Material Safety Data Sheet

Carosafe®

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Carolina Biological Supply Company
2700 York Rd | Burlington, NC 27215 • to order: 800.334.5551 • for support: 800.227.1150
CAROLINA
www.carolina.com

Section 1 - Product Description

Product Name: Carosafe®
Product Code(s): 85-3341, 85-3343, 85-3345
Size: 4L, 20L, 4 x 20L
Chemical Name: N/A
CAS Number: See Section 3
Formula: See Section 3
Synonyms: None
Distributor: Carolina Biological Supply Company, 2700 York Road, Burlington, NC 27215
Chemical Information: 800-227-1150 (8am-5pm (ET) M-F) **Chemtrec** 800-424-9300 (Transportation Spill Response 24 hours)

Section 2 - Hazard Identification

Emergency Overview: Harmful if swallowed. Causes burns. Irritating to eyes, respiratory system and skin.
Potential Health Effects:
Eyes: May cause irritation.
Ingestion: May cause gastrointestinal discomfort.
Skin: May cause irritation to skin.
Inhalation: May cause irritation to respiratory tract.

Section 3 - Composition / Information on Ingredients

Principal Hazardous Components: Propylene Glycol(CAS# 57-55-6); Ethylene Glycol Phenyl Ether (CAS# 122-99-6); 2-amino-2-ethyl-1,3-propanediol (CAS# 115-70-8)
TLV units: N/A
PEL units: N/A

Section 4 - First Aid Measures

Emergency and First Aid Procedures:
Eyes - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Skin - After contact with skin, wash immediately with plenty of ... (Water, unless specified as water-reactive).
Ingestion - If swallowed, rinse mouth with water (only if the person is conscious). If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.
Inhalation - If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

Section 5 - Firefighting Procedures

Flash Point (Method Used): 99 °C (CC) (Propylene Glycol)
NFPA Rating:
Health: 0
Fire: 1
Reactivity: 0
Extinguisher Media: Use dry chemical, CO2 or appropriate foam.
Flammable Limits in Air % by Volume: (Propylene Glycol) LEL: 2.6% UEL: 12.6%
Autoignition Temperature: 371 °C (Propylene Glycol)
Special Firefighting Procedures: Firefighters should wear full protective equipment and NIOSH approved self-contained breathing apparatus.
Unusual Fire and Explosion Hazards: Fire or excessive heat may produce hazardous decomposition products.

Section 6 - Spill or Leak Procedures

Steps to Take in Case Material Is Released or Spilled: Ventilate area of spill. Eliminate all sources of ignition. Remove all non-essential personnel from area. Clean-up personnel should wear proper protective equipment and clothing. Absorb material with suitable absorbent and containerize for disposal.

Section 7 - Special Precautions

Precautions to Take in Handling or Storing: Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer).
Keep at temperature not exceeding ... OC (to be specified by the manufacturer).
Keep container tightly closed in a cool, well-ventilated place.
Avoid contact with clothing.
Avoid contact with skin and eyes.

Section 8 - Protection Information

Respiratory Protection (Specify Type): None needed under normal conditions of use with adequate ventilation. A NIOSH/MSHA chemical cartridge respirator should be worn if PEL or TLV is exceeded.
Ventilation:
Local Exhaust: Acceptable
Mechanical(General): Yes
Special: No
Other: No
Protective Gloves: Natural rubber, Neoprene, PVC or equivalent.
Eye Protection: Splash proof chemical safety goggles should be worn.
Other Protective Clothing or Equipment: Lab coat, apron, eye wash, safety shower.

Section 9 - Physical Data

Molecular Weight: N/A
Boiling Point: N/A
Vapor Density(Air=1): N/A
Percent Volatile by Volume: N/A
Solubility in Water: Soluble
Melting Point: N/A
Vapor Pressure: N/A
Specific Gravity (H2O=1): >1
Evaporation Rate (BuAc=1): N/A
Appearance and Odor: Colorless, odorless solution.

Section 10 - Reactivity Data

Stability: Stable
Conditions to Avoid: Heat and sources of ignition.
Incompatibility (Materials to Avoid): Heavy Metals, Bases, Metals, Water-reactive Material, Oxidizers,
Hazardous Decomposition Products: NOx, COx,
Hazardous Polymerization: Will not occur

Section 11 - Toxicity Data

Toxicity Data: (Propylene Glycol) orl-rat LD50 20 gm/kg
(Ethylene glycol Phenyl Ether) orl-rat LD50 1260 mg/kg
Effects of Overexposure:
Acute: See Section 2
Chronic: Not listed as a carcinogen by IARC, NTP or OSHA.
Conditions Aggravated by Overexposure: N/A
Target Organs: Eyes, Skin, Kidneys,
Primary Route(s) of Entry: Inhalation, ingestion, eye or skin contact.

Section 12 - Ecological Data

EPA Waste Numbers: N/A

Section 13 - Disposal Information

Waste Disposal Methods: Dispose in accordance with all applicable Federal, State and Local regulations. Always contact a permitted waste disposer (TSD) to assure compliance.

Section 14 - Transport Information

DOT Proper Shipping Name: N/A

Section 15 - Regulatory Information

EPA TSCA Status: On TSCA Inventory
Hazard Category for SARA Section 311/312 Reporting: Acute Chronic
WARNING: This product contains a material known to the state of California to cause cancer.

Name List:
Propylene Glycol - No
Ethylene Glycol Phenyl Ether - No
2-amino-2-ethyl-1, 3-propanediol: No

Chemical Category:
Propylene Glycol - No
Ethylene Glycol Phenyl Ether - Yes
2-amino-2-ethyl-1, 3-propanediol: No

CERCLA Section 103 RQ(lb.): Propylene Glycol - No
Ethylene Glycol Phenyl Ether - No
2-amino-2-ethyl-1, 3-propanediol: No
RCRA Section 261.33: Propylene Glycol - No
Ethylene Glycol Phenyl Ether - No
2-amino-2-ethyl-1, 3-propanediol: No

Section 16 - Additional Information

The information provided in this Material Safety Data Sheet represents a compilation of data drawn directly from various sources

available to us. Carolina Biological Supply makes no representation or guarantee as to the suitability of this information to a particular application of the substance covered in the Material Safety Data Sheet. Any employer must carefully assess the applicability of any information contained herein in regards to the particular use to which the employer puts the material.

Glossary

ACGIH	American Conference of Governmental Industrial Hygienists
CAS Number	Chemical Services Abstract Number
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DOT	U.S. Department of Transportation
IARC	International Agency of Research on Cancer
N/A	Not Available
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
ppm	Parts per million
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act
TLV	Threshold Limit Value
TSCA	Toxic Substances Control Act

Safety Precautions For Handling Carolina Preserved Specimens

To achieve the necessary level of safety in the laboratory, the instructor should be familiar with all chemicals present and the necessary precautions to be taken in using them.

Carolina provides specimens preserved in alcohol, *Carosafe*™ (contains propylene glycol), and formalin solutions. Information is provided in the catalog regarding which particular preservative is used in a certain type of specimen. Note that specimens are never provided in a formalin preservative unless this is specifically requested by the customer. Note also that specimens that are preserved with embalming fluids, and are never treated with *Carosafe*™, are provided with a specific Material Safety Data Sheet (MSDS) prepared for that particular embalming fluid. Regardless of the preservative that is used, we recommend you follow these safety tips whenever working with preserved specimens:

1. Wear appropriate protective eyewear at all times.
2. Wear appropriate protective equipment such as gloves and lab coats.
3. Work only in a well ventilated area.
4. Prohibit eating, drinking, and smoking in the work area.
5. In the event of contact, wash skin with soap and water; flush eyes with water.
6. If overexposure to any chemical occurs, seek medical attention immediately.
7. Be careful with sharp objects such as pins, scalpels, and the spines and teeth of specimens.

Formalin-preserved or embalmed specimens should always be used in a well-ventilated area to prevent irritation to the eyes, skin, or respiratory tract. The use of goggles lessens eye irritation from formaldehyde vapors. If direct contact to eyes or skin occurs, wash thoroughly with water.

Isopropanol is very flammable, so avoid all sparks, open flames, and excessive heat.

The components of *Carosafe*™ can cause burns to eyes and skin. In addition, the vapor of some components can be irritating if inhaled.

When working with preserved materials, be careful with sharp objects such as pins, scalpels, and the spines and teeth of specimens. When using a scalpel, we recommend cutting away from oneself and ensuring that fingers are kept out of the cutting path at all times.

Carolina preserved specimens are available in *Carosafe*™, a propylene glycol-based shipping and holding fluid. *Carosafe*™ is not a fixative; it is a preservative designed to prevent mold and tissue deterioration after the tissue has been properly fixed with formalin. *Carosafe*™ is an effective substitute for the standard formalin preservative and acts to hold the unpleasant odor of formaldehyde to an absolute minimum. Additionally, Carolina preserved animals may be ordered "damp-packed." Our tradename for this improved method of packaging is *Caropak*™. Preserved animals shipped in *Caropaks* have been processed with *Carosafe*™, and are as "odorless" as effective fixation and preservation techniques allow.

The reverse side of this sheet contains further safety and health information regarding the three most common chemicals used by Carolina in the preservation process. This information is given in the form of a columnar table which contains all of the information required by OSHA to be present on a Material Safety Data Sheet (MSDS) under the Hazard Communication Standard (29 CFR 1910.1200). Additional information may be obtained by calling Carolina during regular business hours at 336-584-0381.

Comparative Safety of Preservatives

	Formaldehyde	Isopropanol	Carosafe™ (Propylene Glycol)
Physical Data			
Hazardous Components (OSHA - 1994)	Methanol (TWA 200 ppm) Formaldehyde (TWA 0.75 ppm)	Isopropanol (TWA 400 ppm)	Propylene Glycol
Flash Point	184° Fahrenheit (Combustible)	53° Fahrenheit (Flammable)	225° Fahrenheit
Lower Explosion Limits	7%	2%	2.6%
Upper Explosion Limits	73%	12.7%	12.5%
Fire Extinguishing Media	Alcohol Foam, Water Fog, Carbon Dioxide, Dry Chemical	Alcohol Foam, Carbon Dioxide, Dry Chemical	Water Fog, Carbon Dioxide, Dry Chemical
Unusual Fire or Explosion	Vapor heavier than air, may travel along ground to distant ignition source and flash back.	No unusual fire hazards noted. Closed containers exposed to fire may explode.	None
Threshold Limit Value (TLV) ACGIH	200 ppm (TWA) Methanol 0.3 ppm Ceiling Formaldehyde	400 ppm (TWA)	None known
Effects of Overexposure			
Eyes	Vapor causes severe irritation, redness, tearing, blurred vision. Liquid may cause severe or permanent damage.	Direct contact may cause irritation.	Direct contact may cause irritation.
Skin (Contact)	Irritation, dermatitis, strong sensitizer.	Mild irritation possible.	Direct contact may cause irritation.
Inhalation	Irritation of respiratory tract, dyspnea, headache, bronchitis, pulmonary edema, gastroenteritis.	Irritation of respiratory tract, headache, and at high concentrations, narcosis.	Vapor may cause irritation to respiratory tract.
Ingestion	May be fatal or cause blindness if ingested. LD_{50} (oral-rat)=500 mg/kg	May cause nausea, vomiting, headaches, dizziness, gastrointestinal irritation. LD_{50} (oral-rat) = 5045 mg/kg	Expected to be relatively non-toxic. Individuals with kidney problems may see more severe effects. LD_{50} (oral-rat) = 20,000 mg/kg
Chronic Effects	Listed by the National Toxicology Program (NTP) as reasonably anticipated to cause cancer in humans. Also listed by IARC and OSHA as possible human carcinogen.	Not listed as causing cancer by NTP, IARC, or OSHA. No other chronic effects noted.	Not listed as causing cancer by NTP, IARC, or OSHA. Gastrointestinal discomfort, nausea, vomiting, lethargy, and diarrhea have been cited for chronic exposure.
Target Organs	If inhaled, eyes, nasal passages, throat.	None	
First Aid Measures	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If ingested, if conscious, immediately induce vomiting. If eye or skin contact, immediately flush with flooding amounts of water for at least 15 minutes. Seek medical aftention for all instances of overexposure to this chemical.	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If ingested, if conscious, immediately induce vomiting. If eye or skin contact, immediately flush with flooding amounts of water for at least 15 minutes. Seek medical attention for all instances of overexposure to this chemical.	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If ingested, if conscious, immediately give water. If eye or skin contact, immediately flush with flooding amounts of water for at least 15 minutes. Seek medical attention for all instances of overexposure to this chemical.
Spill Control Measures	If a spill occurs, cleanup personnel should wear full protective clothing and NIOSH approved self-contained breathing apparatus. Eliminate sources of ignition. Keep non-essential personnel away. Absorb spilled material on vermiculite or other suitable absorbent. Containerize for disposal.	Eliminate sources of ignition. Cleanup personnel should wear proper protective clothing and equipment to avoid contact with liquid. Respiratory protection may be required. Absorb material on activated carbon or other suitable absorbent. Containerize for disposal. Flush area of spill with water.	Cleanup personnel should wear proper protective clothing and equipment to avoid contact with liquid. Absorb material on vermiculite or other suitable absorbent material. Containerize for disposal. Flush area of spill with water.
Disposal	Dispose in accordance with all applicable local, state, and federal regulations. Contact local or state waste agencies if disposal questions arise.	Dispose in accordance with all applicable local, state, and federal regulations. Contact local or state waste agencies if disposal questions arise.	Dispose in accordance with all applicable local, state, and federal regulations. Contact local or state waste agencies if disposal questions arise.
Personal Protection	Wear gloves, lab coat, splash goggles and any other appropriate equipment suggested by the laboratory supervisor.	Wear gloves, lab coat, splash goggles and any other appropriate equipment suggested by the laboratory supervisor.	Wear gloves, lab coat, splash goggles and any other appropriate equipment suggested by the laboratory supervisor.
Storage Information	Store tightly closed in a location suitable for general chemical storage.	Store in a location suitable for flammable liquid storage.	Suitable for storage in a general chemical storage area. Store below 120° Fahrenheit.

TWA - Time Weighted Average; ACGIH American Conference of Governmental Industrial Hygienists; IARC - International Agency for Research on Cancer; OSHA - Occupational Safety and Health Administration; PEL Permissible Exposure Limit; NIOSH - National Institute for Occupational Safety and Health.; RTECS - Registry of Toxic Effects ofChemical Substances. LD_{50} - Lethal Dose for *50%* of a population.

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