SAFETY DATA SHEET

SECTION 1) CHEMICAL PRODUCT AND SUPPLIER'S IDENTIFICATION

CAS Number:	107-22-2		
Product Name:	Glyoxal 40%		
Revision Date:	Mar 15, 2018	**Date Printed:**	Mar 16, 2018
Version:	2.0	**Supersedes Date:**	Jul 05, 2017
Manufacturer's Name:	Thames River Chemical Corp.		
Address:	5230 Harvester Road Burlington, ON, CA, L7L 4X4		
Emergency Phone:	CHEMTREC (800) 424-9300		
Information Phone Number:	905-681-5353		
Fax:	905-681-5377		

Product/Recommended Uses: For laboratory or industrial use only.

SECTION 2) HAZARDS IDENTIFICATION

Classification

Acute toxicity Oral - Category 4

Eye Irritation - Category 2B

Germ Cell Mutagenicity - Category 2

Skin Irritation - Category 2

Skin Sensitizer - Category 1B

Specific Target Organ Toxicity - Single Exposure - Category 3

Pictograms

Signal Word

Warning

Hazard Statements - Health

Harmful if swallowed

Causes eye irritation

Suspected of causing genetic defects.

Causes skin irritation

May cause an allergic skin reaction

Precautionary Statements - General

If medical advice is needed, have product container or label at hand.

Keep out of reach of children.

Read label before use.

Precautionary Statements - Prevention

Wash thoroughly/Wash hands thoroughly after handling.

Do not eat, drink or smoke when using this product.

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Wear protective gloves/protective clothing/eye protection/face protection.

Avoid breathing dust/fume/gas/mist/vapors/spray.

Contaminated work clothing should not be allowed out of the workplace.

Precautionary Statements - Response

IF SWALLOWED: Call a POISON CENTER or doctor, if you feel unwell.

Rinse mouth.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

IF exposed or concerned: Get medical advice/attention.

IF ON SKIN: Wash with plenty of water and soap.

Specific treatment (see first-aid on the SDS).

If skin irritation occurs: Get medical advice/attention.

Take off contaminated clothing. And wash it before reuse.

If skin irritation or a rash occurs: Get medical advice/attention.

Precautionary Statements - Storage

Store locked up.

Precautionary Statements - Disposal

Dispose of contents/container in accordance with local/national/international regulation. Waste management should be in full compliance with national, regional and local laws.

Physical Hazards Not Otherwise Classified

No Data Available

Health Hazards Not Otherwise Classified

No Data Available

SECTION 3) COMPOSITION/INFORMATION ON INGREDIENTS

CAS	Chemical Name	% By Weight
0007732-18-5	WATER	57% - 60%
0000107-22-2	ETHANEDIOL	39.5% - 40.5%
0000107-21-1	ETHYLENE GLYCOL	0.0% - 2.5%

Specific chemical identity and/or exact percentage (concentration) of the composition has been withheld to protect confidentiality.

SECTION 4) FIRST-AID MEASURES

Inhalation

Remove source of exposure or move person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

Eye Contact

Rinse eyes cautiously with lukewarm, gently flowing water for several minutes, while holding the eyelids open. Remove contact lenses, if present and easy to do. Continue rinsing for a duration of 15-20 minutes or until medical aid is available. If irritation occurs, cautiously rinse eyes with lukewarm, gently flowing water for 5 minutes, while holding the eyelids open. Immediate medical attention required.

Skin Contact

Take off contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Rinse/wash with lukewarm, gently flowing water and mild soap for 5 minutes or until product is removed. If skin irritation occurs or you feel unwell: Get medical advice/attention.
Wash contaminated clothing before re-use or discard.

Ingestion

Do NOT induce vomiting. If vomiting occurs naturally, lie on your side, in the recovery position. Get medical advice/attention immediately.

Most Important Symptoms and Effects, Both Acute and Delayed

No Data Available

Indication of Any Immediate Medical Attention and Special Treatment Needed

No Data Available

SECTION 5) FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Small Fire : Dry chemical, foam, carbon dioxide, water-spray or alcohol-resistant foam. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Large Fire: Water spray, fog or alcohol-resistant foam.

Unsuitable Extinguishing Media

Do not use straight stream of water.

Specific Hazards in Case of Fire

Nitrogen oxides or carbon oxides may be released when product burns.

Fire-fighting Procedures

Isolate immediate hazard area and keep unauthorized personnel out. Move undamaged containers from immediate hazard area if it can be done safely.

Special Protective Actions

Wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

SECTION 6) ACCIDENTAL RELEASE MEASURES

Emergency Procedure

Isolate hazard area and keep unauthorized personnel away. Stay uphill and/or upstream. Do not touch damaged containers or spilled materials unless wearing appropriate protective clothing. Ventilate closed spaces before entering.

Recommended Equipment

Wear chemical protective clothing.

Personal Precautions

Avoid breathing vapor or mist. Avoid contact with skin, eye or clothing.

Environmental Precautions

Stop spill/release if it can be done safely. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems and natural waterways by using sand, earth, or other appropriate barriers. Dike far ahead of liquid spill for later disposal.

Methods and Materials for Containment and Cleaning up

Absorb Liquids in vermiculite, dry sand, earth, or similar inert material and deposit in sealed containers for disposal.

SECTION 7) HANDLING AND STORAGE

General

Wash hands after use. Do not get in eyes, on skin or on clothing. Do not breathe vapors or mists. Use good personal hygiene practices. Eating, drinking and smoking in work areas is prohibited. Remove contaminated clothing and protective equipment before entering eating areas. Eyewash stations and showers should be available in areas where this material is used and stored All containers must be properly labelled.

Storage stability:
Storage temperature: <50°C
Product must be protected from exceeding the indicated temperature.
Storage duration: 6 Months
May yellow after lengthy storage.
During the storage, a product characteristic clouding or crystallin precipitation of the trimeric glyoxal hydrate may occur. The process is reversible if warmed up to a mild temperature (max 40°C).

Ventilation Requirements

Use only with adequate ventilation to control air contaminants to their exposure limits.

Storage Room Requirements

Store in dry, cool areas, out of direct sunlight and away from other sources of heat. Empty container retain residue and may be dangerous.

SECTION 8) EXPOSURE CONTROLS/PERSONAL PROTECTION

Eye protection

Wear indirect-vent, impact and splash resistant goggles when working with liquids

Skin Protection

Use of gloves approved to relevant standards made from the following materials may provide suitable chemical protection: PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness, dexterity. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory Protection

If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker, a respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 should be followed. Check with respiratory protective equipment suppliers.

Appropriate Engineering Controls

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value.

Chemical Name	CANsmg	CANsppm	CANtmg	CANtppm	OSHA STEL (mg/m3)	OSHA STEL (ppm)	OSHA TWA (mg/m3)	OSHA TWA (ppm)	OSHA Carcinogen	OSHA Tables (Z1, Z2, Z3)	OSHA Skin designation	ACGIH STEL (mg/m3)
ETHANEDIOL												
ETHYLENE GLYCOL												10(I, H)

Chemical Name	ACGIH STEL (ppm)	ACGIH TWA (mg/m3)	ACGIH TWA (ppm)	ACGIH TLV Basis	ACGIH Carcinogen	ACGIH Notations
ETHANEDIOL		0.1 (IFV)		URT irr; larynx metaplasia	A4	DSEN; A4
ETHYLENE GLYCOL	50(V)		25(V)	URT irr	A4	A4

(IFV) - Inhalable fraction and vapor, A4 - Not Classifiable as a Human Carcinogen, DSEN - Dermal sensitization, irr - Irritation, URT - Upper respiratory tract

SECTION 9) PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Density	10.60 lb/gal
Specific Gravity	1.27

Appearance	colouorless or pale yellow, liquid
Odor Description	faint odour
Odor Threshold	N/A
pH	2 - 3.5
Melting Point	-14 °C
Low Boiling Point	103 °C
High Boiling Point	N/A
Flash Point	non flammable

Vapor Pressure	20.2 hPa (20°C)
Vapor Density	No Data Available
Evaporation Rate	No Data Available
Upper Explosion Level	N/A
Lower Explosion Level	N/A
Water Solubility	completely soluble
Coefficient Water/Oil	No Data Available
Viscosity	5-10 mPa.s (dynamic)

SECTION 10) STABILITY AND REACTIVITY

Reactivity

Reacts with strong alkalies: exothermic reaction.

Stability

Stable under normal storage and handling conditions.

Conditions to Avoid

Temperature: >50 degrees Celsius

Hazardous Reactions/Polymerization

Hazardous polymerization will not occur.

Incompatible Materials

Strong alkalies

Hazardous Decomposition Products

No hazardous decomposition products if stored and handled as prescribed/indicated.

Thermal decomposition: approx. > 120 °C

SECTION 11) TOXICOLOGICAL INFORMATION

Likely Route of Exposure

Inhalation, ingestion, skin absorption

Acute Toxicity

Harmful if swallowed

Oral:
Type of value: LD50
Species: rat (male/female)
Value: > 5,000 mg/kg (OECD Guideline 401)
The final product has not been tested. The statement has been derived from the properties of the individual components.

Type of value: LD50
Species: rat (male/female)
Value: 5,631 mg/kg (OECD Guideline 401)
The final product has not been tested. The statement has been derived from the properties of the individual components.

Inhalation:
Type of value: LC50
Species: rat (male/female)
Value: 5.79 mg/l (OECD Guideline 403)
Exposure time: 4 h
An aerosol was tested.
The final product has not been tested. The statement has been derived from the properties of the individual components.

Dermal:
Type of value: LD50
Species: rat (male/female)
Value: > 2,000 mg/kg (OECD Guideline 402)
Limit concentration test only (LIMIT test).

Aspiration Hazard

No Data Available

Carcinogenicity

No Data Available

Germ Cell Mutagenicity

Suspected of causing genetic defects.

Reproductive Toxicity

No Data Available

Respiratory/Skin Sensitization

May cause an allergic skin reaction

Serious Eye Damage/Irritation

Causes eye irritation

Skin Corrosion/Irritation

Causes skin irritation

Specific Target Organ Toxicity - Repeated Exposure

No Data Available

Specific Target Organ Toxicity - Single Exposure

No Data Available

0000107-21-1 ETHYLENE GLYCOL

LD50 (oral, rat): 5.89 g/kg; 8.54 g/kg; 13.0 g/kg (5)
LD50 (oral, mouse): 7.5 g/kg; 15.28 g/kg (5,6)
LD50 (oral, guinea pig): 6.6 g/kg; 11.0 g/kg (5)
LD50 (oral, rabbit): 5.0 g/kg (5)
LD50 (dermal, rabbit): 9.5 g/kg (6)

SECTION 12) ECOLOGICAL INFORMATION

Toxicity

Fish

Acute:
DIN 38412 Part 15 static
Leuciscus idus/LC50 (96 h): > 460 - < 680 mg/l
Nominal concentration. The data have been deduced from values for a preparation or mixture with a lower substance concentration.

Chronic:
OPP 72-4 (EPA-Guideline) Flow through.
Pimephales promelas /NOEC (34 d): 112 mg/l
The data have been calculated from values for a preparation with a lower substance concentration.

Aquatic invertebrates

Acute:
Directive 79/831/EEC static
Daphnia magna/EC50 (48 h): 404 mg/l
Nominal concentration. The data have been deduced from values for a preparation or mixture with a lower substance concentration.

Chronic:
OECD Guideline 211 semistatic Daphnia magna (NOEC) 21 d 3.19 mg/l
The data have been calculated from values for a preparation with a lower substance concentration.

Aquatic plants

Toxicity to aquatic plants:
OECD Guideline 201 static
green algae/EC50 (72 h): > 100 mg/l
Nominal concentration. The data have been calculated from values for a preparation with a lower substance concentration.

Microorganisms

Toxicity to microorganisms:
OECD Guideline 209 static
activated sludge/EC20 (0.5 h): > 1,000 mg/l

Mobility in Soil

The substance will not evaporate into the atmosphere from the water surface.
Absorption into solid soil is not expected.

Bio-accumulative Potential

Significant accumulation in organisms is not to be expected.

Bioconcentration factor: 3.2, Fish (calculated)

Persistence and Degradability

Readily biodegradable

Other Adverse Effects

No Data Available

SECTION 13) DISPOSAL CONSIDERATIONS

Waste Disposal

Empty Containers retain product residue which may exhibit hazards of material, therefore do not pressurize, cut, glaze, weld or use for any other purposes. It is the responsibility of the user of the product to determine at the time of disposal whether the product meets local criteria for hazardous waste. Waste management should be in full compliance with national, provincial and local laws.

SECTION 14) TRANSPORT INFORMATION

Transport Canada Information

UN number: Not Regulated

Hazard class: N/A

Proper shipping name: N/A

Packaging group: N/A

U.S. DOT Information

UN number: Not Regulated

Hazard class: N/A

Packaging group: N/A

Proper shipping name: N/A

SECTION 15) REGULATORY INFORMATION

CAS	Chemical Name	% By Weight	Regulation List
0007732-18-5	WATER	57% - 60%	DSL,TSCA,EU_EC_Inventory - EC Inventory
0000107-22-2	ETHANEDIOL	39.5% - 40.5%	DSL,TSCA
0000107-21-1	ETHYLENE GLYCOL	0.0% - 2.5%	DSL,TSCA,CA_Prop65 - California Proposition 65,EU_EC_Inventory - EC Inventory

SECTION 16) OTHER INFORMATION

Glossary

ACGIH- American Conference of Governmental Industrial Hygienists; ANSI- American National Standards Institute; Canadian TDG- Canadian Transportation of Dangerous Goods; CANsmg or CANsppm - Canadian Short Term Exposure Level in mg/L or in ppm; CANtmg or CANtppm - Canadian Time Weighted Average in mg/L or in ppm; CAS- Chemical Abstract Service; Chemtrec- Chemical Transportation Emergency Center(US); CHIP- Chemical Hazard Information and Packaging; DSL- Domestic Substances List; EC- Equivalent Concentration; EH40 (UK)- HSE Guidance Note EH40 Occupational Exposure Limits; EPCRA- Emergency Planning and Community Right-To-Know Act; ESL Effects screening levels; HMIS- Hazardous Material Information Service; LC- Lethal Concentration; LD- Lethal Dose; NFPA- National Fire Protection Association; OEL- Occupational Exposure Limits; OSHA- Occupational Safety and Health Administration, US Department of Labor; PEL- Permissible Exposure Limit; SARA (Title III)- Superfund Amendments and Reauthorization Act; SARA 313- Superfund Amendments and Reauthorization Act, Section 313; SCBA- Self Contained Breathing Apparatus; STEL-Short Term Exposure Limit; TCEQ Texas Commission on Environmental Quality; TLV- Threshold Limit Value; TSCA- Toxic Substances Control Act Public Law 94-469; TWA Time Weighted Value; US DOT- US Department of Transportation; WHMIS- Workplace Hazardous Materials Information System.

Version 2.0:

Revision Date: Jul 05, 2017

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