



Section 1 – Product and Company Identification

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Trade Name: LEAF Arterial

Product Code: 03044

Product Type: Embalming Chemical - Contains Formaldehyde 20%

Section 2 – Hazards Identification

Form: Liquid
OSHA/HCS status

Odor: Pungent

This contains material considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Emergency Overview Warning



Skin Sensitisation Category 1
May Cause allergic skin reaction
Avoid Breathing dust/fumes/gas/mist/vapours/spray
Contaminated work clothing should not be allowed out of the workplace.
Wear face protection. Specify type of equipment
If on skin; wash with plenty of soap and water
If skin irritation occurs: Get medical advice/attention
Wash contaminated clothing before reuse.
Dispose of container/contents in accordance with local, state and federal regulations.

Potential Health Effects

Inhalation: Harmful if inhaled. May cause irritation to the nose, throat and respiratory system with effects including: Dizziness, headache and possible confusion.

Ingestion Harmful if swallowed. May cause irritation to mouth, throat and stomach with effects including mucous build up, irritation to the tongue and lips and pains in the stomach.

Skin Harmful in contact with skin. Irritation to skin. May cause sensitization by skin contact.

Eyes May cause irritation to the eyes, with effects including: tearing, pain stinging and blurred vision.

Potential chronic health effects

Chronic effects Contains material that can cause target organ damage. Some reports suggest that formaldehyde may cause respiratory sensitization, such as asthma, and that pre-existing respiratory and skin disorders may be aggravated by exposure. May be fatal or cause blindness if swallowed.

Carcinogenicity Contains material which can cause cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity No known significant effects or critical hazards.

Teratogenicity No known significant effects or critical hazards.

Developmental effects Contains material which may cause developmental abnormalities, based on animal data.

Fertility effects Contains material which may impair female fertility, based on animal data.

Target organs Contains material which causes damage to the following organs: mucous membranes, gastrointestinal tract, upper respiratory tract, skin, eyes, central nervous system (CNS), Review Section 2 and 11 for any additional assessments.

Over-exposure signs/symptoms

Inhalation Adverse symptoms may include the following: nausea or vomiting, respiratory tract irritation, coughing, headache, drowsiness/fatigue, dizziness/vertigo, wheezing and breathing difficulties, unconsciousness, and asthma.

Ingestion Adverse symptoms may include the following: stomach pains, nausea or vomiting, dizziness/vertigo, drowsiness/fatigue, headache, unconsciousness, convulsion.

Skin Adverse symptoms may include the following: irritation, redness.

Eyes Adverse symptoms may include the following: pain, watering, redness.

Medical conditions aggravated by overexposure

Pre-existing respiratory and skin disorders and disorders involving any other target organs mentions in this MSDS as being at risk may be aggravated by over-exposure to this product.

See section 11 for more detailed information on health effects and symptoms.

Section 3 – Composition/Information on Ingredients

<u>Ingredient Name:</u>	<u>CAS number</u>	<u>WT %</u>
Formaldehyde	50-00-0	20.0
Methanol (Methyl Alcohol)	67-56-1	2.5

Section 4 – First Aid Measures

Inhalation Move exposed person to fresh air. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately. In the event of any complaints or symptoms, avoid further exposure.

Ingestion Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Skin contact Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Chemical burns must be treated promptly by a physician. Get medical attention immediately.

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

Notes to physician No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

See section 11 for more detailed information on health effects and symptoms.

Section 5 – Fire-fighting measures

Flammability of the product	Combustible Liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.
<u>Extinguishing media</u>	
Suitable	Use dry chemical, CO2, water spray, fog or foam.
Non-suitable	Do not use water jet.
Special exposure hazards	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
Hazardous combustion products	Decomposition products may include the following material: carbon dioxide.
Special protective equipment for fire-fighters	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with full face-piece operated in positive pressure mode.

Section 6 – Accidental Release Measures

Personal precautions	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8). Do not breathe dust, vapour, mist or gas.
Environmental Precautions	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Large spill	Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.
Small spill	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.

Section 7 – Handling & Storage

Handling

Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Persons with a history of skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Avoid exposure during pregnancy. Do not get in eyes or on skin or clothing. Do not ingest. Use only with adequately ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in original container or an approved alternative made from a compatible material kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Follow US NFPA 30, "Flammable & Combustible Liquids Code", or other national, state and local codes on safe handling of flammable liquids. Train workers in the recognition and prevention of hazards associated with the storage, handling and transfer of flammable liquids in the plant. Empty containers retain product residue and can be hazardous. Do not reuse container. Do not breathe dust, vapor, mist or gas.

Storage

Store in an area protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been used must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

Section 8 – Exposure Control/Personal Protection

<u>Ingredient Name:</u>	<u>Occupational exposure limits</u>		
	AGCIH TLV Ceiling	OSHA PEL 8-hr TWA	OSHA PEL STEL (15 mins)
Formaldehyde solution	0.75 ppm	0.37 mg/m ³ 0.3 ppm	2 ppm
Methanol	AGCIH TLV TWA 200 ppm	OSHA PEL 8-hr TWA 200 ppm	OSHA PEL STEL (15 mins) 250 ppm

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower exposure limits. Use explosion-proof ventilation equipment.

Hygiene measures Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Respiratory Use only in well-ventilated area. If exposure levels are likely to exceed the OEL then suitable respiratory protection will be required.

Hands Wear suitable chemical resistant gloves recommended for use with formaldehyde and methanol. Nitrile and natural rubber gloves may be suitable, but glove manufacturers' specifications should always be checked first. PVA gloves are not suitable. Change

gloves in accordance with manufacturer recommendations. If gloves are damaged during use, remove immediately and wash hands before replacing with new gloves.

Eyes	Wear suitable splash proof goggles (for example meeting standard BS EN166 3), when handling this product.
Skin	Aprons or coveralls are recommended. These should be changed after use or if contaminated. Wash before re-use.
Environmental exposure Controls	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Section 9 – Physical & Chemical Properties

Appearance	Pink Liquid
Flash point	94.4 °C (Tag Closed Cup)
Lower flammable limit	7.0%
Upper flammable limit	73.0%
Odor	Pungent
Boiling point	206 °F (at 760 mm Hg)
Relative density	1.048 - 01.50
Vapour pressure	67.0 mm Hg
Vapour density	>1
Evaporation rate	<1 (Butyl acetate = 1)
Water solubility	Miscible

Section 10 – Stability & Reactivity

Stability	Hazardous polymerization will may occur under certain conditions of storage or use.
Conditions to avoid	Avoid all possible sources of ignition (spark or flame). Avoid exposure.
Materials to avoid	Reactive or incompatible with the following materials: Caustic and strong oxidizing agents.
Hazardous Decomposition Products	Decomposition products may include the following materials: carbon monoxide, carbon dioxide, oxides of nitrogen. Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11- Toxicological Information

Acute toxicity

Ingredient Name:

Formaldehyde	LD50 Oral	Rat	800 mg/kg
Soultion	LC50 Inhalation	Rat	0.0578 mg/l 250 ppm/2h
	LD50 Dermal	Rabbit	270 mg/kg
Methanol	LDLo Oral	Human	143 mg/kg
	LdLo Dermal	Monkey	393 mg/kg

Other Toxicological Information

Carcinogenicity

Conclusion/Summary The National Toxicology Program (NTP) has listed formaldehyde as “reasonably anticipated to be a human carcinogen”. The international Agency for Research on Cancer (AERC) has concluded that formaldehyde is “carcinogenic to humans”. U.S. OSHA regulates formaldehyde as a potential human carcinogen. See the OSHA Formaldehyde Workplace Standard at 29 CFR 1920.1048 (the “OSHA Standard”). Safe handling and use instructions are provided in this MSDS and in the OSHA Standard. OSHA has identified 0.5 ppm, calculated as an eight-hour time-weighted average (“TWA”) concentration, as the “Action Level”. Please review and understand

the guidance contained in this MSDS, and refer to the OSHA Standard for regulatory requirements that might be applicable to your operation and use. Many studies and other evaluations have been performed concerning formaldehyde's potential to cause cancer. To review some of these studies and for further information go to www.osha.gov/SLTC/formaldehyde; <http://monographs.iarc.fr>; <http://ntp-server.neihs.nih.gov>; <http://epa.gov/iris/subst/0419.htm>; and other authoritative websites.

Classification

Ingredient Name

Formaldehyde	ACGIH	Suspected human carcinogen
	IARC	IARC Group 1, carcinogenic to humans
	NTP	Possible
	OSHA	OSHA cancer potential
	EU	Limited evidence of a carcinogenic effect
Methanol	ACGIH	Not Classified
	IARC	Not Classified
	NTP	Not Classified
	OSHA	Not Classified
	EU	Not Classified

Section 12 – Ecological Information

Environmental effects No known significant effects or critical hazards.

Aquatic Eco toxicity

Ingredient Name

Formaldehyde	Fresh water	Acute LC50 1.41 mg/l/4 d	Rainbow trout, donaldson trout
	Fresh water	Acute LC50 1.51 mg/l/4 d	Bluegill
Methanol	Fresh Water	Acute EC 50 13,000 ,g/l/4/d	Rainbow trout, donadson trout
Other adverse effects	No known significant effects or critical hazards.		

Section 13 – Disposal Considerations

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

Section 14 – Transportation Information

The data in this section is for information only and may not be specific to your package size or mode of transport. You will need to apply the appropriate regulation to properly classify your shipment.

International transport regulations

Regulatory Information

UN number None allocated. Formaldehyde solution, non flammable, with less than 25% Formaldehyde is not restricted by the A.D.G.C. for transport by road and rail. (p127 6th edition)

Proper shipping name:	None allocated
Transport hazard class:	None allocated
Packaging Group:	None allocated
Environmental Hazard:	Not available
Special Precautions for users:	Not available
Additional information:	Not available

Section 15 – Regulatory Information

US regulations No data available

Section 16 – Other Information

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