COMET CHEMICAL COMPANY LTD.

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

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SECTION 1. IDENTIFICATION

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

Other means of identification : Not available.

Recommended use of the chemical and restrictions on use
: Reagent; Chemical intermediate.
Use pattern: Professional Use Only
Restriction on use: None known

Chemical family : mineral acids

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

Clear to yellow liquid. Acrid odor.

Most important hazards: Corrosive to metals. Corrosive to all tissues.

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:
Corrosive to Metals - Category 1
Skin corrosion - Category 1
Eye Damage - Category 1
Specific target organ toxicity, single exposure - Category 3 (respiratory)

Label elements

Hazard pictogram(s)

Signal Word

DANGER!

Hazard statement(s)

May be corrosive to metals.
Causes severe skin burns and eye damage.
May cause respiratory irritation.

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Precautionary statement(s)

Do not breathe mist or vapor.
Keep only in original packaging.
Wash thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/clothing and eye/face protection.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
Wash contaminated clothing before reuse.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Immediately call a POISON CENTRE or doctor/physician.
Absorb spillage to prevent material damage.

Store in corrosive resistant container with a resistant inner liner.
Store locked up.
Store in a well-ventilated place. Keep container tightly closed.

Dispose of contents/container in accordance with local/regional/national/international regulations.

The following percentage of the mixture consists of ingredient(s) with unknown acute toxicity: 38%

Other hazards

Other hazards which do not result in classification: Ingestion can cause irritation and corrosive action in the mouth, stomach and digestive tract. Toxic fumes, gases or vapours may evolve on burning. May intensify fire; Nitric acid is an oxidizer.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Solution

Chemical name	Common name and synonyms	CAS #	Concentration (% by weight)
Nitric acid	Aqua fortis	7697-37-2	**38.00**

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

Ingestion : Seek immediate medical attention/advice. Do not induce vomiting. Have victim rinse mouth with water, then give one to two glasses of water to drink. Never give anything by mouth to an unconscious person.

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. Seek immediate medical attention/advice.

Skin contact : Remove/Take off immediately all contaminated clothing. Flush affected skin with gently flowing lukewarm water for at least 30 minutes. Do not rub area of contact. Seek immediate medical attention/advice. Wash contaminated clothing before reuse. Leather and shoes that have been contaminated with the solution may need to be destroyed.

Eye contact : Immediately flush eyes thoroughly with running water for at least 20 to 30 minutes. Seek immediate medical attention/advice.

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Most important symptoms and effects, both acute and delayed

: May cause severe eye irritation. Permanent eye damage including blindness could result. Symptoms may include redness, pain, tearing and conjunctivitis. May cause respiratory irritation. Symptoms include coughing, shortness of breath and wheezing. Ingestion can cause irritation and corrosive action in the mouth, stomach and digestive tract. Causes severe skin irritation. Symptoms may include redness, blistering, pain and swelling.

Indication of any immediate medical attention and special treatment needed

: Immediate medical attention is required. Causes chemical burns. Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

: Fires should be flooded with large amounts of water. Avoiding using other types of extinguishing materials, such as foam or dry chemicals.

Unsuitable extinguishing media

: Avoid using Carbon dioxide or other similar extinguishing agents as they are not effective in fires involving oxidizers.

Special hazards arising from the substance or mixture / Conditions of flammability

: May intensify fire; oxidizer. Substance releases oxygen when heated, which may increase the severity of an existing fire. Burning produces obnoxious and toxic fumes. Contact with most metals will generate flammable hydrogen gas. Contact with water will generate considerable heat.

Flammability classification (OSHA 29 CFR 1910.106)

: Not flammable.

Hazardous combustion products

: Oxygen; Nitrogen oxides

Special protective equipment and precautions for firefighters

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.

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 protective measures listed in sections 7 and 8.

Environmental precautions : Ensure spilled product does not enter drains, sewers, waterways, or confined spaces. For large spills, dike the area to prevent spreading.

Methods and material for containment and cleaning up

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: Ventilate area of release. Remove all sources of ignition. Stop leak if you can do so without risk. Dike for water control. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand), then place absorbent material into a container for later disposal (see Section 13). Do not use combustible absorbents, such as sawdust. Dilute acid with water and neutralize with Sodium Carbonate (soda ash) or Sodium Bicarbonate (baking soda). Allow neutralization reaction to occur in an open, unsealed container since carbon dioxide gas will be released during neutralization. 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): Nitric acid (1000 lbs / 454 kg)

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

: Do not handle until all safety precautions have been read and understood. Use only outdoors or in a well-ventilated area. Wear protective gloves/clothing and eye/face protection. Do not breathe mist or vapor. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Keep away from combustible material. Ground all equipment during handling. Never return contaminated material to its original container. Label containers appropriately. Wash thoroughly after handling. Keep containers closed when not in use. When preparing or diluting solution, always add to water, slowly and with stirring.

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. Store in corrosion-resistant containers. Do not store on wooden pallets. Protect from sunlight. Keep away from heat.

Incompatible materials : Combustible materials; Organic materials; Reactive metals; Alkalies; Reducing agents.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:

Chemical Name	ACGIH TLV		OSHA PEL	
	TWA	STEL	PEL	STEL
Nitric acid	2 ppm	4 ppm	2 ppm ; 5 mg/m³	N/Av

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. Use explosion-proof equipment.

Respiratory protection : Respiratory protection is required if the concentrations exceed the TLV. Wear a positive-pressure supplied-air respirator. Advice should be sought from respiratory protection specialists. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02.

Skin protection : Wear protective gloves/clothing. Impervious gloves must be worn when using this product. The suitability for a specific workplace should be discussed with the producers of the protective gloves. Where contact is likely, wear chemical-resistant gloves, a chemical suit, rubber boots, and chemical safety goggles plus a face shield.

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Eye / face protection	:	Wear eye/face protection. Chemical splash goggles are recommended. A full face shield may also be necessary.
Other protective equipment	:	Full protective flameproof clothing. Wear chemically protective gloves (impervious), boots, aprons, and gauntlets to prevent prolonged or repeated skin contact. 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	:	Do not breathe mist or vapor. 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 to yellow
Odour	:	Acrid odour.
Odour threshold	:	0.75-2.5 mg/m3
pH	:	<1
Melting Point/Freezing point	:	- 33°C (- 27°F)
Initial boiling point and boiling range	:	121°C (249.8°F)
Flash point	:	N/Ap
Flashpoint (Method)	:	N/Ap
Evaporation rate (BuAe = 1)	:	Not available.
Flammability	:	Not applicable.
Lower explosion or flammability limit (% by vol.)	:	N/Ap
Upper explosion or flammability limit (% by vol.)	:	N/Ap
Oxidizing properties	:	Strong oxidizer which will promote combustion. Will accelerate combustion and increase the risk of fire and explosion in combustible or flammable materials.
Explosive properties	:	May be reactive and decompose violently.
Vapour pressure	:	5.5 mmHg
Relative vapour density	:	(Air = 1) 2.2
Relative density / Specific gravity	:	1.4
Solubility in water	:	Soluble.
Other solubility(ies)	:	Not available.
Partition coefficient: n-octanol/water or Coefficient of water/oil distribution	:	N/Av
Auto-ignition temperature	:	N/Av
Decomposition temperature	:	Not available.
Viscosity	:	Not available.
Particle characteristics	:	Not applicable.
Volatiles (% by weight)	:	N/Av
Volatile organic Compounds (VOC's)	:	N/Av
Absolute pressure of container	:	N/Ap
Flame projection length	:	N/Ap

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Other physical/chemical comments

: Molecular formula: HNO3
Molecular Weight: 43.03

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Reacts vigorously, violently or explosively with many organic and inorganic chemicals, such as strong acids, acid chlorides, acid anhydrides, ketones, glycols, and organic peroxides. Corrosive in contact with metals. Contact with metals may release small amounts of flammable hydrogen gas.

Chemical stability : Dangerously reactive material. Stability depends upon many factors including temperature, pH, and the presence of impurities. Solutions that are completely free of contamination are relatively stable. May decompose violently if impurities are present.

Possibility of hazardous reactions

: No dangerous reaction known under conditions of normal use.

Conditions to avoid : Avoid heat and open flame. Ensure adequate ventilation, especially in confined areas. Avoid contact with incompatible materials. Keep out of direct sunlight. Keep away from combustible material.

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

: If product is heated or mists are formed, inhalation may cause irritation to the nose, throat and respiratory tract. Symptoms may include coughing, choking and wheezing. Inhalation of extremely high concentrations could cause pulmonary edema (fluid accumulation). Symptoms of pulmonary edema (chest pain, shortness of breath) may be delayed.

Sign and symptoms ingestion

: May cause severe irritation and corrosive damage in the mouth, throat and stomach. Symptoms may include abdominal pain, nausea, vomiting, diarrhea and collapse.

Sign and symptoms skin : Causes skin burns. Symptoms may include redness, blistering, pain and swelling.

Sign and symptoms eyes : Causes serious eye damage. Symptoms may include severe pain, tearing, redness, swelling and blurred vision. Permanent eye damage including blindness could result.

Potential Chronic Health Effects

: None known or reported by the manufacturer.

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.

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

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Specific target organ effects : Eyes, skin, respiratory system and digestive system.

Specific target organ toxicity, single exposure - Category 3 (respiratory)
May cause respiratory irritation.

Not classified as a specific target organ toxicity - repeated exposure.

Medical conditions aggravated by overexposure
: Pre-existing skin, eye and respiratory disorders.

Synergistic materials : N/Av

Toxicological data : There is no data available for this product.

Chemical name	LC_{50}(4hr) inh, rat	LD_{50} (Oral, rat)	LD_{50} (Rabbit, dermal)
Nitric acid	N/Av	N/Av	N/Av

Other important toxicological hazards
: None known or reported by the manufacturer.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity : Product may cause harm in the environment due to its low pH. Do not allow material to contaminate ground water system. See the following tables for the substance's ecotoxicity data.

Ecotoxicity data:

Ingredients	CAS #	Toxicity to Fish		
		LC50 / 96h	NOEC / 21 day	M Factor
Nitric acid	7697-37-2	72 mg/L (Mosquito fish)	N/Av	None.

Ingredients	CAS #	Toxicity to Daphnia		
		EC50 / 48h	NOEC / 21 day	M Factor
Nitric acid	7697-37-2	N/Av	N/Av	None.

Ingredients	CAS #	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
Nitric acid	7697-37-2	N/Av	N/Av	None.

Persistence and degradability
: Biodegradation is not applicable to inorganic materials.

Bioaccumulation potential : No data is available on the product itself.

Components	Partition coefficient n-octanol/water (log Kow)	Bioconcentration factor (BCF)
Nitric acid (CAS 7697-37-2)	N/Ap	N/Ap

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Mobility in soil : No data is available on the product itself.

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 retain residue (liquid and/or vapour) and can be dangerous. Do not cut, weld, drill or grind on or near this container.

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. For disposal of unused or waste material, check with local, provincial and federal environmental agencies.

SECTION 14. TRANSPORT INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
TDG	UN2031	NITRIC ACID,other than red fuming with more than 20 percent but less than 65 percent	8	II	
TDG Additional information	May be shipped as LIMITED QUANTITY when transported in quantities no larger than 1 Litre, in packages not exceeding 30 kg gross mass.				
49CFR/DOT	UN2031	NITRIC ACID, other than red fuming with more than 20 percent but less than 65 percent	8	II	
49CFR/DOT Additional information	May be shipped as LIMITED QUANTITY when transported in quantities no larger than 1 Litre, in packages not exceeding 30 kg gross mass.				
ICAO/IATA	UN2031	Nitric acid, other than red fuming with more than 20 percent but less than 65 percent	8	II	
ICAO/IATA Additional information	Refer to ICAO/IATA Packing Instruction Forbidden On Passenger Aircraft.				
IMDG	UN2031	NITRIC ACID, other than red fuming with more than 20 percent but less than 65 percent	8	II	
IMDG Additional information	Consult the IMDG regulations for exceptions.				

Special precautions for user : Keep away from heat. Appropriate advice on safety must accompany the package.

Environmental hazards : This product does not meet the criteria for an environmentally hazardous mixture, according to the IMDG Code. See ECOLOGICAL INFORMATION, Section 12.

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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
Nitric acid	7697-37-2	Yes	1000 lb/ 454 kg	1000 lb TPQ	Yes	No

SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: Corrosive to metals; Skin corrosion; Eye Damage; Specific target organ toxicity, single exposure

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
Nitric acid	7697-37-2	No	N/Ap	Yes	Yes	Yes	Yes	Yes	Yes

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
Nitric acid	7697-37-2	231-714-2	Present	Present	(1)-394	KE-25911	Present	HSR001515

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
CSA: Canadian Standards Association
DOT: Department of Transportation
HMIS: Hazardous Materials Identification System
HSDB: Hazardous Substances Data Bank
IARC: International Agency for Research on Cancer
Inh: Inhalation
LC: Lethal Concentration
LD: Lethal Dose
N/Ap: Not Applicable
N/Av: Not Available

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NFPA: National Fire Protection Association
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

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Revision No. : 2

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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