

Section 1 - Identification Of Chemical Product And Company

Statement of Hazardous Nature

This product is classified as: Hazardous according to the criteria of ASCC Australia.

Dangerous according to the Australian Dangerous Goods (ADG) Code.

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Substance: Solution of glutaraldehyde, methanol and other ingredients.
Trade Name: Edemaco
Product Use: Undertaker's product - used as an arterial co-injection product.
Creation Date: September, 2002
Revision Date: February, 2008

Section 2 – Composition/Information on Ingredients

Ingredients	CAS No	Conc,%	TWA (mg/m ³)	STEL (mg/m ³)
Glutaraldehyde	111-30-8	14-16	0.41	Peak
Methanol	67-56-1	15	262	328
Other non hazardous ingredients	secret	to 100	not set	not set

This is a commercial product whose exact ratio of components may vary slightly. Minor quantities of other non hazardous ingredients are also possible.

The TWA exposure value is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. The STEL (Short Term Exposure Limit) is an exposure value that should not be exceeded for more than 15 minutes and should not be repeated for more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The term "peak" is used when the TWA limit, because of the rapid action of the substance, should never be exceeded, even briefly.

Section 3 - Hazards Identification

Risk Phrases: R10, R34, R20/22, R36/38, R42/43. Flammable. Causes burns. Harmful by inhalation and if swallowed. Irritating to eyes and skin. May cause sensitisation by inhalation and skin contact.

Safety Phrases: S16, S20, S28, S38, S44, S24/25. Keep away from sources of ignition - No smoking. When using, do not eat or drink. After contact with skin, wash immediately with plenty of soap and water. In case of insufficient ventilation, wear suitable respiratory equipment. If you feel unwell, contact a doctor or Poisons Information Centre immediately (show the label where possible). Avoid contact with skin and eyes.

SUSDP Classification: S6

ADG Classification: Class 3 (FLAMMABLE LIQUID, N.O.S.)

UN Number: 1993

Emergency Overview

Physical Description & colour: Clear, orange-rose coloured slightly viscous liquid.

Odour: Mild, perfumed odour.

Major Health Hazards: Occupational asthma and/or rhinitis have been indicated in a number of workers exposed to glutaraldehyde. The results of more recent assays have generally shown that glutaraldehyde is mutagenic in vitro. In vivo tests to date have been negative. Consequently, glutaraldehyde does not meet the criteria for classification as a mutagen.

Potential Health Effects

Excessive exposure to methanol may cause permanent blindness.

Inhalation

Short term exposure: Classified as a potential sensitiser by inhalation. Exposure to a sensitiser, once sensitisation has occurred, may manifest itself as an asthmatic condition, and in some individuals this reaction can be extremely severe.

Long Term exposure: No data for health effects associated with long term inhalation.

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Skin Contact:

Short term exposure: Classified as a potential sensitiser by skin contact. Exposure to a sensitiser, once sensitisation has occurred, may manifest itself as an asthmatic condition, and in some individuals this reaction can be extremely severe. In addition product is a skin irritant. Symptoms may include itchiness and reddening of contacted skin. Other symptoms may also become evident, but all should disappear once exposure has ceased.

Long Term exposure: No data for health effects associated with long term skin exposure.

Eye Contact:

Short term exposure: Available data shows that this product is not harmful. However product is an eye irritant. Symptoms may include stinging and reddening of eyes and watering which may become copious. Other symptoms may also become evident. If exposure is brief, symptoms should disappear once exposure has ceased. However, lengthy exposure or delayed treatment may cause permanent damage.

Long Term exposure: No data for health effects associated with long term eye exposure.

Ingestion:

Short term exposure: Available data shows that this product is harmful, but symptoms are not available. This product is unlikely to cause any irritation problems in the short or long term.

Long Term exposure: No data for health effects associated with long term ingestion.

Carcinogen Status:

ASCC: No significant ingredient is classified as carcinogenic by ASCC.

NTP: No significant ingredient is classified as carcinogenic by NTP.

IARC: No significant ingredient is classified as carcinogenic by IARC.

Section 4 - First Aid Measures

General Information:

You should call The Poisons Information Centre if you feel that you may have been poisoned, burned or irritated by this product. The number is 13 1126 from anywhere in Australia and is available at all times. Have this MSDS with you when you call.

Inhalation: If symptoms of poisoning become evident, contact a Poisons Information Centre, or call a doctor at once. Remove source of contamination or move victim to fresh air. If breathing is difficult, oxygen may be beneficial if administered by trained personnel, preferably on a doctor's advice. DO NOT allow victim to move about unnecessarily. Symptoms of pulmonary oedema can be delayed up to 48 hours after exposure.

Skin Contact: If poisoning occurs, contact a Poisons Information Centre, or call a doctor at once. Quickly and gently, blot or brush away excess chemical. Wash gently and thoroughly with water (use non-abrasive soap if necessary) for 20 minutes or until chemical is removed. Under running water, remove contaminated clothing, shoes and leather goods (e.g. watchbands and belts). If irritation persists, repeat flushing and obtain medical advice. Completely decontaminate clothing, shoes and leather goods before reuse or discard.

Eye Contact: Quickly and gently blot or brush away product. Immediately flush the contaminated eye(s) with lukewarm, gently flowing water until the product is removed or until a few minutes after irritation has ceased, while holding the eyelid(s) open. Take care not to rinse contaminated water into the unaffected eye or onto the face.

Ingestion: If swallowed, do NOT induce vomiting. Wash mouth with water and contact a Poisons Information Centre, or call a doctor.

Section 5 – Fire Fighting Measures

Fire and Explosion Hazards: This product is classified as a C1 combustible product. There is a moderate risk of an explosion from this product if commercial quantities are involved in a fire. Firefighters should take care and appropriate precautions. Any explosion will likely spread the fire to surrounding materials. Water spray may be used to cool drums involved in a fire, reducing the chances of an explosion.

Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.

Extinguishing Media: Alcohol resistant foam is the preferred firefighting medium but, if it is not available, normal foam can be used. Try to contain spills, minimise spillage entering drains or water courses.

Fire Fighting: If a significant quantity of this product is involved in a fire, call the fire brigade. There is a danger of a violent reaction or explosion if significant quantities of this product are involved in a fire. Recommended personal protective equipment is full fire kit and breathing apparatus.

Flash point: 31-33 °C

Upper Flammability Limit: No data.

Lower Flammability Limit: No data.

Autoignition temperature: No data.

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Flammability Class: C1

Section 6 – Accidental Release Measures

Accidental release: In the event of a major spill, prevent spillage from entering drains or water courses. Immediately call the Fire Brigade. Wear full protective clothing including face mask, face shield and gauntlets. All skin areas should be covered. See above under Personal Protection regarding Australian Standards relating to personal protective equipment. Suitable materials for protective clothing include rubber, PVC. Stop leak if safe to do so, and contain spill. Absorb onto sand, vermiculite or other suitable absorbent material. If spill is too large or if absorbent material is not available, try to create a dike to stop material spreading or going into drains or waterways. Avoid using sawdust or other combustible material. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. Recycle containers wherever possible after careful cleaning. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. This material may be suitable for approved landfill. Ensure legality of disposal by consulting regulations prior to disposal. Thoroughly launder protective clothing before storage or re-use. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

Section 7 – Handling and Storage

Handling: Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Check Section 8 of this MSDS for details of personal protective measures, and make sure that those measures are followed. The measures detailed below under "Storage" should be followed during handling in order to minimise risks to persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10.

Storage: This product is a Scheduled Poison. Observe all relevant regulations regarding sale, transport and storage of this class of poison. Store in a cool, well ventilated area, and make sure that surrounding electrical devices and switches are suitable. Check containers periodically for leaks. Containers should be kept closed in order to minimise contamination and possible evaporation. Make sure that the product does not come into contact with substances listed under "Materials to avoid" in Section 10. If you keep more than 1000L of flammable liquids of Packaging Group III, you probably require a license to do so. If you have any doubts, we suggest you contact your licensing authority in order to clarify your obligations. Check packaging - there may be further storage instructions on the label.

Section 8 Exposure Controls and Personal Protection

The following Australian Standards will provide general advice regarding safety clothing and equipment:

Respiratory equipment: **AS/NZS 1715**, Protective Gloves: **AS 2161**, Industrial Clothing: **AS2919**, Industrial Eye Protection: **AS1336** and **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**.

Exposure Limits	TWA (mg/m ³)	STEL (mg/m ³)
Glutaraldehyde	0.41	Peak
Methanol	262	328

Ventilation: This product should only be used in a well ventilated area. If natural ventilation is inadequate, use of a fan is suggested.

Eye Protection: Protective glasses or goggles should be worn when this product is being used. Failure to protect your eyes may cause them harm. Emergency eye wash facilities are also recommended in an area close to where this product is being used.

Skin Protection: Prevent skin contact by wearing impervious gloves, clothes and, preferably, apron. Make sure that all skin areas are covered. See below for suitable material types.

Protective Material Types: We suggest that protective clothing be made from the following materials: rubber, PVC.

Respirator: Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned above.

Eyebaths or eyewash stations and safety deluge showers should be provided near to where this product is being used.

Section 9 - Physical and Chemical Properties:

Physical Description & colour: Clear, orange-rose coloured slightly viscous liquid.

Odour: Mild, perfumed odour.

Boiling Point: 82-84°C at 100kPa

Freezing/Melting Point: No specific data. Liquid at normal temperatures.

Volatiles: 85%

Vapour Pressure: No data.

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Vapour Density:	No data.
Specific Gravity:	1.05-1.06
Water Solubility:	Completely soluble.
pH:	No data.
Volatility:	No data.
Odour Threshold:	No data.
Evaporation Rate:	No data.
Coeff Oil/water distribution:	No data
Autoignition temp:	No data.

Section 10 – Stability and Reactivity

Reactivity: This product is unlikely to react or decompose under normal storage conditions. However, if you have any doubts, contact the supplier for advice on shelf life properties.

Conditions to Avoid: This product should be kept in a cool place, preferably below 30°C. Keep away from sources of sparks or ignition. Handle and open containers carefully.

Incompatibilities: oxidising agents.

Fire Decomposition: Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Water. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death.

Polymerisation: This product is unlikely to undergo polymerisation processes.

Section 11 – Toxicological Information

Target Organs: This product may attack central nervous system, kidneys, liver and skin.

Human evidence has shown that glutaraldehyde is an irritant to the skin, eyes and respiratory system, with the effects consistent with those revealed in animal testing.

Many cases of dermatitis have been reported for workers exposed to glutaraldehyde solutions, usually 2% or higher. Facial dermatitis has resulted from the use of glutaraldehyde in spray form.

Irritation of the nose and throat and general tightness of the chest have been experienced by workers exposed to glutaraldehyde vapours. In a study of Swedish hospital workers, nose and throat irritation was experienced at vapour concentrations below 0.2 ppm.

Human evidence indicates that skin and respiratory irritant effects are exacerbated on repeated exposure to glutaraldehyde. Human evidence and patch testing have shown that glutaraldehyde is a skin sensitiser.

Photosensitisation testing on volunteers did not produce a phototoxic or photoallergic response.

A number of reports of occupational asthma and/or rhinitis in workers exposed to glutaraldehyde have produced concern that glutaraldehyde may be a respiratory sensitiser. In the absence of adequate case reporting or an identified immune mechanism, it is difficult to say definitively that glutaraldehyde is a respiratory sensitiser, and there is debate on whether the symptoms are due to an irritant or an allergic respiratory response. However, in the United Kingdom, glutaraldehyde has been added to the indicative list of respiratory sensitisers. Further studies are required into the mechanism and cause of occupational asthma in workers exposed to glutaraldehyde.

Limited epidemiological data is available on the long-term effects of glutaraldehyde, and only the irritant and skin sensitising effects of glutaraldehyde have been confirmed. There was no evidence of adverse reproductive health effects on exposure to glutaraldehyde, consistent with the results of animal testing. A mortality study did not reveal any increase incidence of cancer deaths.

Classification of Hazardous Ingredients

Ingredient	Risk Phrases
Glutaraldehyde	≥10%Conc≤25%: C; R34; R20/22; R42/43
Methanol	≥3%Conc≤20%: Xn; R20/22

Section 12 – Ecological Information

Five-day biological oxygen demand and aquatic metabolism studies indicate that glutaraldehyde degrades readily. Accordingly, significant degradation is expected during passage through sewage treatment works. Reaction with proteins present in sewage effluent will also remove significant amounts from aqueous waste streams. Any glutaraldehyde that may enter receiving waters is likely to be rapidly diluted and undergo further biodegradation. Small amounts of glutaraldehyde will volatilise to the atmosphere.

Environmental Effects

Glutaraldehyde loses biocidal activity at below 10 mg/L. Accordingly, impacts on sewage microbes are not expected provided that levels in sewage treatment works remain below this limit. However, glutaraldehyde must not be discharged into septic tanks as it may render essential bacteria inactive.

Test reports indicate that glutaraldehyde is slightly to practically non-toxic to birds, slightly toxic to crabs, shrimp and sewage micro-organisms, slightly to moderately toxic to fish and *Daphnia*, moderately toxic to oyster larvae, and moderately to highly toxic to algae.

Section 13 – Disposal Considerations

Disposal: Containers should be emptied as completely as practical before disposal. If possible, recycle containers either in-house or send to recycle company. If this is not practical, send to a commercial waste disposal site. Please do NOT dispose into sewers or waterways.

Section 14 – Transport Information

ADG Code: 1993, FLAMMABLE LIQUID, N.O.S.

Hazchem Code: 3Y

Special Provisions: 223, 274

Limited quantities: ADG 7 specifies a Limited Quantity value of 5 L for this class of product.

Dangerous Goods Class: Class 3, Flammable liquids.

Packaging Group: III

Packaging Method: P001, IBC03, LP01

Class 3 Flammable Liquids shall not be loaded in the same vehicle or packed in the same freight container with Classes 1 (Explosives), 2.1 (Flammable Gases where flammable liquids and flammable gases are both in bulk), 2.3 (Toxic Gases), 4.2 (Spontaneously Combustible Substances), 5.1 (Oxidising Agents), 5.2 (Organic Peroxides), 6 (Toxic Substances, except Flammable Liquid is nitromethane), and 7 (Radioactive Substances). They may however be loaded in the same vehicle or packed in the same freight container with Classes 2.1 (Flammable Gases except where the Flammable Liquids and Flammable Gases are in bulk), 2.2 (Non-Flammable Non-Toxic Gases), 4.1 (Flammable Solids), 4.3 (Dangerous When Wet Substances), 6 (Toxic Substances, except where Flammable Liquid is nitromethane), 8 (Corrosive Substances), 9 (Miscellaneous Dangerous Goods), Foodstuffs or foodstuff empties.

Section 15 – Regulatory Information

AICS: All of the significant ingredients in this formulation are to be found in the public AICS Database.

Section 16 – Other Information

This MSDS contains only safety-related information. For other data see product literature.

Acronyms:

ADG Code	Australian Code for the Transport of Dangerous Goods by Road and Rail, 7th Edition
AICS	Australian Inventory of Chemical Substances
CAS number	Chemical Abstracts Service Registry Number
Hazchem Number	Emergency action code of numbers and letters that provide information to emergency services especially firefighters
IARC	International Agency for Research on Cancer
ASCC	Office of the Australian Safety and Compensation Council
NOS	Not otherwise specified
NTP	National Toxicology Program (USA)
R-Phrase	Risk Phrase
SUSDP	Standard for the Uniform Scheduling of Drugs & Poisons
UN Number	United Nations Number

THIS MSDS SUMMARISES OUR BEST KNOWLEDGE OF THE HEALTH AND SAFETY HAZARD INFORMATION OF THE PRODUCT AND HOW TO SAFELY HANDLE AND USE THE PRODUCT IN THE WORKPLACE. EACH USER MUST REVIEW THIS MSDS IN THE CONTEXT OF HOW THE PRODUCT WILL BE HANDLED AND USED IN THE WORKPLACE.

IF CLARIFICATION OR FURTHER INFORMATION IS NEEDED TO ENSURE THAT AN APPROPRIATE RISK ASSESSMENT CAN BE MADE, THE USER SHOULD CONTACT THIS COMPANY SO WE CAN ATTEMPT TO OBTAIN ADDITIONAL INFORMATION FROM OUR SUPPLIERS. OUR RESPONSIBILITY FOR PRODUCTS SOLD IS SUBJECT TO OUR STANDARD TERMS AND CONDITIONS, A COPY OF WHICH IS SENT TO OUR CUSTOMERS AND IS ALSO AVAILABLE ON REQUEST.

Please read all labels carefully before using product.

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