



Dyno-Ultra MAX Arterial

SDS Revision Date: Nov. 12, 2015

SAFETY DATA SHEET

This safety data sheet complies with all requirements of GHS 5^e 2013

SECTION 1: IDENTIFICATION

Product Identifier:	Dyno-Ultra MAX Arterial
CAS Number:	Not applicable – refer to Section 3 for details on ingredients
Annex VI Index Number:	Not applicable – refer to Section 3 for details on ingredients
Product Identifier Code:	1-008L
Identified Uses of Product:	Arterial Embalming

Details of Supplier:

H.S. ECKELS & COMPANY (CANADA) LTD.

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(519) 824-8020

Emergency Telephone Number (613) 996-6666 (Canutec)

SECTION 2: HAZARD IDENTIFICATION

Classification of Mixture

Red liquid. Pungent irritating odour.

Label Elements:

Signal Words

Danger, Warning

Hazard Statements

H227: Combustible Liquid
H301: Toxic if Swallowed
H312: Harmful in Contact with Skin
H331: Toxic if Inhaled
H315: Causes Skin Irritation
H319: Causes Serious Eye Irritation
H317: May Cause an allergic skin reaction
H351: Suspected of causing cancer
H371: May cause damage to organs

Precautionary Statements – Prevention

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 and hot surfaces. - No smoking.

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P233: Keep container tightly closed.
P243: Take precautionary measures against static discharge.
P260: Do not breathe fumes, mists, vapours or spray.
P264: Wash contacted areas thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P271: Use only outdoors or in a well ventilated area.
P272: Contaminated work clothing should not be allowed out of the workplace.
P273: Avoid release to the environment
P280: Wear protective gloves, protective clothing and eye or face protection.

Precautionary Statements - Response

P301+P310+P330: IF SWALLOWED: Immediately call a POISON CENTRE or doctor. Immediately induce vomiting rinse mouth and immediately seek medical attention.
P302+P352+P362: IF ON SKIN: Take off all contaminated clothing. Wash with plenty of water for at least 20 minutes.
P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for at least 20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313: If exposed or concerned: Get medical advice.
P332+P313: If skin irritation occurs: Seek immediate medical attention.
P333+P313: If skin irritation or rash occurs: Seek immediate medical attention.
P337+P313: If eye irritation persists: Seek immediate medical attention.
P370+P378: In case of fire, use carbon dioxide, alcohol foam, dry chemical or water spray.

Precautionary Statements - Storage

P405: Store locked up.
P403+P233: Store in a well-ventilated place. Keep container tightly closed.

Precautionary Statements - Disposal

P501: Review federal, provincial or state, and local government requirements prior to disposal. For large quantities, if recycling or reclaiming is not possible, use a commercial waste disposal service.

Hazard Symbols



Skull and Cross Bones



Exclamation Mark



Health Hazard

OSHA Classification

The OSHA Hazard Communication Standard (HCS) is now aligned with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

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WHMIS Classification

Class B3 – Combustible Liquids: Flashpoint of 37.8°C–93.3°C (100°F–200°F)

Class D1A – Very Toxic Material at ≥1%: Inhalation Toxicity

Class D1B – Toxic Material at ≥1%: Oral Toxicity

Class D2B – Toxic Material at ≥1%:

Skin Sensitization – Allergic skin reaction

Skin/Eye Irritation – Reversible damage

WHMIS Hazard Symbols



SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Table 3.1: Ingredients of Mixture

Chemical Name	CAS Number	EC Number	Concentration %
Formaldehyde	50-00-0	200-001-8	34-49
Methanol	67-56-1	200-659-6	8-14

SECTION 4: FIRST-AID MEASURES

Necessary First-Aid Measures upon:

Inhalation	Remove source of contamination or move victim to fresh air. If breathing has stopped give artificial respiration, obtain medical attention immediately.
Eye Contact	Flush eyes with lukewarm water for at least 20 minutes, holding the eye lids open. If irritation persists, obtain medical attention immediately.
Skin Contact	Avoid direct contact, remove contaminated clothing flush immediately with lukewarm water for at least 20 minutes. If irritation persists, obtain medical attention immediately.
Ingestion	Induce vomiting immediately, obtain medical attention immediately.

Most Important Effects

Toxic if swallowed.

Vapours can cause permanent eye damage.

Prolonged exposure to skin can cause dermatitis.

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Repeated exposure to skin can cause sensitization
Inhalation of large amounts is toxic.

Most Important Symptoms

Immediate	Irritation of effected area Nausea and abdominal pain Inflammation of eyelids
Delayed	Collapse and Unconsciousness Broncho-pneumonia

Additional Information

Clinical Testing	Clinical tests to determine toxicity have been performed on rat and rabbit. See table 11.1 for details. Clinical testing has been performed to determine carcinogenicity. See Section 1 for details.
Medical Monitoring	Treat symptomatically. Immediate medical attention is required.
Antidotes	No antidotes have been listed for this mixture.
Contraindications	No contraindications have been listed for this mixture.

SECTION 5: FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Carbon dioxide, alcohol foam, dry chemical, water spray.

Specific Hazards arising for Combustion of the Product

May form formaldehyde gas, carbon oxides, hydrogen, formic acid and various Hydrocarbons.

Special Protective Actions for Fire-Fighters

Wear self-contained breathing apparatus and complete personal protective equipment.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions Avoid breathing vapour. Ventilate area. Eliminate ignition sources.
Protective Equipment

Respiratory protection: Use NIOSH approved respiratory equipment.
Protective Gloves: PVC, nitrile or neoprene rubber should be worn to prevent prolonged or repeated skin contact.
Eye Protection: Chemical safety goggles should be worn to prevent eye contact.
Other Protective equipment: Eye wash fountain and safety shower must be available in areas where this material is used.
Emergency Procedures Ventilate area using local exhaust ventilation to control airborne vapours. Eliminate ignition sources.



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Environmental Precautions This product is listed as not harmful to aquatic life. Please refer to Section 12 for complete ecological effects.

If large amounts are spilled please notify your local environmental agency.

Methods and Materials for:

Containment Neutralize with diluted solutions of ammonia. Contain spill with inert absorbent material.

Clean Up Review federal, provincial or state, and local government requirements prior to disposal. For large quantities, if recycling or reclaiming is not possible, use a commercial waste disposal service. Please refer to Section 13 for complete disposal procedures.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Specific Avoid contact with eyes, skin and clothing. Avoid breathing vapours. Wash thoroughly with soap and water after handling. Please refer to Section 6 for details on appropriate PPE.

General Hygiene Considerations Eating, drinking, smoking and applying cosmetics in work areas is prohibited. Remove all contaminated clothing and PPE before entering eating areas.

Precautions for Safe Storage

Store in a cool, dry, ventilated area. Keep away from heat, sparks and flames. Do not store below 35°F (1°C) or above 105°F (40°C).

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Table 8.1: Exposure Limits

Chemical Name	TLV-C (ACGIH)	TLV-TWA (ACGIH)	TLV-TWA (OSHA)	TLV-STEL (OSHA)
Formaldehyde	0.3ppm	0.75ppm	Not Available	2.0ppm
Methanol	250ppm	Not Available	200ppm	Not Available

Exposure Controls

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Keep container tightly closed. Do not handle until all safety precautions have been read and understood. Ensure all personnel wear appropriate PPE at all times when handling this product. Contaminated work clothing should not be allowed out of the workplace.

Engineered Protection Measures

Use local exhaust ventilators to control airborne vapours.

Individual Protection Measures

General hygiene measures and appropriate PPE should be used in conjunction with the afore mentioned engineered measures of protection. Also see Section 5 for additional protection measures in case of fire.

Eye/Face Protection	Chemical safety goggles should be worn to prevent eye contact.
Skin Protection	PVC, nitrile or neoprene rubber gloves should be worn to prevent prolonged or repeated skin contact.
Respiratory Protection	NIOSH approved respiratory equipment should be worn to prevent inhalation of vapours.
Thermal Hazards	This mixture does not present a thermal hazard under normal use.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on Physical and Chemical Properties of Mixture

Appearance	Red liquid
Odour	Pungent irritating odour
Odour Threshold	0.05-0.5 (Formaldehyde)
pH	7.0-7.5
Melting/Freezing Point	Not Available
Boiling Point and Range	62.7°C - 100°C
Flash Point	62.2°C
Evaporation Rate(BuAe=1)	<1
Flammability (Solid, Gas)	Not Available
Upper Explosive Limit	73%
Lower Explosive Limit	6%
Vapour Pressure	18mmHg
Vapour Density (air=1)	>1
Relative Density	Not Available
Solubility	100%
Partition Coefficient: n-octanol/water	Not Available
Auto-Ignition Temp	Not Available
Decomposition Temp	Not Available
Viscosity	Not Available

SECTION 10: STABILITY AND REACTIVITY

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Reactivity	Not normally reactive
Chemical Stability	Stable
Possibility of Hazardous Reactions	Hazardous polymerization does not occur.
Conditions to Avoid	There are no specific conditions to avoid during normal use of this product.
Incompatibility Materials	Strong alkali and oxidizing agents. Hydrochloric acid.
Hazardous Decomposition Products	Carbon dioxide, carbon monoxide, hydrogen and formaldehyde gas. Reaction with hydrochloric acid may form bis-chloromethyl ether which is a suspected human carcinogen according to ACGIH and carcinogenic to humans according to IARC

SECTION 11 : TOXICOLOGICAL INFORMATION

Toxicological Data of Ingredients

Acute Toxicity	This substance is classified as a Toxic Material – Toxic if Inhaled, Toxic if Swallowed, according to GHS Regulation, Hazard Category 3. This substance is classified as a Harmful Material – Harmful in contact with Skin according to GHS Regulation, Hazard Category 4.
Skin Corrosion/Irritation	This substance is classified as a Skin Irritant – Causes Skin Irritation according to GHS Regulation, Hazard Category 2.
Serious Eye Damage/Irritation	This substance is classified as a Serious Eye Irritant – Causes Serious Eye Irritation according to GHS Regulation, Hazard Category 2A.
Respiratory or Skin Sensitization	This substance is classified as a Skin Sensitizer – May Cause an Allergic Skin Reaction according to GHS Regulation, Hazard Category 1.
Germ Cell Mutagenicity	Not classified as a germ cell mutagenic hazard.
Carcinogenicity	This substance is categorized as a Suspected Carcinogen – Suspected of Causing Cancer according to GHS Regulations, Hazard Category 2. Formaldehyde is listed by (IARC) as probably carcinogenic to humans, on the basis of animal evidence, but human data is inadequate (group 2A). Listed by the National Toxicology Program as reasonably anticipated to be

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a carcinogen. Listed by the ACGIH as a suspected Human carcinogen. OSHA in its Formaldehyde standard considers formaldehyde a carcinogen.

Reproductive Toxicity

Not classified as a reproductive hazard.

STOT – Single Exposure

This substance is classified as a possible hazard for target organ toxicity in a single exposure – May Cause Damage to Organs according to GHS Regulations, Hazard category 2.

STOT – Repeated Exposure

Not classified as a hazard for target organ toxicity in repeated exposure.

Aspiration Hazard

Not classified as an aspiration hazard.

Routes of Exposure

Inhalation, Eye Contact, Skin Contact, Ingestion

Effects of Acute Exposure via:

Inhalation

Irritation of upper respiratory tract, inflammation of eyelids, visual impairment, bronchitis, broncho-pneumonia, death. Methanol vapours can cause dizziness, fatigue, nausea and intestinal disturbance.

Eye Contact

Vapours can cause eye irritation; liquid can cause severe eye burns including permanent eye damage.

Skin Contact

Hardening or tanning of skin, irritation of skin, cracking of skin, dermatitis. Prolonged or repeated skin contact can result in skin sensitization

Ingestion

Severe abdominal pain, collapse, unconsciousness, temporary visual impairment, permanent visual impairment, death

Chronic effects

Formaldehyde may potentially cause carcinogenic effects. See above information for details.

Table 11.1: Toxicity Data for Hazardous Ingredients

Chemical Name	LC ₅₀ (Rat.lhl)	LD ₅₀ (Rat.oral)	LD ₅₀ (Rbt.skin)
Formaldehyde	250ppm	100mg/kg	270mg/kg
Methanol	64,000ppm/4hr	13000mg/kg	20,000mg/kg

Interactive Effects

No interactive effects are listed for this mixture.

SECTION 12: ECOLOGICAL INFORMATION



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Ecotoxicological Properties

Acute Aquatic Toxicity	This product is classified as not toxic to aquatic life according to GHS regulations. This mixture is not considered ecologically toxic (PAN Pesticide Database).
Chronic Aquatic Toxicity	This product is classified as not toxic to aquatic life according to GHS regulations.
Persistence and Degradability	This product is considered to be readily biodegradable.
Bioaccumulative Potential	This product is not considered to be bioaccumulative.
Mobility in Soil	This product is considered to have low soil mobility.
Other Adverse Effects	Methanol levels over 0.1% may be toxic to sewage bacteria.

SECTION 13: DISPOSAL CONSIDERATIONS

Please refer to Sections 7 and 8 for proper storage, handling and personal protective measures.

Disposal Containers and Methods

Product Disposal	Avoid disposal of this product via sewage systems. Review federal, provincial or state, and local government requirements prior to disposal. Disposal by controlled incineration or by secure land fill may be acceptable.
Container Disposal	Empty containers may contain hazardous residue. Return to supplier for reuse if possible. Never weld, cut or grind empty containers. If disposing of containers, ensure they are well rinsed with water, then disposed of at an authorised landfill. After cleaning, all existing labels should be removed.

Properties affecting Disposal Options

Methanol levels over 0.1% may be toxic to sewage bacteria.

Special Precautions for Incinerators or Landfills

No special precautions for incinerators or landfills are listed for this product. See Section 12 for complete ecological information.

SECTION 14: TRANSPORT INFORMATION

Regulation	UN Number	Description	Class	Group	Symbols
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TDG ¹	UN2209	Formaldehyde solutions with not less than 25% formaldehyde	8	III	
DOT ^{1,2}	UN2209	Formaldehyde solutions with not less than 25% formaldehyde	8	III	

¹ This material may be shipped as Limited Quantity when in containers with a volume no larger than 5.0L and in packages not exceeding 30 kg gross mass.

² See 49 CFR Section 173.27 and 175.75 for complete disclosure of quantity limitations.

SECTION 15: REGULATORY INFORMATION

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

This product has been classified in accordance with the hazard criteria of the CPR and the SDS contains all of the information required by the CPR.

US Federal Information:

TSCA: All listed ingredients appear on the TSCA inventory.

CERCLA Reportable Quantity (RQ) (40 CFR 117.302): formaldehyde (100 lbs / 45.4 kg); Methanol (5000 lbs / 2270 kg).

ECPRA (SARA TITLE III):

Section 302, Extremely Hazardous Substances, 40 CFR 355: This product contains an Extremely Hazardous Substance under SARA Section 302. Contains: formaldehyde.

Sections 311 and 312, 40 CFR 370 Hazard Classes: Fire Hazard; Health Hazard; Chronic Health Hazard. See section 302 SARA Title III and 40 CFR 355 Appendix A & B for additional information regarding threshold quantities for the reporting of hazardous chemicals.

Section 313, Toxic Chemicals Notification, 40 CFR 372: This product may be subject to SARA notification requirements, since it contains Toxic Chemical constituents above their de minimus concentrations. This product contains: formaldehyde; Methanol.



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US State Right to Know Laws:

California Proposition 65: This product contains a chemical known to the State of California to cause cancer. Contains: formaldehyde.

Other U.S. State "Right to Know" Lists

The following chemicals are specifically listed by individual States: formaldehyde (CA, MA, MN, NJ, PA, RI); Methanol (CA, MA, MN, NJ, PA, RI); Propylene glycol (MN, NJ, PA, RI); Sodium tetraborate (CA, MA, MN, NJ, PA, RI).

SECTION 16: OTHER INFORMATION

The OSHA Hazard Communication Standard (HCS) is now aligned with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Legend of Abbreviations

GHS – Globally Harmonized System of Classification and Labelling of Chemicals
 SDS – Safety Data Sheet
 OECD – The Organisation for Economic Co-operation and Development
 CAS – Chemical Abstract Service
 EC – European Commission
 TLV – Threshold Limit Value
 TLV-C – Threshold Limit Value – Ceiling Limit
 TWA – Time Weighted Average
 STEL – Short-term Exposure Limits
 ACGIH – American Conference of Governmental Industrial Hygienists 1993-1994
 OSHA – Occupational Safety and Health Administration
 STOT – Specific Target Organ Toxicity
 LC – Lethal Concentration
 LD – Lethal Dose
 Ihl - Inhalation
 Rbt - Rabbit
 UN – United Nations
 TDG – Recommendations on the Transport of Dangerous Goods, published by the UN
 PPE – Personal Protective Equipment
 NIOSH - The National Institute for Occupational Safety and Health
 IARC – International Agency for Research on Cancer
 WHMIS – Workplace Hazardous Materials Information System
 PAN – Pesticide Action Network
 USGS – United States Geological Survey
 CPR – Canadian Controlled Products Regulations
 ECPRA - Emergency Planning and Community Right-to-Know Act
 CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act



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TSCA – Toxic Substances Control Act
SARA – Superfund Amendments and Reauthorization Act
DOT – U.S. Department of Transportation
HCS – Hazard Communication Standard

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This Safety Data Sheet was prepared by H.S. Eckels & Company (Canada) Ltd using information provided by the Globally Harmonized System of Classification and Labelling Chemicals – Fifth Revised Edition 2013.

The information in the Safety Data Sheet is put forth to guide persons in safe conduct when exposed to Dyno-Ultra MAX.

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The data in this SDS does not apply to the exposure in any other process than those mentioned in Section 1. The data in this SDS does not apply to the exposure to any product other than Dyno-Ultra MAX. This Safety Data Sheet may not be changed, or altered in any way without the expressed permission of H.S. Eckels & Company (Canada) Ltd.

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