MATERIAL SAFETY DATA SHEET

Glycerin 48% (v/v)

SECTION 1 - IDENTIFICATION

Product Identification: Glycerin 48% (v/v)
Product Code CF3302-48
Synonyms: Glycerol
Product Uses: Non-Toxic Anti-Freeze Solution

HMIS ®	
HEALTH	**1**
FLAMMABILITY	**0**
REACTIVITY	**0**
PERSONAL PROTECTION	**A**

Company Identification:
Chemfast, LLC.
11 Jenna Drive
Unit #1
Gorham, Me 04038

Emergency Telephone:
Chemtrec 1-800-424-9300
U.S. and Canada

Information Telephone:
1-800-287-225
207-774-8144

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SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

Name	CAS No.	Percent Volume
1, 2, 3-Propanetriol	56-81-5	48% max
Water	7732-18-5	52%

Occupational exposure limits, if applicable, are listed in Section 8
LC/LD50 information is listed in Section 11.
Full text of R phrase(s) are listed in section 16.

SECTION 3 - HAZARDS IDENTIFICATION

Potential Health Effects:

Eye - Concentrated solutions may cause mild transient irritation.
Skin - Unlikely to be irritant. Heated product may cause thermal burns if contacted.
Inhalation - Not applicable at ambient temperature. Glycerin mist may be irritating to respiratory tract.
Ingestion - Unlikely to be harmful unless excessive amount.
Physical/Chemical Hazards: Contact of glycerin with strong oxidizing agents such as Nitric Acid or other strong acids, Chromium Trioxide, Potassium Chlorate, or Potassium Permanganate may cause an explosion.
Environmental Hazards: Product is biodegradable

SECTION 4 - FIRST AID MEASURES

Eye - Immediately flush with copious amounts of water. Get medical attention if irritation persists.
Skin - Wash thoroughly with plenty of water and soap.
Inhalation - Remove to fresh air.
Ingestion - Remove material from mouth. Drink plenty of water. If large amount swallowed or symptoms develop get medical attention.

SECTION 5 - FIRE FIGHTING MEASURES

Extinguishing media: Use water, alcohol resistant foam, CO2 or dry chemical.
Unsuitable extinguishing media: Not applicable
Flash Point and method: >390° F (198.9° C) PMCC
Explosive limits in air: Not applicable
Auto-ignition temperature: ~739º F (~393º C)
Sensitivity to mechanical impact/static discharge: Not available
Special Protective Equipment: Wear self-contained breathing apparatus and full protective clothing.
Other Fire Fighting Considerations: Contact of glycerin with strong oxidizing agents such as Nitric Acid or other strong acids, Chromium Trioxide, Potassium Chlorate, or Potassium
Permanganate may cause an explosion.
Exposure hazards: During burning poisonous acrolein may be formed.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear respirator, suitable gloves and eye/face protection.
Environmental Precautions: Minimize contamination of drains, surface and ground waters.
Procedures for Spill/Leak Clean-up: Transfer product to suitably labeled containers for disposal at an approved site. Absorb liquid spillage onto inert material (e.g. sand). Residues and small spillages may be washed away with water and detergent.
Refer to Section 8 for additional personal protection information.
Refer to Section 13 for disposal considerations.

SECTION 7 - HANDLING AND STORAGE

Handling: No special precautions required, but avoid eye and skin contact as part of normal industrial hygiene. Prevent formation of mist. Eye and skin contact should be avoided if handling at elevated temperatures.
Storage: Store in clean tight containers to prevent moisture pickup from air. Can be stored in aluminum, stainless steel, fiberglass or resin lined steel vessels.
Other Recommendations: Avoid contact with strong oxidizing agents such as Nitric Acid or other strong acids, Chromium Trioxide, Potassium Chlorate, or Potassium Permanganate.
Specific use(s): Follow bulk handling and storage procedures as noted above.
Refer to Section 6 for clean-up of spillages. Refer to Section 13 for disposal considerations.

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

General Precautions: Good industrial hygiene should be followed. Avoid breathing mist.
Exposure Limit Values - glycerin:
United States – ACGIH – Glycerin mist - TLV-TWA 10 mg/m3
OSHA Z-1 PEL Glycerin mist, respirable fraction - 5 mg/m3
OSHA Z-1 PEL Glycerin mist, total dust - 15 mg/m3

Exposure Controls:
Engineering Controls: Ventilation: Local exhaust – preferred. Mechanical (general) acceptable. Provide ventilation to meet exposure limits.
Personal Protective Equipment:
Eye - None required, although eye protection is recommended as part of good industrial hygiene.
Skin - Protective gloves: None required with normal use.
Inhalation - An appropriate NIOSH/MSHA approved respirator should be used if a mist or vapor is generated. A NIOSH/MSHA approved self-contained breathing apparatus or air-supplied respirator is recommended if the concentration exceeds the capacity of cartridge respirator. WARNING: Air purifying respirators do not protect workers in oxygen-deficient atmospheres.
Other Controls: None required.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical state and appearance:	Liquid.
Odor:	Not available.
Taste:	Sweet.
Molecular Weight:	Not applicable.
Color:	Orange, dyed to standard.
pH (1% soln/water):	Neutral.
Solubility:	Easily miscible (soluble) in cold water, hot water.
Specific Gravity:	1.139 @ 15°C (59 °F)
Freeze Point (calculated):	-26.2°C / -15.0 °F
Boiling point/Boiling range:	Over 550 °F (288 °C) @ 760 mm Hg (101.3kPa)
Flash Point & Method:	>390 °F (198.9 °C) PMCC
Flammability (solid, gas):	Not available
Explosive properties:	Not available
Oxidizing properties:	Not available
Vapor pressure: @ 72 °F (22.2 °C)	<0.1 mm Hg
Fat solubility (solvent-oil to be specified):	Miscible with ethanol; Slightly soluble in acetone; Insoluble in ether and in chloroform
Vapor density:	Not available
Evaporation Rate (nBuOAc=1):	Not available
Explosive Limits:	Not applicable
Auto ignition temperature:	~739 °F (~393 °C)

SECTION 10 - STABILITY AND REACTIVITY

Stability: Stable under normal operational procedures.
Conditions to Avoid: None identified.
Materials to Avoid: Contact of glycerin with strong oxidizing agents such as Nitric Acid or other strong acids, Chromium Trioxide, Potassium Chlorate, or Potassium Permanganate may cause an explosion.
Hazardous Decomposition Products: Does not decompose up to 204 °C (400 °F)
Thermal decomposition may release acrolein.
Hazardous Polymerization: No hazardous polymerization reactions.

SECTION 11 - TOXICOLOGICAL INFORMATION

IRRITATION DATA
Skin, rabbit Not irritating
Eye, rabbit Not irritating
TOXICITY DATA
LD50 oral, rat >2 g/kg

SECTION 12 - ECOLOGICAL INFORMATION

Eco-toxicity:

Carassius auratus (Goldfish) 24h LC50 >5,000 mg/L
Leuciscus idus (Golden Orfe) 48h LC0 >250 mg/L
Oncorhynchus mykiss (Rainbow trout) 96h LC100 = 51,000 – 57,000 mg/L
Daphnia magna 24h EC50 >10,000 mg/L
Daphnia magna 24h EC0 >500 mg/L
Microorganisms
Chlimonas paramaecium 48h NOEC >10,000 mg/L
Entosiphon sulcatum 72h NOEC 3200 mg/L
Pseudomonas putida 16h NOEC >10,000 mg/L
Uronema parduzci 20h NOEC >10,000 mg/L
Algae
Microcystis aeruginosa 8d NOEC 2900 mg/L
Scenedesmus quadricauda 8d EC0 >10,000 mg/L

Mobility: Low potential for sorption to soil. Glycerol will partition primarily to water.
Persistence and biodegradability: Readily biodegradable (OECD 301)
Bio-accumulative potential: BCF: 3.162 (calculated)

SECTION 13 - DISPOSAL CONSIDERATIONS

DISPOSAL IS TO BE PERFORMED IN COMPLIANCE WITH ALL FEDERAL, STATE/PROVINCIAL AND LOCAL REGULATIONS. Do not dispose of via sinks, drains or into the immediate environment.

SECTION 14 - TRANSPORT INFORMATION

U.S. DOT: Not regulated for transport
Not classified in RID/ADR – IMDG – ICAO/IATA

SECTION 15 - ADDITIONAL REGULATORY INFORMATION

INVENTORY STATUS: TSCA, EINECS, DSL, JAPAN, AUSTR, PHIL, CHINA, KOREA
WGK water endangering class: 1, low hazard to water
EU Classification
This product is not classified as dangerous according to Directive 1999/45/EC.
Canada
HAZARDOUS INGREDIENTS – WHMIS (Canadian Workplace Hazardous Materials Information System)
This product when tested as a whole is not a controlled substance within the meaning of the Hazardous Products Act. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

SECTION 16 - OTHER INFORMATION

The submission of the MSDS may be required by law, but this is not an assertion that the substance is hazardous when used in accordance with proper safety practices and normal handling procedures. Data supplied are for use only in connection with occupational safety and health. The information contained herein has been compiled from sources considered by Chemfast, LLC. to be dependable and is accurate to the best of the Company's knowledge. The information relates to the specific product designated herein, and does not relate to use in combination with any other material or any other process. Chemfast, LLC. assumes no responsibility for injury to the recipient or third persons, or for any damage to any property resulting from misuse of the controlled product.