subdivision B - Toxic material causing other toxic effects                                                                                                                                                                                                                      |

##### EU-Regulations

|                                                                                                    |  |
|----------------------------------------------------------------------------------------------------|--|
| <b>Formaldehyde (50-00-0)</b>                                                                      |  |
| Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances) |  |

##### Classification according to Regulation (EC) No. 1272/2008 [CLP]

No additional information available

##### Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

No additional information available

##### 15.2.2. National regulations

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Formaldehyde (50-00-0)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |
| Listed on IARC (International Agency for Research on Cancer)<br>Listed on the AICS (Australian Inventory of Chemical Substances)<br>Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)<br>Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory<br>Listed on the Japanese ISHL (Industrial Safety and Health Law)<br>Listed on the Korean ECL (Existing Chemicals List)<br>Listed on NZIoC (New Zealand Inventory of Chemicals)<br>Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)<br>Japanese Poisonous and Deleterious Substances Control Law<br>Japanese Pollutant Release and Transfer Register Law (PRTR Law)<br>Listed as carcinogen on NTP (National Toxicology Program)<br>Listed on the Canadian IDL (Ingredient Disclosure List) |  |

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### 15.3. US State regulations

| Formaldehyde (50-00-0)                                |                                                             |                                                                     |                                                                   |                                   |
|-------------------------------------------------------|-------------------------------------------------------------|---------------------------------------------------------------------|-------------------------------------------------------------------|-----------------------------------|
| U.S. - California - Proposition 65 - Carcinogens List | U.S. - California - Proposition 65 - Developmental Toxicity | U.S. - California - Proposition 65 - Reproductive Toxicity - Female | U.S. - California - Proposition 65 - Reproductive Toxicity - Male | No significance risk level (NSRL) |
| Yes                                                   |                                                             |                                                                     |                                                                   |                                   |

  

| Methyl alcohol (67-56-1)                              |                                                             |                                                                     |                                                                   |                                   |
|-------------------------------------------------------|-------------------------------------------------------------|---------------------------------------------------------------------|-------------------------------------------------------------------|-----------------------------------|
| U.S. - California - Proposition 65 - Carcinogens List | U.S. - California - Proposition 65 - Developmental Toxicity | U.S. - California - Proposition 65 - Reproductive Toxicity - Female | U.S. - California - Proposition 65 - Reproductive Toxicity - Male | No significance risk level (NSRL) |
|                                                       | Yes                                                         |                                                                     |                                                                   |                                   |

### SECTION 16: Other information

Other information : None.

Full text of H-phrases: see section 16:

|                                     |                                                                           |
|-------------------------------------|---------------------------------------------------------------------------|
| Acute Tox. 2 (Inhalation:dust,mist) | Acute toxicity (inhalation:dust,mist) Category 2                          |
| Acute Tox. 3 (Dermal)               | Acute toxicity (dermal) Category 3                                        |
| Acute Tox. 3 (Inhalation)           | Acute toxicity (inhalation) Category 3                                    |
| Acute Tox. 3 (Inhalation:vapor)     | Acute toxicity (inhalation:vapor) Category 3                              |
| Acute Tox. 3 (Oral)                 | Acute toxicity (oral), Category 3                                         |
| Acute Tox. 4 (Inhalation)           | Acute toxicity (inhalation) Category 4                                    |
| Acute Tox. 4 (Inhalation:dust,mist) | Acute toxicity (inhalation:dust,mist) Category 4                          |
| Acute Tox. 4 (Oral)                 | Acute toxicity (oral), Category 4                                         |
| Asp. Tox. 1                         | Aspiration hazard, Category 1                                             |
| Carc. 1A                            | Carcinogenicity, Category 1A                                              |
| Eye Dam. 1                          | Serious eye damage/eye irritation, Category 1                             |
| Eye Irrit. 2A                       | Serious eye damage/eye irritation, Category 2A                            |
| Flam. Liq. 2                        | Flammable liquids Category 2                                              |
| Flam. Liq. 4                        | Flammable liquids Category 4                                              |
| Repr. 1B                            | Reproductive toxicity Category 1B                                         |
| Resp. Sens. 1                       | Sensitisation — Respiratory, category 1                                   |
| Skin Corr. 1B                       | Skin corrosion/irritation Category 1B                                     |
| Skin Irrit. 2                       | Skin corrosion/irritation Category 2                                      |
| Skin Sens. 1                        | Sensitisation — Skin, category 1                                          |
| STOT SE 1                           | Specific target organ toxicity (single exposure) Category 1               |
| STOT SE 3                           | Specific target organ toxicity (single exposure) Category 3               |
| H225                                | Highly flammable liquid and vapor                                         |
| H227                                | Combustible liquid                                                        |
| H301                                | Toxic if swallowed                                                        |
| H302                                | Harmful if swallowed                                                      |
| H304                                | May be fatal if swallowed and enters airways                              |
| H311                                | Toxic in contact with skin                                                |
| H314                                | Causes severe skin burns and eye damage                                   |
| H315                                | Causes skin irritation                                                    |
| H317                                | May cause an allergic skin reaction                                       |
| H318                                | Causes serious eye damage                                                 |
| H319                                | Causes serious eye irritation                                             |
| H330                                | Fatal if inhaled                                                          |
| H331                                | Toxic if inhaled                                                          |
| H332                                | Harmful if inhaled                                                        |
| H334                                | May cause allergy or asthma symptoms or breathing difficulties if inhaled |
| H335                                | May cause respiratory irritation                                          |
| H350                                | May cause cancer                                                          |

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|      |                                          |
|------|------------------------------------------|
| H360 | May damage fertility or the unborn child |
| H370 | Causes damage to organs                  |

### HMIS III Rating

Health : 2 Moderate Hazard - Temporary or minor injury may occur  
Flammability : 2 Moderate Hazard  
Physical : 0 Minimal Hazard

SDS US (GHS HazCom 2012)

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