

ENYMO

FOURTH GENERATION

ENIGMA ARTERIAL



CHEMOSTASIS INJECTION FACTOR

Ultra-low enviro-impact ecobalming chemical for natural/green burial and eco-cremation/disposition.

Champion's Fourth Generation **ENIGMA** line of ecobalming chemicals are predicated on synergistic mixes of essential, plant-based oils and their purified or synthesized/derived active aldehyde or phenolic components in a near-anhydrous carrier to deliver maximum tissue action. The undiluted use of **ENIGMA** chemicals, without any water whatsoever, delivers acceptable temporary preservation, good cosmetic appearance and induces temporary sanitizing effects. The Modern Tenets of Embalming are therefore completely fulfilled. A fully-disclosed, clean-sheet SDS accompanies all **ENIGMA** chemical products confirming their nontoxic, nonhazardous nature and environmental impact. The result is an extremely safe and practical substitute for dangerous and toxic traditionalist formaldehyde embalming. Chemostasis effects, retarding/slowing of decomposition, are immediately noted after injection/infusion/application and are sufficient for effective holding of 3-5 days, and in some instances, possibly, a week or more. This allows adequate time for holding/transport and planning of the end-of-life celebration. The intent of ecobalming chemicals is to temporarily delay but not stop or inhibit natural decay processes and the natural and inevitable return to the elements of human remains. Champion's **ENIGMA** Ecobalming chemicals offer the modern embalmer a non-hazardous, nontoxic, eco-safe alternative for temporary preservation prior to final disposition.

DIRECTIONS FOR USE

Inject undiluted and full strength, utilize multiple sites, if needed. Inject at least 2½ - 3 gallons (more if conditions warrant). Utilize slow, deliberate injection with intermittent/restricted drainage to achieve tissue saturation and deep perfusion of arterial chemical. In addition, may be hypo-injected for localized action or applied full strength as a surface pack. For enhanced embalming action in situations of poor or compromised bodies, add 1 bottle of **ENIGMA CAVITY** to each gallon of **ENIGMA ARTERIAL** as a power-booster. For extreme or severe cases 2-3 bottles of **ENIGMA CAVITY** should be used in each gallon of **ENIGMA ARTERIAL**. This will result in an extreme and rapid ecobalming reaction. The above standard guidelines are for normal, robust bodies and their variations only. Small, fragile, emaciated or dehydrated bodies will require as little as 1 gallon to achieve good results. In addition, power boosting of only 2, 4 or 6 ounces of **ENIGMA CAVITY** per gallon may be sufficient to achieve acceptable results. Adapt and change your usage to each individual situation.

ENIGMA ARTERIAL is an excellent first gallon preinjection chemical for traditional embalming with blood-clearing and cosmetic results being excellent. **ENIGMA ARTERIAL** is also effective as an alternative co-injection and water substitute in traditional and waterless style embalming. **ENIGMA ARTERIAL** is compatible with all traditional embalming chemicals and results in improved results with reduced exposures.

Notes:

The use of **ENIGMA** Ecobalming chemicals will not dehydrate or firm a body in its action. If dehydration (as in the case of edema) is required, Champion's Third Generation **Millenium New Era** chemicals (for example: Xeros, Omega, Cavity 48, Plasma, and Alpha Factor) should be used to effect these results with the accompanying drastic reduction/use of toxic formaldehyde and the significant overall reduction in exposure to all chemicals in a traditional style embalming.

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



ENIGMA ARTERIAL

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 : ENIGMA ARTERIAL

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

Use of the substance/mixture : Arterial Ecobalming 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

Skin Sens. 1 H317

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



GHS07

Signal word (GHS-US) : Warning

Hazard statements (GHS-US) : H227 - Combustible liquid
H317 - May cause an allergic skin reaction

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
P261 - Avoid breathing dust, fume, mist, spray, vapors
P272 - Contaminated work clothing must not be allowed out of the workplace
P280 - Wear protective clothing, protective gloves, eye protection, face protection
P301+P330+P331- If swallowed: Call a POISON CENTER. Rinse mouth. Do NOT induce vomiting
P302+P352 - If on skin: Wash with plenty of water
P333+P313 - If skin irritation or rash occurs: Get medical attention
P362 - Take off contaminated clothing and wash before reuse
P370+P378 - In case of fire: Use alcohol resistant foam, dry powder, carbon dioxide (CO2) to extinguish
P403+P235 - Store in a well-ventilated place. Keep cool
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

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SECTION 3: Composition/information on ingredients

3.1. Substance

Name	Product identifier	%	GHS-US classification
Eugenol	(CAS No) 97-53-0	<2.5	Acute Tox. 4 (Oral), H302 Eye Irrit. 2A, H319 Skin Sens. 1, H317
Vanillic Aldehyde	(CAS No) 121-33-5	<2.5	Acute Tox. 4 (Oral), H302 Eye Irrit. 2A, H319
Guaiacol	(CAS No) 90-05-1	<0.95	Flam. Liq. 4, H227 Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2A, H319
Propylene Glycol	(CAS No) 57-55-6	95	N/A
FD&C Red #40 Colorant	(CAS No) 25956-17-6	TRACE	N/A

3.2. Mixture

Not applicable

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. 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 : Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if pain, blinking or redness persist.
- 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. Never give anything by mouth to a person who is not fully conscious.

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

- Symptoms/injuries after skin contact : Repeated or prolonged skin contact may cause irritation. May cause an allergic skin reaction.
- Symptoms/injuries after eye contact : Producing fumes/mist. May irritate eyes.
- Symptoms/injuries after ingestion : Ingestion may cause nausea and vomiting. Irritation of the stomach possible.

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 : Alcohol resistant foam. Dry powder. Carbon dioxide (CO₂). 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. Vapor heavier than air may travel considerable distance to a source of ignition and flash back. Heating will cause pressure rise with risk of bursting and subsequent explosion.

5.3. Advice for firefighters

- Firefighting instructions : Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment. Use water spray to cool unopened containers.
- Protective equipment for firefighters : Do not enter fire area without proper protective equipment, including respiratory protection. Wear a self contained breathing apparatus.
- Other information : Combustible liquid. 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. Vapors are heavier than air and may travel considerable distance to an ignition source and flash back to source of vapors. Special danger of slipping by leaking/spilling product. Thermal combustion may release carbon monoxide and dioxide.

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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. Eliminate all ignition sources if safe to do so.
Take precautionary measures against static discharge.

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. Spills may be picked up with a mop and followed by a water rinse. Collect spillage. Store away from other materials. Collect all waste in suitable and labelled containers and dispose according to local legislation. Incinerate, dispose in sanitary landfill - if permitted. Thoroughly wash the area with water after a spill or leak clean-up. Wash contaminated areas with large quantities of water to a sanitary sewer, if in accordance with local, state or national legislation. 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. Empty container retains product residue. Handle uncleaned empty containers as full ones. Residue can burn if heated. Keep away from heat and direct sunlight. Take precautionary measures against static discharge.
- Hygiene measures : Do not eat, drink or smoke when using this product. Use good personal hygiene 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. Keep away from ignition sources (including static discharges).
- Incompatible materials : Strong acids, bases. Oxidizing agents. Isocyanates.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

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. Gloves. Protective goggles. Protective clothing. For certain operations, additional Personal Protection Equipment (PPE) may be required.
- Hand protection : Wear protective gloves. Protective gloves made of Nitrile.
- Eye protection : Chemical goggles and/or face shields are required to prevent potential eye contact, irritation or injury.
- Respiratory protection : The need for respiratory protection is not anticipated under normal use conditions and with adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment.
- Other information : Do not eat, drink or smoke during use.

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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Color	: Red
Odor	: Clove-like 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	: 86.6 °C (188 °F)
Flash point	: > 87.7 °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	: Water: Slight
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

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable at normal conditions. Unstable on exposure to heat. Combustible liquid. May form flammable/explosive vapor-air mixture.

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. Isocyanates.

10.6. Hazardous decomposition products

On thermal combustion form: Fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	: Not classified (Based on available data, the classification criteria are not met)
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Eugenol (97-53-0)

LD50 oral rat	1930 mg/kg
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Eugenol (97-53-0)	
ATE US (oral)	1930.00000000 mg/kg bodyweight
Vanillic Aldehyde (121-33-5)	
LD50 oral rat	1580 mg/kg
LD50 dermal rabbit	> 5010 mg/kg
ATE US (oral)	1580.00000000 mg/kg bodyweight
Guaiacol(90-05-1)	
LD50 oral rat	520 mg/kg
LD50 dermal rabbit	4600 mg/kg
ATE US (oral)	500.00000000 mg/kg bodyweight
ATE US (dermal)	4600.00000000 mg/kg bodyweight

Skin corrosion/irritation	: Not classified (Based on available data, the classification criteria are not met)
Serious eye damage/irritation	: Not classified (Based on available data, the classification criteria are not met)
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)

Eugenol (97-53-0)	
IARC group	3 - Not classifiable
Reproductive toxicity	: Not classified (Based on available data, the classification criteria are not met)
Specific target organ toxicity (single exposure)	: Not classified (Based on available data, the classification criteria are not met)
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)
Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.
Symptoms/injuries after skin contact	: Repeated or prolonged skin contact may cause irritation. May cause an allergic skin reaction.
Symptoms/injuries after eye contact	: Producing fumes/mist. May irritate eyes.
Symptoms/injuries after ingestion	: Ingestion may cause nausea and vomiting. Irritation of the stomach possible.

SECTION 12: Ecological information

12.1. Toxicity

Vanillic Aldehyde (121-33-5)	
LC50 fishes 1	53 - 61.3 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
LC50 fish 2	88 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
NOEC (acute)	10000 mg/kg (Exposure time: 42 Days - Species: Eisenia foetida [soil dry weight])
Guaiacol(90-05-1)	
EC50 Daphnia 1	25.9 mg/l (Exposure time: 48 h - Species: Daphnia magna)

12.2. Persistence and degradability

ENIGMA ARTERIAL	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

ENIGMA ARTERIAL	
Bioaccumulative potential	Not established.

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Vanillic Aldehyde (121-33-5)

Log Pow	1.23 (at 22 °C)
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Guaiaicol(90-05-1)

Log Pow	1.32
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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.

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

Guaiaicol(90-05-1)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification	Uncontrolled product according to WHMIS classification criteria
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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

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. 4 (Oral)	Acute toxicity (oral), Category 4
Eye Irrit. 2A	Serious eye damage/eye irritation, Category 2A
Flam. Liq. 4	Flammable liquids Category 4
Skin Irrit. 2	Skin corrosion/irritation Category 2
Skin Sens. 1	Sensitisation — Skin, category 1
H227	Combustible liquid
H302	Harmful if swallowed
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation

HMIS III Rating

Health : 1 Slight Hazard - Irritation or minor reversible injury possible
Flammability : 1 Slight Hazard
Physical : 0 Minimal Hazard

SDS US (GHS HazCom 2012)

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