

1 Product and Company Identification

Product identifier	Cuvette Cleaner
Synonym	P19311, Cuvette cleaner/antiseptic
Product use	For use with Trojan P254 UV Photometer
Recommended restrictions	None known
Chemical family	mineral acids
Supplier information	Trojan Technologies 3020 Gore Road London, ON N5V 4T7 CA Phone: 519-457-3400 Phone: 888-220-6118
CANUTEC	Phone: 613-996-6666

2 Hazards Identification

Classification of the chemical

Brownish Yellow Liquid. Slightly pungent odour.

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).

Health & Physical Hazards	Corrosive to Metals - Category 1 Skin Corrosion/Irritation - Category 1 Serious eye damage/eye irritation - Category 1 Specific Target Organ Toxicity, Single Exposure - Category 3 (respiratory)
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WHMIS 2015 defined hazard

Hazard symbol



Signal word

DANGER!

Hazard statement

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

Precautionary statement

Prevention

Do not breathe mist or vapor.
Keep only in original packaging.
Wash thoroughly after handling.
Wear protective gloves/clothing and eye/face protection.

Response

If swallowed: Rinse mouth. DO NOT induce vomiting.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
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.

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Store in corrosive resistant container with a resistant inner liner.

Store locked up.

Store in a well-ventilated place. Keep container tightly closed.

Disposal

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: 10%

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 vapors may evolve on burning. May intensify fire; Nitric acid is an oxidizer.

3 Composition/Information on Ingredients

Chemical name	Common name and synonyms	CAS#	Concentration (% by weight)
Nitric Acid	Aqua fortis	7697-37-2	6.0 - 13.0

The % concentrations for the above listed chemicals will vary from batch to batch. Concentrations listed represent the actual concentration range for each chemical.

4 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.
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.

5 Fire Fighting Measures

Suitable extinguishing media	Fires should be flooded with large amounts of water. Avoid 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	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.

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Special protective equipment and precautions for firefighters

Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

Special fire-fighting procedures

Fight fires from a safe distance. Evacuate personnel to safe areas. Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. A full-body chemical resistant suit should be worn. Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame.

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 [Section 7](#) and [Section 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 materials for containment and cleanup

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

If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8802).

US CERCLA Reportable quantity (RQ): Nitric acid (1000 lbs / 454 kg)

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.

8 Exposure Controls/Personal Protection

Exposure Limits:	ACGIH TLV		OSHA PEL	
Chemical Name	TWA	STEL	PEL	STEL
Nitric Acid	2ppm	4ppm	2ppm; 5mg/m ³	Not Available

Exposure Controls:
Ventilation and engineering measures

Provide exhaust ventilation or other engineering controls to keep the airborne concentration of vapors below their respective threshold limit value. Use explosion-proof equipment.

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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.

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.

9 Physical and Chemical Properties

Appearance	Brownish yellow liquid.
Odor	Slightly Pungent
Odor Threshold	Not available
pH	Acidic
Melting Point / Freezing point	Not available
Initial boiling point and boiling range	Not available
Flash point	Not available
Flashpoint (Method)	Not applicable
Evaporation rate (BuAe = 1)	Not available
Flammability (solid, gas)	Not applicable
Lower flammable limit (% by vol.)	Not applicable
Upper flammable limit (% by vol.)	Not applicable
Oxidizing properties	May intensify fire; oxidizer.
Explosive properties	May be reactive and decompose violently.
Vapor pressure	Not available
Vapor density	Not available
Relative density / Specific gravity	1.096
Solubility in water	Soluble
Other solubility(ies)	Not available
Partition coefficient: n-octanol/water or Coefficient of water/oil distribution	Not available
Auto-ignition temperature	Not available
Decomposition temperature	Not available
Viscosity	Not available
Volatiles (% by weight)	100%

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Volatile organic Compounds (VOC's)	Not available
Absolute pressure of container	Not applicable
Flame projection length	Not applicable
Other physical / chemical comments:	
Molecular formula	HNO3
Molecular Weight	43.03

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	See Section 7 (Handling and Storage) for further details.
Hazardous decomposition products	None known, refer to hazardous combustion products in Section 5 .

11 Toxicological Information

Routes of exposure	Eye, Skin contact, Inhalation, Ingestion.
Signs and symptoms of short-term (acute) exposure:	
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.
Ingestion	May cause severe irritation and corrosive damage in the mouth, throat and stomach. Symptoms may include abdominal pain, nausea, vomiting, diarrhea and collapse.
Skin contact	Causes skin burns. Symptoms may include redness, blistering, pain and swelling.
Eye contact	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.
Specific target organ effects	Eyes, skin, respiratory system and digestive system. This material is not classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015). Classification: Specific Target Organ Toxicity, Single Exposure -Category 3 (respiratory). May cause respiratory irritation.
Medical conditions aggravated by overexposure	Pre-existing skin, eye and respiratory disorders.
Synergistic materials	Not available

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Toxicological data

The calculated ATE values for this mixture are:

ATE inhalation (mists) = 53.67mg/L (6%); 24.77mg/L (13%)

Chemical name	LC50(4hr) inh, rat	LD50	
		(Oral, rat)	(Rabbit, dermal)
Nitric acid	3.22mg/L/4H	Not available	Not available

Other important toxicological hazards

None known or reported by the manufacturer.

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 No	Toxicity to Fish		
		LC50 / 96h	NOEC / 21 day	M Factor
Nitric acid	7697-37-2	96 Hr LC50 Gambusia affinis: 72 mg/L	Not available	--

Ingredients	CAS No	Toxicity to Daphnia		
		EC50 / 48h	NOEC / 21 day	M Factor
Nitric acid	7697-37-2	Not available	Not available	--

Ingredients	CAS No	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
Nitric acid	7697-37-2	Not available	Not available	--

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)	0.21	Not applicable

Mobility in soil

No data is available on the product itself.

Other Adverse Environmental effects

No data is available on the product itself.

13 Disposal Information

Handling for Disposal

 Handle waste according to recommendations in [Section 7](#). Empty containers retain residue (liquid and/or vapor) 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

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, state and federal environmental agencies.

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14 Transport Information

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
TDG	UN2031	NITRIC ACID	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	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	8	II	
ICAO/IATA Additional information	Refer to ICAO/IATA Packing Instruction. Forbidden On Passenger Aircraft.				
IMDG	UN2031	NITRIC ACID	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](#).

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

This information is not available.

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 minimus Concentration
Nitric acid	7697-37-2	Yes	1000 lb / 454 kg	1000 lb TPQ	Yes	1%

SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: Immediate (Acute) health hazard; Reactive hazard.

Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

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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	Not applicable	Yes	Yes	Yes	Yes	Yes	Yes

Canadian Information:

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

Canadian WHMIS Classification: Refer to [Section 2](#) for a WHMIS Classification for this product.

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

16 Other Information

Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available. Information contained herein was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual product use are beyond control of the supplier, it is assumed that users of this material have been fully trained according to the requirements of all applicable legislation and regulatory instruments. No warranty, expressed or implied, is made and supplier will not be liable for any losses, injuries or consequential damages which may result from the use of or reliance on any information contained in this document.

NFPA Code

(Health: 3)
(Flammability: 0)
(Reactivity: 0)

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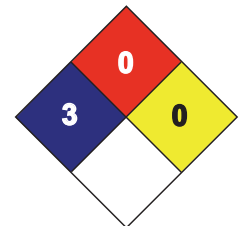
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Prepared by

Manufacturer Personnel

LEGEND	
Severe	4
Serious	3
Moderate	2
Slight	1
Minimal	0



Legend

- ACGIH: American Conference of Governmental Industrial Hygienists
- CA: California
- 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

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MA: Massachusetts
MN: Minnesota
N/Ap: Not Applicable
N/Av: Not Available
NFPA: National Fire Protection Association
NIOSH: National Institute of Occupational Safety and Health
NJ: New Jersey
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PA: Pennsylvania
PEL: Permissible exposure limit
RCRA: Resource Conservation and Recovery Act
RI: Rhode Island
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 for 2016
- 2 International Agency for Research on Cancer Monographs, searched 2016
- 3 Canadian Centre for Occupational Health and Safety, CCInfoWeb databases, 2016 (Chempendium, HSDB and RTECs).
- 4 Material Safety Data Sheets from manufacturer.
- 5 US EPA Title III List of Lists - 2016 version.
- 6 California Proposition 65 List - 2016 version
- 7 OECD - The Global Portal to Information on Chemical Substances - eChemPortal,2016.

Other Information

For an updated SDS, please contact the supplier/manufacturer listed on the first page of the document.