



XEROS

Edema Factor

The Future Now: Formaldehyde Free

CPF=8^A

XEROS is a special use/additive fluid of the **Millennium New Era** line of embalming formulations. **XEROS** is formaldehyde-free and exerts a maximum dehydration effect when used as directed. **XEROS** also induces an additional high level sanitation effect in addition to effective embalming of edema cases. Use only where a severe dehydration effect is desired. Not for normal embalming use.

USE AS FOLLOWS:

LIGHT EDEMA	MODERATE EDEMA	SEVERE EDEMA	EXTREME EDEMA
1 Btl. Xeros 1/2 Btl. Trisan 1 Btl. Beta Factor 1/2 Btl. Specialist Dilute to one gallon with warm water. Inject 4 gallons.	2 Btls. Xeros 1/2 Btl. Trisan 1 Btl. Beta Factor 1 Btl. Specialist Dilute to one gallon with warm water. Inject 4 gallons.	3 Btls. Xeros 1/2 Btl. Trisan 2 Btls. Beta Factor 1 Btl. Specialist Dilute to one gallon with warm water. Inject 4 gallons.	4 Btls. Xeros 1 Btl. Trisan 2 Btls. Beta Factor 1 Btl. Specialist No dilution water. Inject 4 gallons.

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.

→ A non-lanolin arterial fluid (with $CPF \geq 20$) may be used instead of Specialist. Use at twice normal dilution rate (e.g. Fax at 16 oz./gal.) for light to moderate edema and at 3-4 times normal dilution rate (e.g. Fax at 24-32 oz./gal.) for severe or extreme edema. Maximum effect will be achieved if Specialist is used at recommended amounts.

→ Aloe Factor may be substituted in part or in whole for Beta Factor with similar results.

→ **XEROS**, used sparingly, will yield valuable embalming results in very mild cases of edema, institutional cases, delayed embalming cases and difficult cases without profound edema. Even normal cases that exhibit slight bloating and localized tissue moisture will benefit from **XEROS**. Puffy eyelids, extended temple areas, mild swelling of the cheek and mouth areas and localized edema-like hand swelling will be drastically reduced with **XEROS** at 3-4 ounces per gallon added to the normal arterial solution. Skin tightening/toning will be achieved without wrinkling or harsh drying action. Increased amounts of **XEROS** may be used to increase the drying effect, if conditions warrant.

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



XEROS Edema Factor

Safety Data Sheet

according to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

Date of issue: 05/27/2015

Version: 1.0

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

1.1. Product identifier

Trade name : XEROS Edema Factor
Other means of identification : XEROS

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

Use of the substance/mixture : Special Purpose eEmbalming Chemical
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

Acute Tox. 4 (Inhalation:dust,mist) H332
Skin Irrit. 2 H315
Eye Dam. 1 H318
Skin Sens. 1 H317
STOT SE 3 H335

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US)



GHS05

GHS07

Signal word (GHS-US)

: Danger

Hazard statements (GHS-US)

: H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H332 - Harmful if inhaled
H335 - May cause respiratory irritation

Precautionary statements (GHS-US)

: P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P261 - Avoid breathing dust, fume, mist, spray, vapors
P264 - Wash hands thoroughly after handling
P271 - Use only in a well-ventilated area
P272 - Contaminated work clothing must not be allowed out of the workplace
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
P312 - Call a POISON CENTER
P332+P313 - If skin irritation occurs: Get medical attention
P333+P313 - If skin irritation or rash occurs: Get medical attention
P362 - Take off contaminated clothing and wash before reuse
P403+P233 - Store in a well-ventilated place. Keep container tightly closed

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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
Glutaraldehyde	(CAS No) 111-30-8	<6	Flam. Liq. 4, H227 Acute Tox. 3 (Oral), H301 Acute Tox. 2 (Inhalation:dust,mist), H330 Skin Corr. 1B, H314 Eye Dam. 1, H318 Resp. Sens. 1, H334 Skin Sens. 1, H317 STOT SE 3, H335
Citric acid	(CAS No) 77-92-9	<5	Eye Irrit. 2A, H319
Boric acid (H3BO3)	(CAS No) 10043-35-3	<5	Repr. 1B, H360
Sulfuric acid, dipotassium salt	(CAS No) 7778-80-5	<5	Eye Irrit. 2A, H319
Boric acid, disodium salt, pentahydrate	(CAS No) 12179-04-3	<2.5	Repr. 1B, H360

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). Do NOT induce vomiting. Obtain emergency medical attention. Call a POISON CENTER. 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 after inhalation : Harmful if inhaled. Danger of serious damage to health by prolonged exposure through inhalation. May cause respiratory irritation. Difficulty in breathing. Inhalation of concentrated vapors may cause serious damage to the lining of the nose, throat, and lungs.

Symptoms/injuries after skin contact : Causes skin irritation. May cause an allergic skin reaction. Redness. Dermatitis. Absorbed through the skin.

Symptoms/injuries after eye contact : Causes serious eye damage. Can cause blindness.

Symptoms/injuries after ingestion : May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract. Ingestion may cause nausea and vomiting. Death in extreme cases.

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.

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5.2. Special hazards arising from the substance or mixture

No additional information available

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/spilling product. Thermal combustion may release carbon monoxide and dioxide. unburned hydrocarbons. Sulfur oxides. Toxic gases and fumes may be released in a fire.

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.

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, state, national and international legislation. Ensure all local, state, national and international regulations are observed. Thoroughly wash the area with water after a spill or leak clean-up. Dispose of waste according to applicable legislation.

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 ³)	2 mg/m ³
USA ACGIH	ACGIH STEL (mg/m ³)	6 mg/m ³

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Boric acid (H3BO3) (10043-35-3)		
USA ACGIH	ACGIH TWA (mg/m³)	2 mg/m³ (inhalable fraction)
USA ACGIH	ACGIH STEL (mg/m³)	6 mg/m³ (inhalable fraction)

Glutaraldehyde (111-30-8)		
USA ACGIH	ACGIH Ceiling (ppm)	0.05 ppm (activated and inactivated)

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	: Pale blue
Odor	: Faint 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	: 96 °C (205) °F
Flash point	: > 87 °C (>190 °F TCC)
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 Specific Gravity
Solubility	: No data available
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	: No data available

9.2. Other information

VOC content	: 10 % (with heat)
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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. Sulfur oxides. Toxic fumes.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Harmful if inhaled.

XEROS Edema Factor	
ATE US (dust,mist)	1.50000000 mg/l/4h
Citric acid (77-92-9)	
LD50 oral rat	3000 mg/kg
LD50 dermal rat	> 2000 mg/kg
Boric acid, disodium salt, pentahydrate (12179-04-3)	
LD50 oral rat	2403 mg/kg
ATE US (oral)	2403.00000000 mg/kg bodyweight
Boric acid (H3BO3) (10043-35-3)	
LD50 oral rat	2660 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
LC50 inhalation rat (mg/l)	> 0.16 mg/l/4h
ATE US (oral)	2660.00000000 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
Sulfuric acid, dipotassium salt (7778-80-5)	
LD50 oral rat	6600 mg/kg
ATE US (oral)	6600.00000000 mg/kg bodyweight

Skin corrosion/irritation : Causes skin irritation.

Serious eye damage/irritation : Causes serious eye damage.

Respiratory or skin sensitisation : May cause an allergic skin reaction.

Germ cell mutagenicity : Not classified
Based on available data, the classification criteria are not met.

Carcinogenicity : Not classified
Based on available data, the classification criteria are not met.

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : May cause respiratory irritation.

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Specific target organ toxicity (repeated exposure)	: Not classified Based on available data, the classification criteria are not met.
Aspiration hazard	: Not classified Based on available data, the classification criteria are not met.
Symptoms/injuries after inhalation	: Harmful if inhaled. Danger of serious damage to health by prolonged exposure through inhalation. May cause respiratory irritation. Difficulty in breathing. Inhalation of concentrated vapors may cause serious damage to the lining of the nose, throat, and lungs.
Symptoms/injuries after skin contact	: Causes skin irritation. May cause an allergic skin reaction. Redness. Dermatitis. Absorbed through the skin.
Symptoms/injuries after eye contact	: Causes serious eye damage. Can cause blindness.
Symptoms/injuries after ingestion	: May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract. Ingestion may cause nausea and vomiting. Death in extreme cases.

SECTION 12: Ecological information

12.1. Toxicity

Citric acid (77-92-9)	
LC50 fishes 1	1516 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])
Boric acid (H3BO3) (10043-35-3)	
EC50 Daphnia 1	115 - 153 mg/l (Exposure time: 48 h - Species: Daphnia magna)
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])
Sulfuric acid, dipotassium salt (7778-80-5)	
LC50 fishes 1	653 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus)
EC50 Daphnia 1	890 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC50 fish 2	3550 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])

12.2. Persistence and degradability

XEROS Edema Factor	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

XEROS Edema Factor	
Bioaccumulative potential	Not established.
Citric acid (77-92-9)	
Log Pow	-1.72 (at 20 °C)
Boric acid (H3BO3) (10043-35-3)	
BCF fish 1	0
Log Pow	-0.757 (at 25 °C)
Glutaraldehyde (111-30-8)	
Log Pow	0.22 (at 25 °C)

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.

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SECTION 13: Disposal considerations

13.1. Waste treatment methods

- Waste disposal recommendations : Dispose in a safe manner in accordance with local, state, national and international regulations. Incinerate, dispose in sanitary landfill - if permitted. Ensure all local, state, national and international 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
Not regulated for transport

Additional information

Other information : No supplementary information available.

Transport by sea

Not regulated for transport

Air transport

Not regulated for transport

SECTION 15: Regulatory information

15.1. US Federal regulations

No additional information available

15.2. International regulations

CANADA

Citric acid (77-92-9)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class E - Corrosive Material
Boric acid (H3BO3) (10043-35-3)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class D Division 2 Subdivision A - Very toxic material causing other toxic effects
Glutaraldehyde (111-30-8)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class D Division 1 Subdivision B - Toxic material causing immediate and serious toxic effects Class D Division 2 Subdivision B - Toxic material causing other toxic effects Class E - Corrosive Material
Sulfuric acid, dipotassium salt (7778-80-5)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria

EU-Regulations

No additional information available

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 assigned

15.2.2. National regulations

No additional information available

15.3. US State regulations

No additional information available

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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 (Oral)	Acute toxicity (oral), Category 3
Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2A	Serious eye damage/eye irritation, Category 2A
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 3	Specific target organ toxicity (single exposure) Category 3
H227	Combustible liquid
H301	Toxic if swallowed
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
H332	Harmful if inhaled
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H335	May cause respiratory irritation
H360	May damage fertility or the unborn child

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)

The information herein given is in good faith but no warranty, expressed or implied, is made, except that to the best of the Company's knowledge it is accurate. The Champion Company does not assume any legal responsibilities for use or dependence upon same. Customers may wish to conduct tests of their own. The user is urged to read the information provided on the label before using product.