

Nasco 1760245C
9306

**SUPPLEMENTAL MATERIAL SAFETY INFORMATION FOR
NASCO-GUARD® SPECIMENS
REVISED JULY, 1990**

Manufacturer's Name: Nasco, Fort Atkinson, Wisconsin 53538
Emergency Phone Number: 414-563-2446 Extension 265

The following safety data applies to Nasco-Guard® preservative fluid (or tissue fluids) containing approximately 74% water, 25% ethylene glycol (1, 2-ethanediol) and/or propylene glycol (1, 2-propanediol), 0.5% or less formaldehyde, and 0.5% or less phenol. The Chemical Abstracts Service (CAS) registration number for ethylene glycol is 107-21-1. The CAS number for propylene glycol is 57-55-6. The CAS number for formaldehyde is 50-00-0. The CAS number for phenol is 108-95-2.

GENERAL INFORMATION: Nasco-Guard® specimens are fixed in formaldehyde solutions ranging from 0.8% - 3.7%. The embalming fluid of large mammals (e.g., cats, dogs, fetal pigs) may also contain 1.9% phenol. All specimens are subsequently perfused with an ethylene or propylene glycol-water solution until tissue fluids and ambient fluid contain at least 25% glycol. Residual free formaldehyde is thus reduced to 0.5% or less. Phenol, if present, is reduced commensurately. The ethylene glycol in specimens and ambient fluids presents no hazard by skin absorption or inhalation, but it is toxic if ingested in a large quantity. Specimens are intended for observation and dissection only and must not be eaten by humans or pets. Dogs and cats may eat Nasco-Guard® specimens due to the sweet taste of ethylene glycol. The relative safety of ethylene glycol is shown by its worldwide, 50-year acceptance as the prime ingredient of antifreeze solutions for automobiles. Propylene glycol has a very low level of toxicity.

APPEARANCE AND ODOR: Colorless, sweet tasting liquid with mild odor (slight disinfectant odor if phenol is present).

FIRE AND EXPLOSION HAZARD: None.

HEALTH HAZARD: NASCO-GUARD® PRESERVATIVE FLUID (OR TISSUE FLUIDS)

Eyes — Direct contact with eyes may cause irritation. Wash eyes with water. Safety glasses may be worn as a precautionary measure.

Skin — Mild irritation possible in hypersensitive individuals. Wash hands with soap and water after handling specimens. Rubber or plastic gloves may be worn as a precautionary measure.

Inhalation — Very small quantities of formaldehyde gas can cause distress (dizziness, nausea, headache, etc.) in hypersensitive individuals. Long-term exposure (8 hours/day, 5 days/week, 2 years) to atmospheric formaldehyde concentrations of 14 ppm have caused nasal carcinomas in rats. Recent epidemiological studies do not indicate that formaldehyde is a human carcinogen. Specimens should be used in a well-ventilated room. Employees and students should not work in the same room where specimens are stored.

Oral — Because Nasco-Guard® specimens are moist packed, little fluid is available for consumption. The main danger lies in eating specimens.

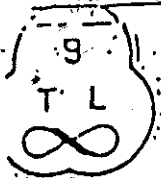
EMERGENCY AND FIRST AID PROCEDURES:

Swallowing — If conscious, give two glasses of water and induce vomiting. Call a physician (or veterinarian in case of cat or dog) immediately.

Skin — Remove contaminated clothing and flush skin with water.

Inhalation — Remove to fresh air. Call a physician if discomfort persists.

Eyes — Flush with water.



MATERIAL SAFETY DATA SHEET

3

3350 W. 131st Street
Blue Island, IL. 60406

MSDS NUMBER BTL-1-A

SECTION I: MATERIAL IDENTIFICATION

PRODUCT / CHEMICAL NAME: Liquefied Phenol 85%

PRODUCT / CHEMICAL SYNONYMS: Carboic Acid - Monohydroxybenzene

CHEMICAL FAMILY / FORMULA: C₆H₅OH

OTHER IDENTIFICATION:

MATERIAL USE OR OCCURENCE:

24 HOUR EMERGENCY INFORMATION

EMTREC: 312-388-9373
800-374-9300

HAZARDS:

4 - EXTREME		FIRE
3 - HIGH		REACTIVITY
2 - MODERATE		OTHER
1 - SLIGHT		HEALTH
0 - LEAST		

SECTION II: INGREDIENTS

COMPONENT	%	TLV (Units)	COMPONENT	%	TLV (Units)
Phenol	85% (± 2%)	5 PPM (Skin)			
Add'l. Toxicity Info. Oral Human LD 50 = 140 mg./kg. Oral Rat LD 50 = 414 mg./kg.					
Water	Approx. 15%				

SECTION III: PHYSICAL DATA

BOILING POINT) F < 182 °C	MELTING POINT) 45 °F 7. °C	VAPOR PRESSURE) 2 mm Hg. @ 50 °C
SPECIFIC GRAVITY) (H ₂ O = 1) 1.036 @ 50 °F	VOLATILE BY VOLUME) Not Available	VAPOR DENSITY) (AIR = 1) 3.24 (Phenol)
SOLUBILITY IN) WATER Not Available	EVAPORATION RATE) - 1) Not Available	
APPEARANCE AND ODOR) Water white liquid		

SECTION IV: FIRE AND EXPLOSION DATA

FLASH POINT AND METHOD) Not Available	IGNITION TEMPERATURE) 1319 °F - 715 °C (Phenol)	FLAMMABLE LIMITS (X) (Phenol)	LEL 1.7	UEL 8.6
EXTINGUISHING MEDIA) Dry chemical - Alcohol Foam - CO ₂ - Water Spray				

SPECIAL FIREFIGHTING PROCEDURES AND PRECAUTIONS) Avoid skin contact with Phenol. Full protective clothing and self contained breathing apparatus should be worn. Apply water or foam gently to avoid splashing of Phenol on personnel. Use water to keep fire exposed containers cool.

UNUSUAL FIRE AND EXPLOSION INFORMATION) Yields flammable vapors which, when heated, can form explosive mixtures with air.

SECTION V

HEALTH INFORMATION

4

OSHA PEL)

5 PPM (Skin)

ACGIH TLV)

5 PPM (Skin) STEL = .10 PPM

ACTION LEVEL)

HEALTH EFFECTS

	ACUTE	CHRONIC
INHALATION	Irritant; may cause severe damage to mucous membranes.	Digestive disturbances, nervous disorders & skin eruptions may result. Possible kidney & liver effects, may be fatal.
INGESTION	Severe burns. Systemic poisoning; muscular weakness, tremors, convulsions, collapse, unconsciousness & death.	
SKIN CONTACT	Severe burns, systemic poisoning as with Ingestion, anesthetic effect i.e. no pain with whitening of skin, absorption	Dermatitis & symptoms under Chronic Inhalation effects.
EYE CONTACT	rapid. Severe burns, may cause corneal damage or blindness.	

FIRST AID PROCEDURES) INHALATION: If breathing has stopped, apply artificial respiration. If patient is breathing, administer oxygen with trained personnel. Obtain medical attn.
 INGESTION: Drink large amounts of water. Induce vomiting. Obtain medical attn. SKIN CONTACT: Flush with water for 15 min. while removing contaminated clothing. Obtain medical attn.
 EYE CONTACT: Flush with water for 15 min. holding eye lids open. Obtain medical attn.

SECTION VI

REACTIVITY DATA

STABILITY)

 UNSTABLE STABLE

HAZARDOUS POLYMERIZATION)

 MAY OCCUR WILL NOT OCCUR

CONDITIONS TO AVOID)

Overheating

INCOMPATIBLES) Strong oxidizers, calcium hypochlorite, aluminum chloride, nitrobenzene, butadiene, strong alkalis, strong mineral acids.

TYPICAL DECOMPOSITION PRODUCTS) Complete combustion yields carbon dioxide & water vapor. Incomplete combustion may yield carbon monoxide.

SECTION VII

SPILL OR LEAK PROCEDURES

Eliminate sources of ignition. Vapor concentrations may be reduced by covering with alcohol type foam. Clean up and drain or pump to appropriate storage vessel for EPA approved disposal. If solid, handle accordingly and store for EPA approved disposal.

SECTION VIII

SPECIAL PROTECTION AND CONTROL INFORMATION

VENTILATION	LOCAL EXHAUST) Recommended - Use lab hoods indoors. Work up-wind outdoors.
	GENERAL EXHAUST) Insure adequate ventilation
PERSONAL PROTECTIVE EQUIPMENT	RESPIRATORY PROTECTION) Use chemical cartridge or air supplied depending on concentration. Use SCBA for emergency conditions.
	GLOVES) Impervious
	EYE PROTECTION) Chemical goggles & face shield
	OTHER) Impervious clothing to prevent skin contact.

SECTION IX

OTHER INFORMATION

The information contained herein is based on data available at this time and is believed to be accurate. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof. Since information contained herein may be applied under conditions beyond our control and with which we may be unfamiliar, no responsibility is assumed for the results of its use. The person receiving this information shall make his own determination of the suitability of the material for a particular purpose.

5/86