

SECTION 1: Identification of the substance/mixture and of the supplier/undertaking

1.1. GHS product identifier

Product form : Mixture
Trade name : Perchloroethylene

1.2. Other means of identification

No additional information available

1.3. Recommended use of the chemical and restrictions on use

No additional information available

1.4. Supplier's details

Distributor

Rolfes Chemicals (Pty) Ltd.
Cnr Brammer and Strachan Street,
P.O. Box P.O. Box 14075, Wadeville
1422 Germiston – South Africa Gauteng
T 011 873 0157

1.5. Emergency phone number

Emergency number : 086 111 4753

SECTION 2: Hazard identification

2.1. GHS classification of the substance/mixture and any national or regional information

Classification according to the United Nations GHS

Flammable liquids, Category 2 H225
Hazardous to the aquatic environment – Acute Hazard, Category 2 H401
Hazardous to the aquatic environment – Chronic Hazard, Category 2 H411

Full text of H-statements: see section 16

Adverse physicochemical, human health and environmental effects : Highly flammable liquid and vapour, Toxic to aquatic life, Toxic to aquatic life with long lasting effects.

2.2. GHS label elements, including precautionary statements

Labelling according to the United Nations GHS

Hazard pictograms (GHS ZA) :



Signal word (GHS-ZA) : Danger

Hazard statements (GHS ZA) : H225 - Highly flammable liquid and vapour
H411 - Toxic to aquatic life with long lasting effects

Precautionary statements (GHS ZA) : P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 - Keep container tightly closed.
P240 - Ground and bond container and receiving equipment.
P241 - Use explosion-proof electrical, lighting equipment.
P242 - Use non-sparking tools.
P243 - Take action to prevent static discharges.
P273 - Avoid release to the environment.
P280 - Wear protective clothing, eye protection, face protection, protective gloves.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas

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P-statements for label (GHS-ZA)	with water [or shower]. P370+P378 - In case of fire: Use extinguishing powder, foam to extinguish. P391 - Collect spillage. P403+P235 - Store in a well-ventilated place. Keep cool. P501 - Dispose of contents and container to an approved waste disposal plant.
	: P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.; P233 - Keep container tightly closed.; P240 - Ground and bond container and receiving equipment.; P241 - Use explosion-proof electrical, lighting equipment.; P242 - Use non-sparking tools.; P243 - Take action to prevent static discharges.; P273 - Avoid release to the environment.; P280 - Wear protective clothing, eye protection, face protection, protective gloves.; IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].; P370+P378 - In case of fire: Use extinguishing powder, foam to extinguish.; P391 - Collect spillage.; P403+P235 - Store in a well-ventilated place. Keep cool.; P501 - Dispose of contents and container to an approved waste disposal plant.

2.3. Other hazards which do not result in classification or are not covered by the GHS

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification according to the United Nations GHS
Tetrachloroethylene	CAS-No.: 127-18-4	≥ 99	Aquatic Acute 2, H401 Aquatic Chronic 2, H411
1,2-epoxybutane	CAS-No.: 106-88-7	≥ 1	Flam. Liq. 2, H225 Aquatic Acute 3, H402 Aquatic Chronic 3, H412

SECTION 4: First aid measures

4.1. Description of necessary first aid measures

First-aid measures general	: If you feel unwell, seek medical advice.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact	: Rinse skin with water/shower. Take off immediately all contaminated clothing.
First-aid measures after eye contact	: Rinse eyes with water as a precaution.
First-aid measures after ingestion	: Call a poison center or a doctor if you feel unwell.

4.2. Most important symptoms/effect, acute and delayed

Symptoms/effects after inhalation	: Although no appropriate human or animal health effects data are known to exist, this material is expected to be an inhalation hazard.
Symptoms/effects after skin contact	: None under normal conditions.
Symptoms/effects after eye contact	: None under normal conditions.
Symptoms/effects after ingestion	: None under normal conditions.

4.3. Indication of immediate medical attention and special treatment needed, if necessary

Treat symptomatically.

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SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

- Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.
Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

- Fire hazard : Highly flammable liquid and vapour.
Explosion hazard : No direct explosion hazard.
Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Special protective actions for fire-fighters

- Firefighting instructions : Fight fire from safe distance and protected location. Do not enter fire area without proper protective equipment, including respiratory protection.
Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Stop leak if safe to do so. Notify authorities if product enters sewers or public waters.
Absorb spillage to prevent material damage.

6.1.1. For non-emergency personnel

- Protective equipment : Wear recommended personal protective equipment.
Emergency procedures : Ventilate spillage area. No open flames, no sparks, and no smoking.

6.1.2. For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures : Evacuate unnecessary personnel. Stop leak if safe to do so.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and materials for containment and cleaning up

- For containment : Collect spillage. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Stop leak without risks if possible.
Methods for cleaning up : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.
Other information : Dispose of materials or solid residues at an authorized site.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Ensure good ventilation of the work station. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Flammable vapours may accumulate in the container. Use explosion-proof equipment. Wear personal protective equipment.
Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.
Additional hazards when processed : Not expected to present a significant hazard under anticipated conditions of normal use.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Ground/bond container and receiving equipment.

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Storage conditions : Store in a well-ventilated place. Keep cool. Keep container tightly closed.
Packaging materials : Store always product in container of same material as original container.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Tetrachloroethylene (127-18-4)	
South Africa - Occupational Exposure Limits (Restricted Limits)	
Local name	Perchloroethylene (Tetrachloroethylene)
OEL eight hour TWA	150 ppm
	1000 mg/m ³
RHCA - STEL/C	50 ppm
	335 mg/m ³
Regulatory reference	Government Notice. R: 1179
South Africa - Occupational Exposure Limits (Airborne Pollutants)	
Local name	Perchloroethylene (Tetrachloroethylene)
OEL TWA	170 mg/m ³
	25 ppm
OEL STEL	678 mg/m ³
	100 ppm
Regulatory reference	Government Notice No. R 904
South Africa - Biological limit values	
Local name	Tetrachloroethylene (Perchloroethylene)
BEI	3 ppm Parameter: Tetrachloroethylene - Medium: end exhaled - Sampling time: Prior to shift 0.5 mg/l Parameter: Tetrachloroethylene - Medium: blood - Sampling time: Prior to shift
Regulatory reference	Government Notice No. R. 280, 2021

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.
Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures, such as personal protective equipment

Hand protection : Protective gloves
Eye protection : Safety glasses
Skin and body protection : Wear suitable protective clothing
Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment

Personal protective equipment symbol(s)



8.4. Exposure limit values for the other components

No additional information available

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SECTION 9: Physical and chemical properties

9.1. Basic physical and chemical properties

Physical state	: Liquid
Appearance	: Colorless liquid.
Colour	: Colourless
Odour	: characteristic, odourless
Odour threshold	: No data available
pH	: 5 – 8
pH solution	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Relative evaporation rate (ether=1)	: No data available
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: 121.2 °C
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability	: Highly flammable liquid and vapour.
Vapour pressure	: 2.1 mPa
Vapour pressure at 50°C	: No data available
Relative vapour density at 20°C	: No data available
Relative density	: No data available
Relative density of saturated gas/air mixture	: No data available
Density	: 1.615 – 1.625
Relative gas density	: No data available
Solubility	: Solubility in water (mg/l).
Partition coefficient n-octanol/water (Log Pow)	: No data available
Partition coefficient n-octanol/water (Log Kow)	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available
Lower explosion limit	: No data available
Upper explosion limit	: No data available
Physical state	: Liquid
Appearance	: Colorless liquid.

9.2. Data relevant with regard to physical hazard classes (supplemental)

No additional information available

SECTION 10: Stability and Reactivity

10.1. Reactivity

Highly flammable liquid and vapour.

10.2. Chemical Stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

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10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Fatal if swallowed.
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) :

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LD50 oral rat	2400 – 13000
LD50 dermal rat	5000 mg/kg
LD50 dermal rabbit	1500 – 2950 mg/kg
LC50 Inhalation - Rat	7071 mg/l
LC50 Inhalation - Rat (Dust/Mist)	> 6.3 mg/l/4h
ATE ZA (vapours)	7071 mg/l/4h

1,2-epoxybutane (106-88-7)

LD50 dermal rabbit	1500 – 2950 mg/kg bodyweight Animal: rabbit, Animal sex: male
LC50 Inhalation - Rat	> 6.3 mg/l air Animal: rat

Skin corrosion/irritation : Not classified.
pH: 5 – 8
Serious eye damage/irritation : Not classified
pH: 5 – 8
Respiratory or skin sensitization : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : May cause cancer
Reproductive toxicity : Not classified
Reproductive toxicity : Not classified
STOT-single exposure : Not classified
STOT-repeated exposure : Not classified
Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Toxic to aquatic life. Toxic to aquatic life with long lasting effects.
Hazardous to the aquatic environment, short-term (acute) : Toxic to aquatic life.
Hazardous to the aquatic environment, long-term (chronic) : Toxic to aquatic life with long lasting effects.

Tetrachloroethylene (127-18-4)

LC50 - Fish [1]	5 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri)
LC50 - Fish [2]	5 mg/l Test organisms (species): Limanda limanda
EC50 - Crustacea [1]	8.5 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	3.64 mg/l Test organisms (species): Chlamydomonas reinhardtii

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1,2-epoxybutane (106-88-7)	
LC50 - Fish [1]	> 100 mg/l Test organisms (species): Leuciscus idus
EC50 - Crustacea [1]	70 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	> 500 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)

12.2. Persistence and degradability

Perchloroethylene	
Persistence and degradability	Not rapidly degradable

Tetrachloroethylene (127-18-4)	
Persistence and degradability	

1,2-epoxybutane (106-88-7)	
Persistence and degradability	

12.3. Bioaccumulative potential

Perchloroethylene	
Bioaccumulative potential	No additional information available

12.4. Mobility in soil

Perchloroethylene	
Mobility in soil	No additional information available

12.5. Other adverse effects

Ozone	: Not classified
Other adverse effects	: No additional information available

SECTION 13: Disposal Considerations

13.1. Disposal methods

Regional waste regulation	: Disposal must be done according to official regulations.
Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Sewage disposal recommendations	: Disposal must be done according to official regulations.
Product/Packaging disposal recommendations	: Disposal must be done according to official regulations.
Additional information	: Flammable vapours may accumulate in the container. Do not re-use empty containers.

SECTION 14: Transport information

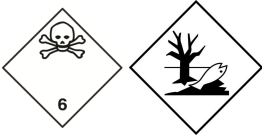
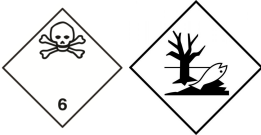

In accordance with SANS / IMDG / IATA

SANS	IMDG	IATA
14.1. UN number		
1897	1897	1897
14.2. UN Proper Shipping Name		
TETRACHLOROETHYLENE	TETRACHLOROETHYLENE	Tetrachloroethylene
14.3. Transport hazard class(es)		
6.1	6.1	6.1

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SANS	IMDG	IATA
		
14.4. Packing group, if applicable		
III	III	III
14.5. Environmental hazards		
Dangerous for the environment : Yes	Dangerous for the environment : Yes Marine pollutant : Yes	Dangerous for the environment : Yes
No supplementary information available		

14.6. Special precautions for user

SANS

Limited quantities (SANS)	: 5 L
Limited quantities (SANS)	: 5 L
Packagings, large packagings and IBCs Packing instructions (SANS)	: P001, IBC03, LP01
Portable tank and bulk containers instructions (SANS)	: T4
Portable tank and bulk container special provisions (SANS)	: TP1

IMDG

Limited quantities (IMDG)	: 5 L
Excepted quantities (IMDG)	: E1
Packing instructions (IMDG)	: P001, LP01
IBC packing instructions (IMDG)	: IBC03
Tank instructions (IMDG)	: T4
Tank special provisions (IMDG)	: TP1
EmS-No. (Fire)	: F-A - FIRE SCHEDULE Alfa - GENERAL FIRE SCHEDULE
EmS-No. (Spillage)	: S-A - SPILLAGE SCHEDULE Alfa - TOXIC SUBSTANCES
Stowage category (IMDG)	: A
Stowage and handling (IMDG)	: SW2
Segregation (IMDG)	: SGG10
Properties and observations (IMDG)	: Colourless liquid with an ethereal odour. When involved in a fire, evolves extremely toxic fumes (phosgene). Toxic if swallowed, by skin contact or by inhalation.

IATA

PCA Excepted quantities (IATA)	: E1
PCA Limited quantities (IATA)	: Y642
PCA limited quantity max net quantity (IATA)	: 2L
PCA packing instructions (IATA)	: 655
PCA max net quantity (IATA)	: 60L
CAO packing instructions (IATA)	: 663
CAO max net quantity (IATA)	: 220L
ERG code (IATA)	: 6L

14.7. Transport in bulk according to IMO instructions

Not applicable

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SECTION 15: Regulatory information

15.1. National regulations

15.1.1. OCCUPATIONAL HEALTH AND SAFETY ACT, 1993

Prohibited Hazardous Chemical Agents

Not regulated

15.2. Safety, health, and environmental national regulations specific for the product

No additional information available

SECTION 16: Other information

Issue date : 16/08/2023
Revision date : 21/09/2024
Supersedes : 21/09/2024

Full text of H-statements:	
H225	Highly flammable liquid and vapour
H401	Toxic to aquatic life
H402	Harmful to aquatic life
H411	Toxic to aquatic life with long lasting effects
H412	Harmful to aquatic life with long lasting effects

Safety Data Sheet (SDS), South Africa (HCA)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.