Infosafe No™	3CH5V	Issue Date :January 2019	RE-ISSUED by CHEMSUPP

Product Name : **PERCHLORIC ACID SOLUTION IN ACETIC ACID, 0.1M/0.1N**

Classified as hazardous

1. Identification

GHS Product Identifier	PERCHLORIC ACID SOLUTION IN ACETIC ACID, 0.1M/0.1N
Company Name	CHEM-SUPPLY PTY LTD (ABN 19 008 264 211)
Address	38 - 50 Bedford Street GILLMAN SA 5013 Australia
Telephone/Fax Number	Tel: (08) 8440-2000 Fax: (08) 8440-2001
Emergency phone number	CHEMCALL 1800 127 406 (Australia) / +64-4-917-9888 (International)
Recommended use of the chemical and restrictions on use	Laboratory reagent, analytical chemistry, titrant in volumentric analysis.

Other Names	**Name**	**Product Code**
	Perchloric acid in acetic acid, 0.1M/0.1N LR	PL360

Other Information

Chem-Supply Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon Chem-Supply Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of Chem-Supply Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

2. Hazard Identification

GHS classification of the substance/mixture	Flammable Liquids: Category 3 Skin Corrosion/Irritation: Category 1A
Signal Word (s)	DANGER
Hazard Statement (s)	H226 Flammable liquid and vapour. H314 Causes severe skin burns and eye damage.
Pictogram (s)	Corrosion, Flame

Precautionary statement – Prevention	P210 Keep away from heat/sparks/open flames/hot surfaces. – No smoking. P233 Keep container tightly closed. P241 Use explosion-proof electrical/ventilating/lighting/.../equipment. P242 Use only non-sparking tools. P243 Take precautionary measures against static discharge. P260 Do not breathe dust/fume/gas/mist/vapours/spray. P280 Wear protective gloves/protective clothing/eye protection/face protection.
Precautionary statement – Response	P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting. P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. P363 Wash contaminated clothing before reuse. P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P310 Immediately call a POISON CENTER or doctor/physician. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P370+P378 In case of fire: Use dry chemical, CO2, or water spray for extinction.
Precautionary statement – Storage	P403+P235 Store in a well-ventilated place. Keep cool. P405 Store locked up.

Precautionary statement – Disposal	P501 Dispose of contents/container to an approved waste disposal plnt.

3. Composition/information on ingredients

Chemical Characterization Liquid

Ingredients

Name	CAS	Proportion	Hazard Symbol	Risk Phrase
Acetic acid	64-19-7	99 %		
Perchloric acid	7601-90-3	1 %		

4. First-aid measures

Inhalation	If inhaled, remove from contaminated area to fresh air immediately. If breathing is difficult, give oxygen. Apply artificial respiration with a respiratory medical device if not breathing. Do not use mouth to mouth resuscitation. Immediately medical attention is required.
Ingestion	Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. DO NOT INDUCE VOMITING. Seek immediate medical advice.
Skin	Immediately remove contaminated clothing and wash affected area with water for at least 15 minutes. Ensure contaminated clothing is washed before re-use. Seek medical advice /attention depending on the severity.
Eye contact	If contact with the eye(s) occurs, wash with copious amounts of water for approximately 15 minutes holding eyelid(s) open. Take care not to rinse contaminated water into the non-affected eye. Seek medical attention.
First Aid Facilities	Maintain eyewash fountain and safety shower in work area.
Advice to Doctor	Treat symptomatically based on judgement of doctor and individual reactions of the patient.
Other Information	For advice, contact the National Poisons Information Centre (Phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor.

5. Fire-fighting measures

Hazards from Combustion Products	Vapours may form explosive mixtures with air creating an explosion hazard. May evolve irritating, poisonous/corrosive, toxic fumes in fire such as oxides of carbon and hydrogen chloride gas.
Specific Methods	Small fire: Use foam, dry chemical, CO2, or water spray. Large fire: Use foam, fog or water spray - Do not use water jets. If safe to do so, move undamaged containers from fire area. Cool containers with flooding quantities of water until well after fire is out. Avoid getting water inside containers.
Specific hazards arising from the chemical	May be ignited by heat, sparks or flame. Vapours may form explosive mixtures with air. Vapours may travel to source of ignition and flash back. Most vapours are heavier than air and will collect in low or confined areas (drains, basements, tanks). Many liquids are lighter than water. Containers may explode when heated. Vapours from runoff may create an explosion hazard. Fire will produce irritating, poisonous and/or corrosive gases. May decompose exposively when heated or involed in a fire.
Hazchem Code	•2P
Precautions in connection with Fire	Wear SCBA and fully-encapsulating, gas-tight suit when handling these substances. Structural firefighter's uniform is NOT effective for these materials.

6. Accidental release measures

Spills & Disposal	ELIMINATE all ignition sources (no smoking, flares, sparks or flame) within at least 25m. All equipment used when handling the product must be earthed. Do NOT touch or walk through spilled material. Stop leak if safe to do so. Prevent entry into waterways, drains or confined areas. Vapour-suppressing foam may be used to control vapours. Water spray may be used to knock down or divert vapour clouds. Absorb with earth, sand or other non-combustible material. Use clean, non-sparking tools to collect absorbed material and place it into loosely-covered metal or plastic containers for later disposal. SEEK EXPERT ADVICE ON HANDLING AND DISPOSAL.
Personal Precautions	Avoid contact with skin, eyes and clothing. Avoid inhalation and ingestion of product.
Personal Protection	Wear protective clothing specified for normal operations (see Section 8)
Clean-up Methods - Small Spillages	Absorb or contain liquid with sand, earth or spill control material. Shovel up using non sparking tools and place in a labelled, sealable container for subsequent safe disposal. Put leaking containers in a labelled drum or overdrum.

Environmental Precautions	Prevent from entering into drains, ditches, rivers or the sea.

7. Handling and storage

Precautions for Safe Handling	Extinguish any naked flames. Remove ignition sources. Avoid sparks. Do not smoke. Take precautionary measures against static discharges. Earth all equipment Ensure the appropriate personal protective equipment is used when handling this material. All electrical equipment must be flameproofed. Use in well ventilated areas away from all ignition sources. In case of insufficient ventilation, wear suitable respiratory equipment.
Conditions for safe storage, including any incompatabilities	Do not smoke in storage areas. Keep container tightly closed and in a cool, well-ventilated place Keep away from heat and other sources of ignition.
Corrosiveness	Corrosive in presence of stainless steel. Slightly corrosive in presence of aluminium and copper.
Storage Regulations	Refer Australian Standard AS 3780-1994 'The storage and handling of corrosive substances'. Refer Australian Standard AS 1940-2017 'The storage and handling of flammable and combustible liquids'.
Storage Temperatures	Store at room temperature (15 to 25 °C recommended).

8. Exposure controls/personal protection

Occupational exposure limit values

Name	STEL		TWA		
	mg/m3	ppm	mg/m3	ppm	Footnote
Acetic acid	37	15	25	10	

Other Exposure Information	A time weighted average (TWA) has been established for Acetic acid (Safe Work Australia) of 25 mg/m³, (10 ppm). The corresponding STEL level is 37 mg/m³, (15 ppm). The STEL (Short Term Exposure Limit) is an exposure value that should not be exceeded for more than 15 minutes and should not be repeated for more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The exposure value at the TWA is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week.
Appropriate engineering controls	In industrial situations maintain the concentrations values below the TWA. This may be achieved by process modification, use of local exhaust ventilation, capturing substances at the source, or other methods. These methods should be used in preference to personal protective equipment.
Respiratory Protection	Where ventilation is not adequate, respiratory protection may be required. Avoid breathing dust, vapours or mists. Respiratory protection should comply with AS 1716 - Respiratory Protective Devices and be selected in accordance with AS 1715 - Selection, Use and Maintenance of Respiratory Protective Devices. Filter capacity and respirator type depends on exposure levels. In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.
Eye Protection	The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.
Hand Protection	Wear gloves of impervious material conforming to AS/NZS 2161: Occupational protective gloves - Selection, use and maintenance. Final choice of appropriate glove type will vary according to individual circumstances. This can include methods of handling, and engineering controls as determined by appropriate risk assessments. Recommendation: Excellent: polyvinyl chloride gloves. Poor: Nitrile, Neoprene, NR latex.
Personal Protective Equipment	Personal protective equipment should not solely be relied upon to control risk and should only be used when all other reasonably practicable control measures do not eliminate or sufficiently minimise risk. Guidance in selecting personal protective equipment can be obtained from Australian, Australian/New Zealand or other approved standards.
Footwear	Safety boots in industrial situations is advisory, foot protection should comply with AS 2210, Occupational protective footwear - Guide to selection, care and use.
Body Protection	Clean clothing or protective clothing should be worn, preferably with an apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.
Hygiene Measures	Always wash hands before smoking, eating or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

9. Physical and chemical properties

Form	Liquid
Appearance	Clear, colourless liquid.
Odour	Of acetic acid; pungent.
Boiling Point	120°C at 1013 hPa
Solubility in Water	Soluble.
Solubility in Organic Solvents	Soluble in diethyl ether, acetone, glycerol, alcohol, Benzene and carbon tetrachloride. Practically insoluble in carbon disulfide.
Specific Gravity	1.06 g/cm3 at 20°C
pH	pH <1; pH 2.4 (1.0M solution).
Partition Coefficient: n-octanol/water	log Kow = -0.17
Flash Point	40°C (closed cup).
Flammability	Flammable liquid.
Auto-Ignition Temperature	454°C
Flammable Limits - Lower	3.3% (V)
Flammable Limits - Upper	22% (V)
Other Information	Taste: Burning taste. Heat of combustion: 874.2 kJ/mol

10. Stability and reactivity

Chemical Stability	Stable under normal use conditons. Releases heat and toxic, irritating vapors when mixed with water.
Conditions to Avoid	Heat, sources of ignition. Incompatibles.
Incompatible Materials	Oxidizing agents, chromates, soluble carbonates and phosphates, hydroxides, metals, hydrogen peroxide, peroxi compounds, permanganates (e.g. potassium permanganate), amines, alkalis, and alcohols.
Hazardous Decomposition Products	Vapours may form explosive mixtures with air creating an explosion hazard. May evolve irritating, poisonous/corrosive, toxic fumes in fire such as oxides of carbon and hydrogen chloride gas.
Hazardous Polymerization	Will not occur.

11. Toxicological Information

Acute Toxicity - Oral	LD50 (rat): 3310 mg/kg (acetic acid)
Acute Toxicity - Dermal	LD50 (rabbit): 1113 mg/k (acetic acid)
Ingestion	Corrosive. Poisonous, may be fatal if swallowed. Causes severe burns and irritation to gastrointestinal tract (mouth, oesophagus, stomach, abdomen). Symptoms include sore throat, coughing, ulceration, nausea, gastric spasms, bleeding, bloody vomiting, dyspnoea (breathing difficulty), asphyxia (suffocation), hematemesis and diarrhea which may lead to shock, pulmonary failure possible after aspiration of vomit, cardiovascular failture, acidosis, coma and death. Risk of perforation in the oesophagus and stomach! May also affect and damage the liver (impaired liver function), behaviour (convulsions, giddiness, muscular weakness), and the kidneys (Hematuria, Albuminuria, Nephrosis, acute renal failure, acute tubular necrosis).
Inhalation	Poisonous, may be fatal if inhaled. Material is extremely desctructive to the tissue of the mucous membranes and upper respiratory tract (nose, throat, lungs). Symptoms may include of burning sensation, coughing, wheezing, sneezing, chest pain, salivation, nausea, muscular weakness, shortness of breath/breathing difficulties and irritation. Inhalation may lead to inflammation and edema of the larynx and bronchi, spasms, pneumonitis and pulmonary edema. Neither odour nor degree of irritation are adequate to indicate vapor concentration.
Skin	Poisonous, may be fatal if absorbed through the skin. Causes severe skin irritation and burns. Material is extremely desctructive to the tissue of the mucous membranes and the skin. Skin inflammation is characterized by itching, scaling, reddening and blistering.

Eye	Causes severe irritation and burns to eyes. Material is extremely destructive to the tissue of the mucous membranes and eyes. Inflammation of the eye is characterised by redness, watering, and itching. Risk of blindness! Risk of corneal clouding!
Carcinogenicity	Not listed in the IARC Monographs.
Chronic Effects	Prolonged or repeated exposure may result in lung tissue damage (such as bronchial infection, pulmonary edema) and corrosion (ulceration) of the mucous membranes. Swallowing can cause severe injury leading to cardiovascular failure, acidosis, liver and kidney damage, perforation of the oesophagus and stomach, and death. Prolonged or repeated exposure can result in blindness and or corneal clouding to the eye. Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposures may cause darkening of the skin, erosion of exposed front teeth, and chronic inflammation of the nose and throat.
Mutagenicity	No evidence of mutagenic properties.

12. Ecological information

Ecotoxicity	Harmful effect due to pH shift.
Persistence and degradability	BOD: 0.88 g/g (chief component).
Mobility	log P(o/w): -0.31 (chief component).
Bioaccumulative Potential	Low probability of bioaccumulation is expected (log P(o/w) < 1).
Environmental Protection	Do not allow product to enter drains, waterways or sewers.
Acute Toxicity - Fish	LC50 (L.macrochirus): 75 mg/l /96h (chief component).
Acute Toxicity - Daphnia	LC50 (Daphnia magna): 47 mg/l /24h (chief component).

13. Disposal considerations

Disposal Considerations	Whatever cannot be saved for recovery or recycling should be disposed of according to relevant local, state and federal government regulations.

14. Transport information

Transport Information	Dangerous Goods of Class 8 Corrosives are incompatible in a placard load with any of the following: - Class 1, Class 4.3, Class 5, Class 6, if the Class 6 dangerous goods are cyanides and the Class 8 dangerous goods are acids and Class 7.
U.N. Number	2789
UN proper shipping name	ACETIC ACID SOLUTION
Transport hazard class(es)	8
Sub.Risk	3
Hazchem Code	•2P
Packing Group	II
EPG Number	8B1
IERG Number	19

15. Regulatory information

Regulatory Information	Not listed under WHS Regulation 2011, Schedule 10 - Prohibited carcinogens, restricted carcinogens and restricted hazardous chemicals.
Poisons Schedule	S6

16. Other Information

Literature References	'Standard for the Uniform Scheduling of Medicines and Poisons .', Commonwealth of Australia. Lewis, Richard J. Sr. 'Hawley's Condensed Chemical Dictionary 13th. Ed.', Rev., John Wiley and Sons, Inc., NY, 1997. National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.', 2007. Safe Work Australia, 'National Code of Practice fot the Preparation of Safety Data Sheets for Hazardous

Chemicals', 2011.
Standards Australia, 'SAA/SNZ HB 76:2010 Dangerous Goods - Initial Emergency Response Guide', Standards Australia/Standards New Zealand, 2010.
Safe Work Australia, 'Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004)]'.
Safe Work Australia, 'Hazardous Chemical Information System, 2005'.
Safe Work Australia, 'National Code of Practice for the Labelling of Safe Work Hazardous Substances (2011)'.
Safe Work Australia, 'National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995) 3rd Edition]'.

Contact Person/Point

Paul McCarthy Ph. (08) 8440 2000 DISCLAIMER STATEMENT:
All information provided in this data sheet or by our technical representatives is compiled from the best knowledge available to us. However, since data, safety standards and government regulations are subject to change and the conditions of handling and use, or misuse, are beyond our control, we make no warranty either expressed or implied, with respect to the completeness or accuracy to the information contained herein. Chem-Supply accepts no responsibility whatsoever for its accuracy or for any results that may be obtained by customers from using the data and disclaims all liability for reliance on information provided in this data sheet or by our technical representatives.
...End Of MSDS...