HAMPTON RESEARCH

MATERIAL SAFETY DATA SHEET

Date Updated: 09/17/2003

Section 1 - Product and Company Information

Product Name	GLYCEROL ANHYDROUS
Product Number	HR2-623
Company	Hampton Research
Street Address	34 Journey
City, State, Zip, Country	Aliso Viejo CA 92656-3317 USA
Technical Phone:	949-425-1321
Fax:	949-425-1611

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
GLYCEROL	56-81-5	No

Formula	C3H8O3
Synonyms	Glycerol,Citifluor AF 2,Glycerin,Glycerin, anhydrous,Glycerine,Glycerin mist (ACGIH,OSHA), Glycerin, synthetic,Glyceritol,Glycyl alcohol, Clyzerin, wasserfrei (German),Grocolene,MOON,1,2, 3-Propanetriol,Osmoglyn,Star,Synthetic glycerin, 90 Technical glycerine,Trihydroxypropane,1,2, 3-Trihydroxypropane
RTECS Number:	MA8050000

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Caution: Avoid contact and inhalation. Target organ(s): Kidneys.

HMIS RATING

HEALTH: 1*
FLAMMABILITY: 0
REACTIVITY: 1

NFPA RATING

HEALTH: 1
FLAMMABILITY: 0
REACTIVITY: 1

*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

INHALATION EXPOSURE
If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

DERMAL EXPOSURE
In case of contact, immediately wash skin with soap and copious amounts of water.

EYE EXPOSURE
In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

FLASH POINT
320 °F 160 °C Method: closed cup

EXPLOSION LIMITS
Lower: 0.9 %

AUTOIGNITION TEMP
370 °C

FLAMMABILITY
N/A

EXTINGUISHING MEDIA
Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

FIREFIGHTING
Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Specific Hazard(s): Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

PROCEDURE(S) OF PERSONAL PRECAUTION(S)
Exercise appropriate precautions to minimize direct contact with skin or eyes and prevent inhalation of vapors.

METHODS FOR CLEANING UP
Absorb on sand or vermiculite and place in closed containers for disposal. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

HANDLING
User Exposure: Avoid inhalation. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

STORAGE
Suitable: Keep tightly closed.

SPECIAL REQUIREMENTS
Hygroscopic.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS

Safety shower and eye bath. Mechanical exhaust required.

PERSONAL PROTECTIVE EQUIPMENT
Respiratory: Wear dust mask.
Hand: Protective gloves.
Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES
Wash thoroughly after handling.

EXPOSURE LIMITS, RTECS

Country	Source	Type	Value
USA USA	ACGIH ACGIH	TWA TWA	10 MG/M3 10 MG/M3
Remarks: inhalable particulate			
USA USA	MSHA Standard MSHA		
Remarks: Nuisance Particulates (mist). Nuisance			
USA USA	OSHA. OSHA.	PEL PEL	8H TWA 15 MG/M3, TOTAL DUST 8H
New Zealand OEL OEL			
Remarks: check ACGIH TLV check ACGIH TLV			

Section 9 - Physical/Chemical Properties

Appearance: Physical State: Liquid

Property	Value	At Temperature or Pressure
Molecular Weight	92.09 AMU	
pH	5.5 - 8	
BP/BP Range	182 °C	20 mmHg
MP/MP Range	20 °C	
Freezing Point	N/A	
Vapor Pressure	< 1 mmHg	20 °C
Vapor Density	3.1 g/l	
Saturated Vapor Conc.	N/A	
SG/Density	1.262 g/cm3	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	< 0.1 %	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Surface Tension	N/A	
Partition Coefficient	N/A	
Decomposition Temp.	N/A	
Flash Point	320 °F 160 °C	Method: closed cup
Explosion Limits	Lower: 0.9 %	
Flammability	N/A	
Autoignition Temp	370 °C	
Refractive Index	1.474	
Optical Rotation	N/A	
Miscellaneous Data	N/A	
Solubility	Solubility in Water:5 M in H2O, 20°C complete, colorless	

N/A = not available

Section 10 - Stability and Reactivity

STABILITY
Stable: Stable.

Conditions to Avoid: Protect from moisture.
Materials to Avoid: Strong bases, Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS
Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

HAZARDOUS POLYMERIZATION
Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE
Skin Contact: May cause skin irritation.
Skin Absorption: May be harmful if absorbed through the skin.
Eye Contact: May cause eye irritation.
Inhalation: May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.
Ingestion: May be harmful if swallowed.

TARGET ORGAN(S) OR SYSTEM(S)
Kidneys.

SIGNS AND SYMPTOMS OF EXPOSURE
Prolonged exposure can cause: Nausea, headache, and vomiting.

TOXICITY DATA
Skin
Rabbit
> 10,000 mg/kg
LD50
Oral
Rat
*
LD50
Inhalation
Rat
> 4 mg/kg
LC50

Oral
Rat
12,600 mg/kg
LD50
Remarks: Behavioral:General anesthetic. Behavioral:Muscle weakness. Liver:Other changes.

Inhalation
Rat
> 570 mg/m3
LC50

Intraperitoneal
Rat
4420 MG/KG
LD50
Remarks: Behavioral:Toxic psychosis. Cardiac:Other changes. Kidney, Ureter, Bladder:Other changes.

Subcutaneous
Rat
100 MG/KG
LD50

Intravenous
Rat
5566 MG/KG
LD50

Oral
Mouse
4,090 mg/kg
LD50

Intraperitoneal
Mouse
8700 MG/KG
LD50
Remarks: Behavioral:Altered sleep time (including change in righting reflex).

Subcutaneous
Mouse
91 MG/KG
LD50

Intravenous
Mouse
4250 MG/KG
LD50

Oral
Rabbit
27,000 mg/kg
LD50

Skin
Rabbit
> 10,000 mg/kg
LD50

Intravenous
Rabbit
53 GM/KG
LD50

Oral
Guinea pig
7,750 mg/kg
LD50

IRRITATION DATA

Skin
Rabbit
500 mg
24H
Remarks: Mild irritation effect

Eyes
Rabbit
126 mg
Remarks: Mild irritation effect

Eyes

Rabbit
500 mg
24H
Remarks: Mild irritation effect

CHRONIC EXPOSURE - MUTAGEN

Species: Human
Dose: 200 MMOL/L
Cell Type: lymphocyte
Mutation test: DNA inhibition

Species: Rat
Route: Oral
Dose: 1 GM/KG
Mutation test: Cytogenetic analysis

CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Species: Rat
Dose: 100 MG/KG
Route of Application: Oral
Exposure Time: (1D MALE)
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Species: Rat
Dose: 280 MG/KG
Route of Application: Intratesticular
Exposure Time: (2D MALE)
Result: Paternal Effects: Spermatogenesis (including genetic material, sperm morphology,motility, and count). Paternal Effects: Testes, epididymis, sperm duct.

Species: Rat
Dose: 1600 MG/KG
Route of Application: Intratesticular
Exposure Time: (1D MALE)
Result: Effects on Fertility: Male fertility index (e.g., # males impregnating females per # males exposed to fertile nonpregnant females).

Species: Rat
Dose: 862 MG/KG
Route of Application: Intratesticular
Exposure Time: (1D MALE)
Result: Paternal Effects: Spermatogenesis (including genetic material, sperm morphology,motility, and count).

Species: Monkey
Dose: 119 MG/KG
Route of Application: Intratesticular
Exposure Time: (1D MALE)
Result: Paternal Effects: Spermatogenesis (including genetic material, sperm morphology,motility, and count). Paternal Effects: Testes, epididymis, sperm duct.

Section 12 - Ecological Information

No data available.

ACUTE ECOTOXICITY TESTS

Test Type: LC50 Fish
Species: other fish
Value: > 100,100 mg/l

Test Type: LC50 Fish
Species: Pimephales promelas (Fathead minnow)
Value: 44,000 mg/l

Test Type: LC50 Fish
Species: Carassius auratus (Goldfish)
Value: > 5,000 mg/l

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION
Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT
Proper Shipping Name: None
Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.

IATA
Non-Hazardous for Air Transport: Non-hazardous for air transport.

Section 15 - Regulatory Information

EU ADDITIONAL CLASSIFICATION
S: 23 24/25
Safety Statements: Do not breathe vapor. Avoid contact with skin and eyes.

US CLASSIFICATION AND LABEL TEXT
US Statements: Caution: Avoid contact and inhalation. Target organ(s): Kidneys.

UNITED STATES REGULATORY INFORMATION
SARA LISTED: No
TSCA INVENTORY ITEM: Yes Yes

CANADA REGULATORY INFORMATION
WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.
DSL: Yes
NDSL: No

Section 16 - Other Information

DISCLAIMER
For R&D use only. Not for drug, household or other uses.

WARRANTY
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide.