Safety Data Sheet

Transport Symbol	WHMIS	NFPA	Personal Protective Equipment
Not controlled	Not controlled		

Original Preparation Date: 09-Jul-2009 **Revision Date:** *11-Sep-2013* **Revision Number:** *2*

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Product Name:
USP Kosher Glycerin (Excipient)
Synonyms:
Glycerol. CAS 56-81-5. EINECS 200-289-5. ENCS 2-0242

Product Code:
051000, 49513, 49514

Use of the Substance / Preparation:
Food additive / Excipient

Contact Manufacturer:
Ritchie Engineering Company, Inc.
10950 Hampshire Avenue South
Bloomington, MN 55438-2623 U.S.A
Phone: 952-943-1333, Fax:
1-800-322-8684.

Emergency Phone Numbers 24 hours:
ChemTel: 1-800-255-3924 (United States, Canada, Puerto Rico, and US Virgin Islands)
ChemTel: 1-813-248-0585 (International)

2. HAZARDS IDENTIFICATION

Emergency Overview

Health injuries are not known or expected under normal use.

Appearance	Physical State	Odor
Clear Colorless	Liquid	Odorless

Based on available information, this product is not known to fall into any of the specified health or physical hazard categories defined by 29 CFR 1910, amended to conform to the United Nations' Globally Harmonized System of Classification and Labelling of Chemicals (OSHA / GHS); SOR/88-66, the Canadian Controlled Products Regulations (CPR); and/or NOM-002-SCT-2003 (Mexico). No signal words, pictograms, hazard phrases or precautionary phrases are known to be applicable. However, one or more of the product component(s) is known to be listed as an OSHA 29 CFR 1910.1000 Air Contaminant. Occupational exposure limits are subsequently provided in section 8 of this SDS.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Molecular Formula $C_3 H_8 O_3$

The following component(s) in this product are considered hazardous under applicable OSHA (USA), WHMIS (Canada), and/or NOM-002-SCT-2003 (Mexico) regulations

Chemical Name	CAS-No	Weight %	North American Hazard Indicator
Glycerin	56-81-5	99-100	29 CFR 1910.1000 Air Contaminant. (as respirable mist)

4. FIRST AID MEASURES

Description of first aid measures
Eye Contact Rinse thoroughly with plenty of water, also under the eyelids.
Skin Contact Wash off with soap and plenty of water.
Inhalation Move to fresh air.
Ingestion Clean mouth with water and afterwards drink plenty of water.

Most important symptoms and affects, both acute and delayed
Eyes Not expected to pose health issues for the eye.
Skin Based on available data, not, or only slightly irritating.
Inhalation Excessive inhalation of mist may result in respiratory irritation. When in the form of an airborne mist, refer to section 8 of this sheet for exposure limits pertaining to glycerin.
Ingestion Health injuries are not known or expected under normal use. Large oral doses may result in gastrointestinal disturbance.

Indication of any immediate medical attention and special treatment needed
Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flammable Properties
The product may ignite if exposed to heat or open flame.

Extinguishing media
Suitable Extinguishing Media Alcohol-resistant foam. Dry chemical. Carbon dioxide (CO_2). Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable Extinguishing Media Do not use a solid water stream as it may scatter and spread fire.

Special hazards arising from the substance or mixture

Hazardous Combustion Products	Thermal decomposition can lead to release of irritating gases and vapors, Acrolein, Carbon monoxide (CO), Carbon dioxide (CO_2).
Specific Hazards Arising from the Chemical	None known.
Sensitivity to mechanical impact	No information available.
Sensitivity to static discharge	No information available.

Advice for fire-fighters
Protective Equipment and Precautions for Firefighters As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health 1
Flammability
Stability and Reactivity 0
Physical hazard None known

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions
Ensure adequate ventilation.
Environmental Precautions
Prevent further leakage or spillage if safe to do so.
Methods for Clean-up
Dam up. Soak up with inert absorbent material. Prevent product from entering drains. Pick up and transfer to properly labelled containers.

7. HANDLING AND STORAGE

Handling
Do not breathe vapors or spray mist. Handle in accordance with good industrial hygiene and safety practice.
Storage
Store at temperatures between 10°C- 35°C (50°F-95°F). Keep containers dry and tightly closed to avoid moisture absorption and contamination.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits
Components with workplace control parameters.

Chemical Name	ACGIH TLV	OSHA PEL	MEXICO	NIOSH
Glycerin	TWA: 10 mg/m³ mist	TWA: 15 mg/m³ mist, total particulate TWA: 5 mg/m³ mist, respirable fraction	TWA: 10 mg/m³ mist	

Engineering Measures Ensure adequate ventilation, especially in confined areas. Apply technical measures to comply with the occupational exposure limits. However it is the duty of the user to verify this and follow given exposure limits at the workplace.

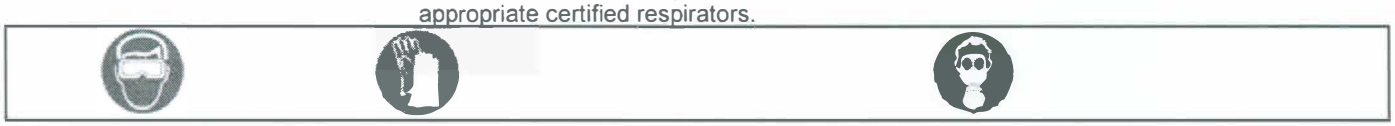
General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

Personal Protective Equipment

Eye/face Protection. If exposed to airborne dust, appropriate safety glasses with side-shields or safety goggles are recommended.

Skin and Body Protection Long sleeved clothing. Protective gloves.

Respiratory Protection In case of mist, spray or aerosol exposure wear suitable personal respiratory protection. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.



9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Clear Colorless
Physical State	Liquid
Odor	Odorless
Odor Threshold	No information available
pH	No information available
Flash Point	Approx. 199 °C / 390 °F
Autoignition Temperature	393 °C / 739 °F
Boiling point	290 °C / 554 °F
Melting/Freezing Point	18 °C / 64 °F
Decomposition temperature	No information available
Oxidizing Properties	No information available
Molecular Weight	92.09 g/mol
Water Solubility	Miscible
Evaporation Rate	No information available
Vapor Pressure	1.0033 hPa @ 50°C
Vapor Density	No information available
Density	1.262 g/cm3 @ 20C
Specific Gravity / Relative Density	1.249 (minimum)
Partition Coefficient (n-octanol/water)	-1.76

10. STABILITY AND REACTIVITY

Stability Stable under normal conditions.
Possibility of Hazardous Reactions Hazardous polymerization does not occur.
Conditions to Avoid Extremes of temperature and direct sunlight.
Incompatible Materials No materials to be especially mentioned.
Hazardous Decomposition Products Thermal decomposition can lead to release of irritating gases and vapors, Carbon monoxide (CO), Carbon dioxide (CO_2), Acrolein.

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity	Based on available data, the classification criteria are not met.			
Chemical Name	**Weight %**	**LD50 Oral**	**LD50 Dermal**	**LC50 Inhalation**
Glycerin	99-100	12600 mg/kg Rat	21900 mg/kg Rat	
Skin corrosion/irritation	Based on available data, not, or only slightly irritating.			
Serious eye damage/eye irritation	Based on available data, no evidence of serious eye damage / irritation.			
Respiratory or skin sensitisation	Based on available data, not expected to be a skin or respiratory sensitiser.			
Germ cell mutagenicity	There is no in vitro or in vivo data that indicates glycerol to have a genotoxic potential.			
Carcinogenicity	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen.			
Reproductive toxicity	Based on available data, no evidence of reproductive toxicity			
STOT - single exposure	Based on available data, the classification criteria are not met. No evidence of toxicity.			
STOT - repeated exposure	Based on available data, the classification criteria are not met. Repeated oral exposure by gavage to glycerol does not induce adverse effects other than local irritation of the gastro-intestinal tract. Glycerol inhalation exposure, irritant effects have been observed at 662 mg/m^3. At very high exposure levels glycerol mist may be injurious to the kidneys (Campanacci 1965/Ex. 1-1047). NIOSH (Ex. 8-47) states that, at high concentrations, exposure may cause hemolysis, hemoglobinuria, and renal failure. No other target organ involvement was identified.			
Aspiration hazard	Based on available data, no known aspiration hazard.			

Potential health effects

Eyes	Not expected to pose health issues for the eye.
Skin	Based on available data, not, or only slightly irritating.
Inhalation	Excessive inhalation of mist may result in respiratory irritation. When in the form of an airborne mist, refer to section 8 of this sheet for exposure limits pertaining to glycerin.
Ingestion	Health injuries are not known or expected under normal use. Large oral doses may result in gastrointestinal disturbance.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Contains no substances known to be hazardous to the environment. Contains no substances known to be not degradable in waste water treatment plants.

Chemical Name	Fresh Water Algae	Acute Fish Toxicity	Daphnia (Water flea)	Effects on micro-organisms	Other
Glycerin		LC50: 96h 51 - 57mL/L (Oncorhynchus mykiss) static	EC50: 24h 500 mg/L (Daphnia magna)		

Chemical Name	log Kow	BCF
Glycerin	-1.76	

Persistence/Degradability	Readily biodegradable.
Mobility	Miscible with water.
PBT and vPvB assessment	Based on the very low log Kow of -1.76, glycerol is not expected to bioaccumulate significantly.

13. DISPOSAL CONSIDERATIONS

Whenever possible, as rules and regulations allow, please recycle or manage materials to minimize waste.

Waste Disposal Methods	Dispose of in compliance with the laws and regulations pertaining to this product in your jurisdiction. Should not be released into the environment.
Contaminated Packaging	Empty containers should be decontaminated and taken for local recycling, recovery or waste disposal.

14. TRANSPORT INFORMATION

Domestic transport regulations (USA)
DOT Not regulated

Domestic transport regulations (Canada)
TDG Not regulated

Domestic transport regulations (Mexico)
MEX Not regulated

International transport regulations
ICAO Not regulated
IATA Not regulated
IMDG/IMO Not regulated

15. REGULATORY INFORMATION

International Inventories
The components of this product are reported in the following inventories:

Chemical Name	TSCA	DSL	NDSL	EINECS	ELINCS	AICS	ENCS ISHL	CHINA	PICCS	KECL	NZIoC
Glycerin	Yes	Yes	No	Yes 200-289-5	No	Yes	Yes (7)-338 (2)-242	Yes	Yes	Yes KE-29297	Yes

USA

Federal Regulations

Ozone Depleting Substances:
No Class I or Class II material is known to be used in the manufacture of, or contained in, this product.

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product is not known to contain any chemicals which are subject to the reporting requirements of the Act or regulations contained in 40 CFR 372.

CERCLA/SARA 103-302
Sections 103-302 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product is not known to contain any chemicals which are subject to the reporting requirements of the Act or regulations contained in 40 CFR 103-302.

SARA 311/312 Hazardous Categorization

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	No

Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 63)
This product is not known to contain any HAPS.

State Regulations

California Proposition 65
This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins under California Proposition 65 at levels which would require a warning under the statute.

State Right-to-Know
Component Information.

Chemical Name	Weight %	Massachusetts	Minnesota	New Jersey	Pennsylvania
Glycerin	99-100	Yes	Yes	Yes 3319	Yes

Canada

WHMIS Product Classification
Not a WHMIS controlled product.

WHMIS Ingredient Disclosure List IDL
No known component is listed on the WHMIS ingredients disclosure list.

(NPRI) Canadian National Pollutant Release Inventory
Component Information

Chemical Name	Weight %	NPRI
Glycerin	99-100	Part 4 Substance

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the CPR.

Mexico

Mexico - Grade	Slight risk, Grade 1

16. OTHER INFORMATION

Prepared By:	ADM Fuels & Industrials
Original Preparation Date:	09-Jul-2009
Revision Date:	11-Sep-2013
Revision Number:	2
Reason for revision:	This data sheet contains changes from the previous version in section(s) 15. This version replaces all previous versions.

Abbreviations and acronyms
ACGIH TLV - American Conference of Governmental Industrial Hygienists Threshold Limit Values
AICS - Australian Inventory of Chemical Substances (Australia)
CAS - Chemical Abstract Service
CHINA - Chinese Inventory of Existing Chemical Substances (China)
DOT - U.S. Department of Transportation
DSL - Domestic Substance List (Canada)
EC50 - Half maximal effective concentration
EINECS - European Inventory of Existing Commercial Chemical Substances (EU)
ELINCS - European List of Notified Chemical Substances (EU)
ENCS - Existing and New Chemical Substances (Japan) / ISHL - Industrial Health and Safety Law (Japan)
GHS - Globally Harmonized System of Classification and Labelling of Chemicals
IATA - International Air Transport Association Dangerous Goods Regulations
ICAO - International Civil Aviation Organisation
ICL - In Commerce List (Canada)
IMDG - International Maritime Dangerous Goods Code
IMO - International Maritime Organization
KECL - Korean Existing and Evaluated Chemical Substances (Korea)
LC50 - Lethal concentration that produces fatalities in 50% of a given test population
LD50 - Median lethal dose of a given test population
MEX - NOM-002-SCT/2003 List of Hazardous Substances and Materials Most Commonly Transported
MEXICO - Mexico Occupational Exposure Limits
NDSL - Non Domestic Substances List (Canada)
NFPA - National Fire Protection Association
NIOSH - National Institute of Occupational Safety and Health
NOAEL - No Observed Adverse Effect Level
NZIoC - New Zealand Inventory of Chemicals (New Zealand)
OECD - Organisation for Economic Co-operation and Development
OSHA - Occupational Safety & Health Administration
OSHA PEL - Occupational Safety and Health Administration Permissible Exposure Limits
PICCS - Inventory of Chemicals and Chemical Substances (Philippines)
STOT - Specific Target Organ Toxicity
TDG - Transportation of Dangerous Goods (Transport Canada)
TSCA - Toxic Substances Control Act, Section 8(b) Inventory (USA)
TWA - Time Weighted Average: Average concentration that should not be exceeded during a work day (usually 8-hours)
WHMIS - Workplace Hazardous Materials Information System
vPvB - Very Persistent and Very Bioaccumulative

The information provided on this (M)SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of sheet