COMET CHEMICAL COMPANY LTD.

Comet Chemical Company Ltd.
3463 Thomas Street
Innisfill, ON, Canada, L9S 3W4
Telephone: (705) 436 5580

SAFETY DATA SHEET

SECTION 1. IDENTIFICATION

Product identifier used on the label
: **Citric Acid**

Other means of identification : None reported.

Recommended use of the chemical and restrictions on use
: Preservative /Additive
Use pattern: Professional Use Only
Recommended restrictions: None known.

Chemical family : Pure substance

Name, address, and telephone number of the supplier:

Comet Chemical Company Ltd.
3463 Thomas Street
Innisfill, ON, Canada
L9S 3W4
Supplier's Telephone # : 705-436-5580
24 Hr. Emergency Tel # : GFL Environmental - 1-888-772-2543

Name, address, and telephone number of the manufacturer:
Refer to supplier

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Fine, white to off-white granules. Odourless.

This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Hazard classification:

Combustible Dust
Eye Damage - Category 1

Label elements

Hazard pictogram(s)

Signal Word

DANGER!

Hazard statement(s)

May form combustible dust concentrations in air.
Causes serious eye damage.

Precautionary statement(s)

Wear eye protection/face protection.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER or doctor/physician.

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Other hazards

Other hazards which do not result in classification:
May cause skin irritation. Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough. Ingestion of large amounts may cause stomach irritation.

Environmental precautions:
Avoid release to the environment. See ECOLOGICAL INFORMATION, Section 12.

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SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance

Chemical name	Common name and synonyms	CAS #	Concentration (% by weight)
1,2,3-Propanetricarboxylic acid, 2-hydroxy-	2-Hydroxypropanetricarboxylic acid Citric acid	77-92-9	**100.00**

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

Ingestion : Do not induce vomiting. Rinse mouth thoroughly. Never give anything by mouth to an unconscious person. Get medical attention if symptoms persist.

Inhalation : Immediately remove person to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin contact : Wash affected areas with soap and water.Take off contaminated clothing and wash before re-use. Get medical attention if irritation develops and persists.

Eye contact : Duration of rinsing should be at least 20 minutes. Remove contact lenses, if present and easy to do. If irritation or symptoms develop, seek medical attention.

Most important symptoms and effects, both acute and delayed

: Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.Direct skin contact may cause temporary redness.Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough.Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Indication of any immediate medical attention and special treatment needed

: Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

: Use media suitable to the surrounding fire such as water fog or fine spray, alcohol foams, carbon dioxide and dry chemical.

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 / Conditions of flammability

: Dust may form explosive mixture in air.

Flammability classification (OSHA 29 CFR 1910.106)

: Not flammable.

Hazardous combustion products

: Carbon dioxide and carbon monoxide.

Special protective equipment and precautions for firefighters

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Protective equipment for fire-fighters

: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Do not enter without wearing specialized protective equipment suitable for the situation. Firefighter's normal protective clothing (Bunker Gear) will not provide adequate protection. A full-body encapsulating chemical protective suit with positive pressure self-contained breathing apparatus (NIOSH approved or equivalent) may be necessary.

Special fire-fighting procedures

: Move containers from fire area if safe to do so.Water spray may be useful in cooling equipment exposed to heat and flame. Dike for water control.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

: All persons dealing with clean-up should wear the appropriate protective equipment including self-contained breathing apparatus. Keep all other personnel upwind and away from the spill/release. Restrict access to area until completion of clean-up. Refer to Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION, for additional information on acceptable personal protective equipment.

Environmental precautions : Do not allow material to contaminate ground water system. For large spills, dike the area to prevent spreading.

Methods and material for containment and cleaning up

: Ventilate the area. Prevent further leakage or spillage if safe to do so. Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation.Contact the proper local authorities.

Special spill response procedures

: In Canada: For 24-hour emergency assistance, call: 1-613-996-6666 (CANUTEC). US CERCLA Reportable quantity (RQ): None reportable.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

: Use in a well-ventilated area. Wear protective gloves and eye/face protection. Avoid dust formation. Avoid breathing dust and fume. Use only non-sparking tools with this material. Avoid contact with skin, eyes and clothing. Keep away from heat and flame. Keep away from incompatibles. Label containers appropriately. Wash thoroughly after handling. Keep containers closed when not in use.

Conditions for safe storage : Store in a cool, dry, well-ventilated area. Store away from incompatibles and out of direct sunlight. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. No smoking in the area. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces.

Incompatible materials : Metals; caustics

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:

Chemical Name	ACGIH TLV		OSHA PEL	
	TWA	STEL	PEL	STEL
1,2,3-Propanetricarboxylic acid, 2-hydroxy-	N/Av	N/Av	15 mg/m3	5 mg/m³ (respirable)

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Exposure controls

Ventilation and engineering measures
: Provide exhaust ventilation or other engineering controls to keep the airborne concentration of vapours below their respective threshold limit value.

Respiratory protection : Respiratory protection is required if the concentrations exceed the TLV. Use a NIOSH approved dust respirator if dust levels exceed exposure limits. Seek advice from respiratory protection specialists.

Skin protection : Wear protective gloves. The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye / face protection : Chemical goggles must be worn to prevent dusts from entering the eyes.

Other protective equipment : Wear appropriate protective clothing to prevent skin contact, such as coveralls or long sleeved shirt, long pants, and shoes and socks. Wear protective gloves.An eyewash station and safety shower should be made available in the immediate working area. Other equipment may be required depending on workplace standards.

General hygiene considerations
: Avoid breathing dust and fume. Avoid contact with skin, eyes and clothing. Do not eat, drink, smoke or use cosmetics while working with this product. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove soiled clothing and wash it thoroughly before reuse.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State : Liquid.
Colour : Clear; Colourless
Odour : Odourless.
Odour threshold : No information available.
pH : No information available.
Melting Point/Freezing point : 153 °C (307 °F)
Initial boiling point and boiling range
: Not applicable.
Flash point : Not applicable.
Flashpoint (Method) : Not applicable.
Evaporation rate (BuAe = 1) : No information available.
Flammability : The product is not flammable.
Lower explosion or flammability limit (% by vol.)
: N/Ap
Upper explosion or flammability limit (% by vol.)
: N/Ap
Oxidizing properties : None known.
Explosive properties : Not explosive
Vapour pressure : No information available.
Relative vapour density : No information available.
Relative density / Specific gravity
: Not available.
Solubility in water : Soluble (59.2 g/100g) @20°C
Other solubility(ies) : Moderately soluble in methanol.
Partition coefficient: n-octanol/water or Coefficient of water/oil distribution
: Not applicable.
Auto-ignition temperature : No information available.
Decomposition temperature : No information available.
Viscosity : Not applicable.
Particle characteristics : Not applicable.

Volatiles (% by weight) : No information available.

Volatile organic Compounds (VOC's)
: No information available.

Absolute pressure of container
: N/Ap

Flame projection length : N/Ap

Other physical/chemical comments
: Bulk Density:Granular = 56, Fine = 54, Powder = 32 (LB/FT3)
Molecular Weight: 192.13
Molecular formula: C6H8O7

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not normally reactive. Aqueous solutions may react with some metals (e.g. Aluminum, zinc, tin and their alloys) to release flammable hydrogen gas.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions
: Hazardous polymerization does not occur.

Conditions to avoid : Ensure adequate ventilation, especially in confined areas. Avoid contact with incompatible materials. Avoid dust formation.

Incompatible materials : Incompatible materials (see Section 7).

Hazardous decomposition products
: None known, refer to hazardous combustion products in Section 5.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry inhalation : YES

Routes of entry skin & eye : YES

Routes of entry Ingestion : YES

Routes of exposure skin absorption
: NO

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation
: Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough.

Sign and symptoms ingestion
: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Sign and symptoms skin : May cause mild skin irritation on prolonged contact.

Sign and symptoms eyes : Causes serious eye damage. Symptoms may include a burning sensation, pain, watering, and/or changes in vision (blurred vision).

Potential Chronic Health Effects
: Prolonged exposure can cause redness, swelling, itching, cracking of the skin, dermatitis and sensitization.

Mutagenicity : Not expected to be mutagenic in humans.

Carcinogenicity : No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.

Reproductive effects & Teratogenicity
: Not expected to have other reproductive effects.

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Sensitization to material : Not expected to be a skin or respiratory sensitizer.

Specific target organ effects : The substance or mixture is not classified as specific target organ toxicant, single exposure.

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Medical conditions aggravated by overexposure

: Pre-existing skin, eye and respiratory disorders.

Synergistic materials : No information available.

Toxicological data : See below for toxicological data on the substance.

Chemical name	LC_{50}(4hr) inh, rat	LD_{50} (Oral, rat)	LD_{50} (Rabbit, dermal)
1,2,3-Propanetricarboxylic acid, 2-hydroxy-	N/Av	3000 mg/kg	> 2000 mg/kg (No mortality)

Other important toxicological hazards

: See Section 3 for additional information.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity : The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters.

See the following tables for individual ingredient ecotoxicity data.

Ecotoxicity data:

Ingredients	CAS #	Toxicity to Fish		
		LC50 / 96h	NOEC / 21 day	M Factor
1,2,3-Propanetricarboxylic acid, 2-hydroxy-	77-92-9	1516 mg/L (Bluegill sunfish)	N/Av	None.

Ingredients	CAS #	Toxicity to Daphnia		
		EC50 / 48h	NOEC / 21 day	M Factor
1,2,3-Propanetricarboxylic acid, 2-hydroxy-	77-92-9	1535 mg/L/24hr (Daphnia magna)	N/Av	None.

Ingredients	CAS #	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
1,2,3-Propanetricarboxylic acid, 2-hydroxy-	77-92-9	> 18 000 mg/L (Green algae) (Read-across)	N/Av	None.

Persistence and degradability

: Readily biodegradable

Bioaccumulation potential : No information available.

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Components	Partition coefficient n-octanol/water (log Kow)	Bioconcentration factor (BCF)
1,2,3-Propanetricarboxylic acid, 2-hydroxy- (CAS 77-92-9)	- 1.72	3

Mobility in soil : High water solubility indicates a high mobility in soil.

Other Adverse Environmental effects

: No data is available on the product itself.

SECTION 13. DISPOSAL CONSIDERATIONS

Handling for Disposal : Handle waste according to recommendations in Section 7. Empty containers may contain hazardous residues.

Methods of Disposal : Dispose in accordance with all applicable federal, state, provincial and local regulations.

RCRA : If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method.

SECTION 14. TRANSPORT INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
TDG	None.	Not regulated.	not regulated	none	
TDG Additional information	None.				
49CFR/DOT	None.	Not regulated.	not regulated	none	
49CFR/DOT Additional information	None.				
IMDG	None.	Not regulated.	not regulated	none	
IMDG Additional information	None.				
ICAO/IATA	None.	Not regulated.	not regulated	none	
ICAO/IATA Additional information	None.				

Special precautions for user : Appropriate advice on safety must accompany the package.

Environmental hazards : See Section 12 for more environmental information.

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SECTION 15 - REGULATORY INFORMATION

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

Ingredients	CAS #	TSCA Inventory	CERCLA Reportable Quantity(RQ) (40 CFR 117.302):	SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355:	SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical	
					Toxic Chemical	de Minimis Concentration
1,2,3-Propanetricarboxylic acid, 2-hydroxy-	77-92-9	Yes	None.	None.	No	N/Ap

SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: Eye irritation; Combustible Dust

US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

Ingredients	CAS #	California Proposition 65		State "Right to Know" Lists					
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
1,2,3-Propanetricarboxylic acid, 2-hydroxy-	77-92-9	No	N/Ap	No	No	No	No	No	No

Canadian Information:

All ingredients are present on the DSL.

International Information:

Components listed below are present on the following International Inventory list:

Ingredients	CAS #	European EINECs	Australia AICS	Philippines PICCS	Japan ENCS	Korea KECI/KECL	China IECSC	NewZealand IOC
1,2,3-Propanetricarboxylic acid, 2-hydroxy-	77-92-9	201-069-1	Present	Present	(2)-1318	KE-20831	Present	HSR003138

SECTION 16. OTHER INFORMATION

Legend : ACGIH: American Conference of Governmental Industrial Hygienists
CAS: Chemical Abstract Services
CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR: Code of Federal Regulations
CNS: Central Nervous System
DOT: Department of Transportation
EPA: Environmental Protection Agency
EINECS: European Inventory of Existing Commercial chemical Substances
IARC: International Agency for Research on Cancer
IBC: Intermediate Bulk Container
IMDG: International Maritime Dangerous Goods
Inh: Inhalation
LC: Lethal Concentration

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LD: Lethal Dose
N/Ap: Not Applicable
N/Av: Not Available
NIOSH: National Institute of Occupational Safety and Health
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PEL: Permissible exposure limit
RCRA: Resource Conservation and Recovery Act
RTECS: Registry of Toxic Effects of Chemical Substances
SARA: Superfund Amendments and Reauthorization Act
STEL: Short Term Exposure Limit
TDG: Canadian Transportation of Dangerous Goods Act & Regulations
TLV: Threshold Limit Values
TWA: Time Weighted Average
WHMIS: Workplace Hazardous Materials Identification System

References : 1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices
2. ECHA - European Chemical Agency
3. Canadian Centre for Occupational Health and Safety, CCInfoWeb databases
4. Safety Data Sheets from manufacturer.
5. US EPA Title III List of Lists
6. California Proposition 65 List
7. OECD - The Global Portal to Information on Chemical Substances - eChemPortal

Preparation Date (mm/dd/yyyy)
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Revision Information : Updated SDS to the comply with new 2023 WHMIS format

Other special considerations for handling
: Provide adequate information, instruction and training for operators.

Prepared for: Comet Chemical Company Ltd. 3463 Thomas Street Innisfill, ON L9S 3W4 Information (M-F 8:00-5:00): 705-436-5580 www.cometchemical.com	COMET COMET CHEMICAL COMPANY LTD.
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