

Safety Data Sheet

Infosafe No™ 1CH06 Issue Date : March 2014 RE-ISSUED by CHEMSUPP

Product Name : **CHLOROFORM**

Classified as hazardous

1. Identification

GHS Product Identifier CHLOROFORM

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

Recommended use of the chemical and restrictions on use Solvent for many oils, tars, resins, rubbers and a wide range of organic chemicals, chlorofluorocarbon refrigerants, fluorocarbon plastics, anesthetic, fumigant, insecticide, analytical reagent and laboratory reagent.

Other Names Name Product Code

CHLOROFORM LR, stabilised with amylene	CL038
CHLOROFORM AR, stabilised with amylene	CA038
CHLOROFORM TG, stabilised with amylene	CT038

Other Information EMERGENCY CONTACT NUMBER: +61 08 8440 2000
Business hours: 8:30am to 5:00pm, Monday to Friday.

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 Carcinogenicity: Category 2
Acute Toxicity - Oral: Category 4
Specific target organ toxicity - Repeated Exposure Category 2
Skin Corrosion/Irritation: Category 2

Signal Word (s) WARNING

Hazard Statement (s) H302 Harmful if swallowed.
H315 Causes skin irritation.
H351 Suspected of causing cancer.
H373 May cause damage to organs through prolonged or repeated exposure.

Pictogram (s) Health hazard, Exclamation mark



Precautionary statement – Prevention P201 Obtain special instructions before use.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P281 Use personal protective equipment as required.

Precautionary statement – Response P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P308+P313 IF exposed or concerned: Get medical advice/attention.

Other Information Pregnant women should not be exposed to this product as it may cause adverse reproductive effects including birth defects, miscarriages or infertility based on animal studies.

3. Composition/information on ingredients

Chemical Characterization Liquid

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Information on Composition	Derived from the reaction of chlorinated lime with acetone, acetaldehyde or ethanol or by the chlorination of methane.		
Ingredients	Name	CAS	Proportion
	Chloroform	67-66-3	100 %
Other Information	Chloroform normally contains a stabilizer such as ethanol (0.5-1%), methanol (0.2%), amylene, or alkylphenols. Chloroform contains small amounts of impurities such as carbon tetrachloride, bromodichloromethane, dichloromethane and dichloroethylene.		

4. First-aid measures

Inhalation	Remove victim to fresh air. If breathing has stopped, apply artificial respiration. Seek medical attention in severe cases, or if exposure has been great.
Ingestion	Rinse mouth thoroughly with water immediately. Do not induce vomiting. Risk of aspiration. Seek immediate medical assistance.
Skin	Wash affected areas with copious quantities of water immediately. Remove contaminated clothing and wash before re-use. Seek medical advice if effects persist.
Eye contact	Immediately irrigate with copious quantity of water for at least 15 minutes. Eyelids to be held open. Seek medical attention.
First Aid Facilities	Maintain eyewash fountain and drench facilities in work area.
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

Suitable extinguishing media	Use fire extinguishing media appropriate for surrounding environment. Use water spray, dry chemical, carbon dioxide, or appropriate foam.
Hazards from Combustion Products	Non-combustible. May evolve toxic fumes in fire (i.e. hydrogen chloride).
Specific hazards arising from the chemical	Slight fire hazard when exposed to high heat: otherwise practically not flammable.
Hazchem Code	2Z
Precautions in connection with Fire	Wear SCBA and chemical splash suit. Fully encapsulating, gas-tight suits should be worn for maximum protection. Structural firefighter's uniform is NOT effective for these materials.

6. Accidental release measures

Spills & Disposal	Do not touch or walk through this product. Do NOT touch damaged containers or spilled material unless wearing appropriate protective clothing. Stop leak if safe to do so. Prevent entry into waterways, drains, confined areas. Cover with plastic sheet to minimize spreading. Absorb with earth, sand or other non-combustible material and transfer to container. SEEK EXPERT ADVICE ON HANDLING AND DISPOSAL.
Personal Precautions	Avoid inhalation, contact with skin, eyes and clothing.
Personal Protection	Use personal protective equipment listed in 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	Do not breathe vapour. Avoid contact with eyes, skin and clothing. Avoid prolonged or repeated exposure. When using do not eat or drink. Only use in well-ventilated areas. Wash hands and face thoroughly after working with material. Wear suitable protective clothing.
Conditions for safe storage, including any incompatibilities	Store in a cool, dry, well ventilated area and out of direct sunlight. Store away from strong bases, oxidising agents, metals, ketone solvents and aluminium. Keep containers securely sealed.
Corrosiveness	May corrode some forms of plastics, rubber, and coatings.
Storage Regulations	Refer Australian Standard AS 4452 - 1997 'The storage and handling of toxic substances'.

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8. Exposure controls/personal protection

Exposure Controls, Odour threshold is above TWA.

Personal Protection

Occupational exposure limit values

NameSTELTWAmg/m3ppmmg/m3ppmFootnote

Chloroform

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Other Exposure Information

'SK' notice - absorption through the skin may be a significant source of exposure. The exposure standard is invalidated if such contact should occur.

A time weighted average (TWA) has been established for Chloroform (SAFe Work Aust) of 10 mg/m³, (2 ppm). 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**

Provide sufficient ventilation to ensure that the working environment is below the TWA (time weighted average). Where vapours or mists are generated, particularly in enclosed areas, and natural ventilation is inadequate, a flame proof exhaust ventilation system is required. Refer to AS 1940-The storage and handling of flammable and combustible liquids and AS 2430-Explosive gas atmospheres for further information concerning ventilation requirements.

Respiratory Protection

Where ventilation is not adequate, respiratory protection may be required. Avoid breathing vapours or mists. Select and use respirators in accordance with AS 1716 - Respiratory Protective Devices and be selected in accordance with AS 1715 - Selection, Use and Maintenance of Respiratory Protective Devices. When mists or vapours exceed the exposure standards then the use of the following is recommended: Approved respirator with organic vapour and dust/mist filters. Filter capacity and respirator type depends on exposure levels.

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

Hand protection should comply with AS 2161, Occupational protective gloves - Selection, use and maintenance.

Body Protection

Gloves: Ansell Laminate Film (Barrier), or Supported Polyvinyl Alcohol(PVA).

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

Heavy, clear, colourless, volatile, highly refractive liquid.

Odour

Characteristic odour.

Melting Point

~ -63.2 °C

Boiling Point

61 - 62 °C

Solubility in Water

Slightly soluble (8 g/L @ 20 °C)

Solubility in Organic Solvents

Miscible with alcohol, ether, benzene, carbon disulfide, carbon tetrachloride and fixed and volatile oils.

Specific Gravity

1.48 (@ 20 °C)

Vapour Pressure

213 hPa (20 °C)

Vapour Density (Air=1)

4.25 (20 °C)

Evaporation Rate

11.6 (butyl acetate = 1)

Coefficient Water/Oil Distr.

log P(o/w): 1.97

Odour Threshold

200-300 ppm

Flammability

Non flammable.

Will burn on prolonged exposure to flame or high temperature.

Auto-Ignition Temperature

982 °C

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Explosion Properties	Sealed containers may rupture when heated.
Molecular Weight	119.38
Other Information	Critical temperature: 263.4 °C Refractive index: 1.4459 Dipole moment: 1.01 Debye (@ 20 °C) Dielectric constant: 4.8 (@ 20 °C) Saturation concentration: 1027 g/m3 (@ 20 °C) Heat of evaporation: 263 kJ/kg (@ 61 °C) Taste: Sweet

10. Stability and reactivity

Chemical Stability	Stable if protected from light, heat and air and if stabilized. Chloroform decomposes slowly on prolonged exposure to sunlight or to air forming hydrochloric acid.
Conditions to Avoid	Exposure to moisture. Exposure to direct sunlight. Avoid incompatible materials (strong oxidising agents), moisture and excess heat.
Incompatible Materials	Strong alkalis and alkali metals including aluminium, amides, fluorine, lithium, organic nitro compounds, potassium, sodium, sodium oxides, as well as alkali hydroxides/alcohols, ketone solvents, peroxi compounds. Rubber, various plastics.
Hazardous Decomposition Products	Extremely toxic fumes of carbon oxides, hydrogen chloride, chlorine and phosgene.
Possibility of hazardous reactions	On contact with strong bases a slow reaction occurs due to low solubility of base in chloroform. If methanol (or other cosolvent) is present, reaction may be explosive. Contact with ketone plus strong base may cause violent or explosive reaction. Contact with alkaline metals or aluminium may cause violent or explosive reaction. Contact with strong oxidising agents yields phosgene and chlorine.
Hazardous Polymerization	Will not occur.

11. Toxicological Information

Ingestion	Harmful if swallowed. May cause gastrointestinal upset. Causes severe burning in mouth and throat, pain in the chest and vomiting. May also cause severe irritation to the mouth, oesophagus and stomach after prolonged exposure. Large quantities may cause symptoms similar to inhalation. Possible hepato-renal (liver and kidney) problems and cardiovascular problems may occur. Symptoms may include nausea, vomiting, perforation with severe abdominal pain and breathing difficulties.
Inhalation	Acts as a relatively potent anesthetic. After inhalation of the vapour, the respiratory tract (mucous membranes) are irritated causing coughing, nausea, vomiting, drowsiness, dizziness and headache. High concentrations can cause central nervous system depression and cardiac arrhythmia. Exposure to higher concentrations may result in confusion, hallucinations, perceptual distortions, delirium, shortness of breath; possibly leading to loss of consciousness and even death. May cause liver injury and blood disorders. Cardiac disorders are aggravated by stress and lack of oxygen.
Skin	Causes skin irritation, resulting in redness and pain. Dehydrates the skin by removing natural oils. If absorbed through the skin may result with toxic effects.
Eye	Vapours cause redness, tearing, pain and a passing sensation of intense burning to the eye. Splashes may cause severe irritation and possible eye damage.
Carcinogenicity	Carcinogen Category 3 - Substance suspected of having carcinogenic potential - Safe Work Australia. Substances suspected of having carcinogenic potential are those substances which have possible carcinogenic effects on humans but in respect of which the available information is not adequate for making a satisfactory assessment. There is some evidence from appropriate animal and epidemiological studies, but this is insufficient to place the substance in Category 2. IARC: 2B - Group 2B: Possibly carcinogenic to humans.
Reproductive Toxicity	Pregnant women should not be exposed to this product as it may cause adverse reproductive effects including birth defects, miscarriages or infertility based on animal studies.
Chronic Effects	Prolonged or repeated exposure to vapours via ingestion or inhalation may cause irriversable damage to the nervous system, the heart, gastro-intestinal, liver and kidneys.
Serious eye damage/irritation	Rabbit (Draize test) - slight irritation.
Mutagenicity	Evidence of mutagenic effects for bacteria/yeast cells.
Skin corrosion/irritation	Rabbit (Draize test) - slight irritation.

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12. Ecological information

Persistence and degradability	When released into the soil or water this material is expected to evaporate quickly. When released into the water, this material is expected to have a half-life between 1 and 10 days. When released into the air, this material is expected to have a half-life greater than 30 days.
Bioaccumulative Potential	No appreciable bioaccumulation potential is to be expected (log P(o/w) <3).
Acute Toxicity - Daphnia	Daphnia magna EC50: 79 mg/l

13. Disposal considerations

Disposal Considerations	Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and disposed of according to relevant local, state and federal government regulations.
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14. Transport information

Transport Information	Dangerous Goods of Class 6 (Toxic and Infectious Substances) are incompatible in a placard load with any of the following: Class 1, Class 3, if the Class 3 dangerous goods are nitromethane, Class 8, if the Class 6 dangerous goods are cyanides and the Class 8 dangerous goods are acids; and are incompatible with food and food packaging in any quantity.
U.N. Number	1888
UN proper shipping name	CHLOROFORM
Transport hazard class(es)	6.1
Hazchem Code	2Z
Packaging Method	Recommended materials for packaging: Tinned plate. Tinned or plated iron. Prohibited packaging material: Light metals and alloys in the presence of moisture.
Packing Group	III
EPG Number	6A3
IERG Number	34

15. Regulatory information

Regulatory Information	Listed in the Australian Inventory of Chemical Substances (AICS).
Poisons Schedule	S6

16. Other Information

Literature References	'Standard for the Uniform Scheduling of Medicines and Poisons No. 6', Commonwealth of Australia, February 2015. 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 for 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 Substances 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)]'.
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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
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Empirical Formula & CHCl₃

Structural Formula

Other Information

Previously labelled as:

R22 Harmful if swallowed.

R38 Irritating to skin.

R40(3) Possible risk of irreversible effects.

R48/20/22 Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.

S36/37 Wear suitable protective clothing and gloves.

...End Of MSDS...

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