Rowe Scientific Hand Sanitiser

ROWE SCIENTIFIC

Chemwatch: **5381-02** Version No: **2.1.1.1**

Safety Data Sheet according to WHS and ADG requirements

Chemwatch Hazard Alert Code: 3

Issue Date: **25/03/2020** Print Date: **26/03/2020** S.GHS.AUS.EN

SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

Product Identifier

Product name	Rowe Scientific Hand Sanitiser		
Synonyms	HH0030; HH0031; HH0032		
Proper shipping name	ETHANOL (ETHYL ALCOHOL) or ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)		
Other means of identification	Not Available		

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Hand Sanitiser.
ivelevalit idelitilled uses	Use according to manufacturer's directions.

Details of the supplier of the safety data sheet

Registered company name	ROWE SCIENTIFIC			
Address	11 Challenge Boulevard Wangara WA 6065 Australia			
Telephone	61 8 9302 1911			
Fax	+61 8 9302 1905			
Website	http://rowe.com.au/			
Email	rowewa@rowe.com.au			

Emergency telephone number

Association / Organisation	ROWE SCIENTIFIC
Emergency telephone numbers	+61 8 9302 1911 (24 Hrs)
Other emergency telephone numbers	Not Available

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

HAZARDOUS CHEMICAL. DANGEROUS GOODS. According to the WHS Regulations and the ADG Code.

Poisons Schedule	Not Applicable				
Classification [1]	Flammable Liquid Category 2, Eye Irritation Category 2A				
Legend:	1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI				

Label elements

Hazard pictogram(s)





SIGNAL WORD	DANGER				
Hazard statement(s)					
H225	Highly flammable liquid and vapour.				
H319	Causes serious eye irritation.				
Precautionary statement(s) Pre	evention				
P210	Keep away from heat/sparks/open flames/hot surfaces No smoking.				
P233	Keep container tightly closed.				
P240	Ground/bond container and receiving equipment.				
P241	Use explosion-proof electrical/ventilating/lighting/intrinsically safe equipment.				
P242	Use only non-sparking tools.				
P243	Take precautionary measures against static discharge.				

Chemwatch: 5381-02 Page 2 of 11 Issue Date: 25/03/2020

Rowe Scientific Hand Sanitiser

Version No: 2.1.1.1 Print Date: 26/03/2020

> P280 Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statement(s) Response

P370+P378	In case of fire: Use alcohol resistant foam or normal protein foam for extinction.				
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.				
P337+P313	If eye irritation persists: Get medical advice/attention.				
P303+P361+P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.				

Precautionary statement(s) Storage

P403+P235 Store in a well-ventilated place. Keep cool.

Precautionary statement(s) Disposal

P501 Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
64-17-5	>60	ethanol
67-63-0	<5	isopropanol
56-81-5	0.5-2	glycerol
7722-84-1	<0.2	hydrogen peroxide
7732-18-5	balance	water

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye Contact	 If this product comes in contact with the eyes: Wash out immediately with fresh running water. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. Seek medical attention without delay; if pain persists or recurs seek medical attention. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	Wipe off excess with absorbent tissue or towel. Seek medical attention if swelling/redness/blistering or irritation occurs.
Inhalation	 If fumes or combustion products are inhaled remove from contaminated area. Lay patient down. Keep warm and rested. Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. Transport to hospital, or doctor.
Ingestion	 If swallowed do NOT induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. Observe the patient carefully. Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. Seek medical advice.

Indication of any immediate medical attention and special treatment needed

For acute or short term repeated exposures to ethanol:

- Acute ingestion in non-tolerant patients usually responds to supportive care with special attention to prevention of aspiration, replacement of fluid and correction of nutritional deficiencies (magnesium, thiamine pyridoxine, Vitamins C and K).
- ▶ Give 50% dextrose (50-100 ml) IV to obtunded patients following blood draw for glucose determination.
- F Comatose patients should be treated with initial attention to airway, breathing, circulation and drugs of immediate importance (glucose, thiamine).
- ▶ Decontamination is probably unnecessary more than 1 hour after a single observed ingestion. Cathartics and charcoal may be given but are probably not effective in single
- ▶ Fructose administration is contra-indicated due to side effects.

SECTION 5 FIREFIGHTING MEASURES

Extinguishing media

- Alcohol stable foam.
- Dry chemical powder.
- ▶ BCF (where regulations permit).
- Carbon dioxide.
- ▶ Water spray or fog Large fires only.

Special hazards arising from the substrate or mixture

Chemwatch: 5381-02 Page 3 of 11 Issue Date: 25/03/2020 Version No: 2.1.1.1 Print Date: 26/03/2020

Rowe Scientific Hand Sanitiser

Fire Incompatibility ▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result Advice for firefighters ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ May be violently or explosively reactive. ▶ Wear breathing apparatus plus protective gloves in the event of a fire. ▶ Prevent, by any means available, spillage from entering drains or water course. ► Consider evacuation (or protect in place). Fight fire from a safe distance, with adequate cover. Fire Fighting If safe, switch off electrical equipment until vapour fire hazard removed. ▶ Use water delivered as a fine spray to control the fire and cool adjacent area. ▶ Avoid spraying water onto liquid pools. • Do not approach containers suspected to be hot. ▶ Cool fire exposed containers with water spray from a protected location. ▶ If safe to do so, remove containers from path of fire. ► Liquid and vapour are highly flammable. Severe fire hazard when exposed to heat, flame and/or oxidisers. Vapour may travel a considerable distance to source of ignition. ▶ Heating may cause expansion or decomposition leading to violent rupture of containers. Fire/Explosion Hazard ▶ On combustion, may emit toxic fumes of carbon monoxide (CO). Combustion products include: carbon dioxide (CO2) other pyrolysis products typical of burning organic material. HAZCHEM

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

	3 °F
Minor Spills	 Remove all ignition sources. Clean up all spills immediately. Avoid breathing vapours and contact with skin and eyes. Control personal contact with the substance, by using protective equipment. Contain and absorb small quantities with vermiculite or other absorbent material. Wipe up. Collect residues in a flammable waste container.
Major Spills	 Clear area of personnel and move upwind. Alert Fire Brigade and tell them location and nature of hazard. May be violently or explosively reactive. Wear breathing apparatus plus protective gloves. Prevent, by any means available, spillage from entering drains or water course. Consider evacuation (or protect in place). No smoking, naked lights or ignition sources. Increase ventilation. Stop leak if safe to do so. Water spray or fog may be used to disperse /absorb vapour. Contain spill with sand, earth or vermiculite. Use only spark-free shovels and explosion proof equipment. Collect recoverable product into labelled containers for recycling. Absorb remaining product with sand, earth or vermiculite. Collect solid residues and seal in labelled drums for disposal. Wash area and prevent runoff into drains. If contamination of drains or waterways occurs, advise emergency services.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling	
Safe handling	 Limit all unnecessary personal contact. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Avoid contact with incompatible materials. When handling, DO NOT eat, drink or smoke. Keep containers securely sealed when not in use. Avoid physical damage to containers. Always wash hands with soap and water after handling. Work clothes should be laundered separately. Use good occupational work practice. Observe manufacturer's storage and handling recommendations contained within this SDS. Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.
Other information	 Store in original containers in approved flammable liquid storage area. Store away from incompatible materials in a cool, dry, well-ventilated area. DO NOT store in pits, depressions, basements or areas where vapours may be trapped. No smoking, naked lights, heat or ignition sources.

Chemwatch: 5381-02 Page 4 of 11 Version No: 2.1.1.1

Rowe Scientific Hand Sanitiser

Issue Date: 25/03/2020 Print Date: 26/03/2020

- Storage areas should be clearly identified, well illuminated, clear of obstruction and accessible only to trained and authorised personnel adequate security must be provided so that unauthorised personnel do not have access
- Store according to applicable regulations for flammable materials for storage tanks, containers, piping, buildings, rooms, cabinets, allowable quantities and minimum storage distances.
- Use non-sparking ventilation systems, approved explosion proof equipment and intrinsically safe electrical systems.
- Have appropriate extinguishing capability in storage area (e.g. portable fire extinguishers dry chemical, foam or carbon dioxide) and flammable gas detectors.
- Keep adsorbents for leaks and spills readily available.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storage and handling recommendations contained within this SDS.

In addition, for tank storages (where appropriate):

- ▶ Store in grounded, properly designed and approved vessels and away from incompatible materials.
- For bulk storages, consider use of floating roof or nitrogen blanketed vessels; where venting to atmosphere is possible, equip storage tank vents with flame arrestors; inspect tank vents during winter conditions for vapour/ ice build-up.
- Storage tanks should be above ground and diked to hold entire contents.

Conditions for safe storage, including any incompatibilities

Suitable container

- ▶ Packing as supplied by manufacturer.
- Plastic containers may only be used if approved for flammable liquid.
- ▶ Check that containers are clearly labelled and free from leaks

Storage incompatibility

Avoid oxidising agents, acids, acid chlorides, acid anhydrides, chloroformates.

Avoid strong bases.















Must not be stored together

0 - May be stored together with specific preventions

May be stored together

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Australia Exposure Standards	ethanol	Ethyl alcohol	1000 ppm / 1880 mg/m3	Not Available	Not Available	Not Available
Australia Exposure Standards	isopropanol	Isopropyl alcohol	400 ppm / 983 mg/m3	1230 mg/m3 / 500 ppm	Not Available	Not Available
Australia Exposure Standards	glycerol	Glycerin mist	10 mg/m3	Not Available	Not Available	(a) This value is for inhalable dust containing no asbestos and < 1% crystalline silica.
Australia Exposure Standards	hydrogen peroxide	Hydrogen peroxide	1 ppm / 1.4 mg/m3	Not Available	Not Available	Not Available

EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
ethanol	anol Ethanol: (Ethyl alcohol)		Not Available	15000* ppm
isopropanol	Isopropyl alcohol	400 ppm	2000* ppm	12000** ppm
glycerol	Glycerine (mist); (Glycerol; Glycerin)	45 mg/m3	180 mg/m3	1,100 mg/m3
hydrogen peroxide	Hydrogen peroxide	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
ethanol	3,300 ppm	Not Available
isopropanol	2,000 ppm	Not Available
glycerol	Not Available	Not Available
hydrogen peroxide	75 ppm	Not Available
water	Not Available	Not Available

Exposure controls

Appropriate engineering

controls

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are:

Process controls which involve changing the way a job activity or process is done to reduce the risk.

Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.

Employers may need to use multiple types of controls to prevent employee overexposure.

For flammable liquids and flammable gases, local exhaust ventilation or a process enclosure ventilation system may be required. Ventilation equipment should be explosion-resistant.

Chemwatch: **5381-02** Page **5** of **11**

Rowe Scientific Hand Sanitiser

Issue Date: **25/03/2020**Print Date: **26/03/2020**

Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Type of Contaminant:	Air Speed:
solvent, vapours, degreasing etc., evaporating from tank (in still air).	
aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5-1 m/s (100-200 f/min.)
direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1-2.5 m/s (200-500 f/min.)

Within each range the appropriate value depends on:

Lower end of the range	Upper end of the range
1: Room air currents minimal or favourable to capture	1: Disturbing room air currents
2: Contaminants of low toxicity or of nuisance value only.	2: Contaminants of high toxicity
3: Intermittent, low production.	3: High production, heavy use
4: Large hood or large air mass in motion	4: Small hood-local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min.) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

Personal protection

Version No: 2.1.1.1









No special equipment for minor exposure i.e. when handling small quantities. OTHERWISE:

Eve and face protection

Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]

Skin protection Se

See Hand protection below

Hands/feet protection

- ▶ Bare skin is cleaned with this material.
- ▶ Application of hand cream / barrier cream after use is recommended.

Body protection

See Other protection below

Other protection

- ► Bare skin is cleaned with this material.
- ▶ Application of hand cream / barrier cream after use is recommended.

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:

"Forsberg Clothing Performance Index".

The effect(s) of the following substance(s) are taken into account in the *computer-generated* selection:

Rowe Scientific Hand Sanitiser

Material	СРІ
BUTYL	С
NAT+NEOPR+NITRILE	С
NATURAL RUBBER	С
NATURAL+NEOPRENE	С
NEOPRENE	С
NEOPRENE/NATURAL	С
NITRILE	С
NITRILE+PVC	С
PE/EVAL/PE	С
PVA	С
PVC	С
VITON	С

- * CPI Chemwatch Performance Index
- A: Best Selection
- B: Satisfactory; may degrade after 4 hours continuous immersion
- C: Poor to Dangerous Choice for other than short term immersion

Respiratory protection

Type AB-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required. Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	AB-AUS P2	-	AB-PAPR-AUS / Class 1 P2
up to 50 x ES	-	AB-AUS / Class 1 P2	-
up to 100 x ES	-	AB-2 P2	AB-PAPR-2 P2 ^

^ - Full-face

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

- Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.

Version No: 2.1.1.1 Rowe Scientific Hand Sanitiser

Issue Date: **25/03/2020**Print Date: **26/03/2020**

NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

- * Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.
- ▶ Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Highly flammable liquid; mixes with water.		
Physical state	Liquid	Relative density (Water = 1)	Not Available
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	Not Available	Decomposition temperature	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	Not Available	Molecular weight (g/mol)	Not Applicable
Flash point (°C)	17.5	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	HIGHLY FLAMMABLE.	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Available	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Available	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water	Miscible	pH as a solution (1%)	Not Available
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available

SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7	
Chemical stability	 Unstable in the presence of incompatible materials. Product is considered stable. Hazardous polymerisation will not occur. 	
Possibility of hazardous reactions	See section 7	
Conditions to avoid	See section 7	
Incompatible materials	See section 7	
Hazardous decomposition products	See section 5	

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Information on toxicological eff	ects		
Inhaled	Inhalation of high concentrations of gas/vapour causes lung irritation with coughing and nausea, central nervous depression with headache and dizziness, slowing of reflexes, fatigue and inco-ordination. The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.		
	•	ne material may be damaging to the health of the inc yl alcohol, "alcohol") may produce nausea, vomiting, Effects	ividual. bleeding from the digestive tract, abdominal pain, and diarrhoea.
	<1.5 g/L	Mild: impaired vision, co-ordination and reaction time; emotional instability	
Ingestion	1.5-3.0 g/L	Moderate: Slurred speech, confusion, inco-ordination, emotional instability, disturbances in perception and senses, possible blackouts, and impaired objective performance in standardized tests. Possible double vision, flushing, fast heart rate, sweating and incontinence. Slow breathing may occur rarely and fast breathing may develop in cases of metabolic acidosis, low blood sugar and low blood potassium. Central nervous system depression may progress to coma.	

Chemwatch: 5381-02 Page 7 of 11 Issue Date: 25/03/2020 Version No: 2.1.1.1 Print Date: 26/03/2020

Rowe Scientific Hand Sanitiser

Severe: cold clammy skin, low body temperature and low blood pressure. Atrial fibrillation and heart block have been reported. Depression of breathing may occur, respiratory failure may follow 3-5 g/L serious poisoning, choking on vomit may result in lung inflammation and swelling. Convulsions due to severe low blood sugar may also occur. Acute liver inflammation may develop. Not considered an irritant through normal use. Skin Contact Discontinue use if irritation occurs There is evidence that material may produce eye irritation in some persons and produce eye damage 24 hours or more after instillation. Severe Eve inflammation may be expected with pain Principal hazards are accidental eye contact and cleaner overuse. Overuse or obsessive cleaner use may lead to defatting of the skin and may Chronic cause irritation, drying, cracking, leading to dermatitis. TOXICITY IRRITATION **Rowe Scientific Hand** Sanitiser Not Available Not Available TOXICITY IRRITATION Inhalation (rat) LC50: 124.7 mg/l/4H[2] Eye (rabbit): 500 mg SEVERE Oral (rat) LD50: =1501 $mg/kg^{[2]}$ Eve (rabbit):100mg/24hr-moderate ethanol Eye: adverse effect observed (irritating)^[1] Skin (rabbit):20 mg/24hr-moderate Skin (rabbit):400 mg (open)-mild Skin: no adverse effect observed (not irritating)^[1] TOXICITY dermal (rat) LD50: =12800 mg/kg^[2] Eye (rabbit): 10 mg - moderate Eye (rabbit): 100 mg - SEVERE Inhalation (rat) LC50: 72.6 mg/l/4h^[2] isopropanol Oral (rat) LD50: =4396 mg/kg^[2] Eve (rabbit): 100mg/24hr-moderate Skin (rabbit): 500 mg - mild TOXICITY IRRITATION glycerol Oral (rat) LD50: >10000 mg/kg[2] Not Available IRRITATION dermal (rat) LD50: >2000 mg/kg^[2] Not Available hydrogen peroxide Inhalation (rat) LC50: 2 mg/l/4H $^{[2]}$ Oral (rat) LD50: >225 mg/kg[2] TOXICITY IRRITATION water Oral (rat) LD50: >90000 mg/kg^[2] Not Available 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise Leaend: specified data extracted from RTECS - Register of Toxic Effect of chemical Substances Isopropanol is irritating to the eyes, nose and throat but generally not to the skin. Prolonged high dose exposure may also produce depression of the central nervous system and drowsiness. Few have reported skin irritation. It can be absorbed from the skin or when inhaled. Intentional swallowing is common particularly among alcoholics or suicide victims and also leads to fainting, breathing difficulty, nausea, vomiting and ISOPROPANOL headache. In the absence of unconsciousness, recovery usually occurred. Repeated doses may damage the kidneys. A decrease in the frequency of mating has been found in among animals, and newborns have been found to have a greater incidence of low birth weight. Tumours of the testes have been observed in the male rat. At very high concentrations, evidence predicts that glycerol may cause tremor, irritation of the skin, eyes, digestive tract and airway. Otherwise it GLYCEROL is of low toxicity. There is no significant evidence to suggest that it causes cancer, genetic, reproductive or developmental toxicity. Exposure to hydrogen peroxide via the skin or oral route can produce toxic effects. Animal studies have shown evidence of damage to the **HYDROGEN PEROXIDE** kidney, gut, thymus and liver. Stomach and intestinal lesions including benign and malignant cancers have been observed in mice. It may produce genetic and developmental defects but no reproductive toxicity was reported in mice. The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of **ETHANOL & ISOPROPANOL** vesicles, scaling and thickening of the skin. Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible **ISOPROPANOL & GLYCEROL** airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal & HYDROGEN PEROXIDE

lymphocytic inflammation, without eosinophilia. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. On the other hand, industrial bronchitis is a disorder that occurs as a result of exposure due to high concentrations of irritating substance (often particles) and is completely reversible after exposure ceases. The

Chemwatch: 5381-02 Page 8 of 11 Issue Date: 25/03/2020 Version No: 2.1.1.1 Print Date: 26/03/2020

Rowe Scientific Hand Sanitiser

	disorder is characterized by difficulty breathing, cough and mucus production.			
ISOPROPANOL & HYDROGEN PEROXIDE	The substance is classified by IARC as Group 3: NOT classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing.			
HYDROGEN PEROXIDE & WATER	No significant acute toxicological data identified in literature search.			
Acute Toxicity	×	Carcinogenicity	×	
Acute loxicity		Carcinogenicity		
Skin Irritation/Corrosion	X Reproductivity X			
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	×	
Respiratory or Skin sensitisation	×	STOT - Repeated Exposure	×	
Mutagenicity	×	Aspiration Hazard	x	

Legend:

X − Data either not available or does not fill the criteria for classification
 y − Data available to make classification

- Data available to make classification

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

Rowe Scientific Hand Sanitiser	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	Not Available	Not Available	Not Available Not Available		Not Available
	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	11-mg/L	2
ethanol	EC50	48	Crustacea	2mg/L	4
	EC50	96	Algae or other aquatic plants	17.921mg/L	4
	NOEC	2016	Fish	0.000375mg/L	4
	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	9-640mg/L	2
•	EC50	48	Crustacea	12500mg/L	5
isopropanol	EC50	96	Algae or other aquatic plants	993.232mg/L	3
	EC0	24	Crustacea	5-102mg/L	2
	NOEC	5760	Fish	0.02mg/L	4
	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURC
glycerol	LC50	96	Fish	>0.011-mg/L	2
	EC50	96	Algae or other aquatic plants	77712.039mg/L	3
	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURC
	LC50	96	Fish	0.020mg/L	3
	EC50	48	Crustacea	2mg/L	2
hydrogen peroxide	EC50	72	Algae or other aquatic plants	0.71mg/L	4
	EC0	24	Crustacea	1.1mg/L	2
	NOEC	192	Fish	0.028mg/L	4
	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURC
water	LC50	96	Fish	897.520mg/L	3
	EC50	96	Algae or other aquatic plants	8768.874mg/L	3

Legend:

Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

DO NOT discharge into sewer or waterways.

Persistence and degradability

•	•	
Ingredient	Persistence: Water/Soil	Persistence: Air
ethanol	LOW (Half-life = 2.17 days)	LOW (Half-life = 5.08 days)
isopropanol	LOW (Half-life = 14 days)	LOW (Half-life = 3 days)
glycerol	LOW	LOW
hydrogen peroxide	LOW	LOW
water	LOW	LOW

Chemwatch: 5381-02 Page **9** of **11** Issue Date: 25/03/2020 Version No: 2.1.1.1 Print Date: 26/03/2020

Rowe Scientific Hand Sanitiser

Ingredient	Bioaccumulation
ethanol	LOW (LogKOW = -0.31)
isopropanol	LOW (LogKOW = 0.05)
glycerol	LOW (LogKOW = -1.76)
hydrogen peroxide	LOW (LogKOW = -1.571)
water	LOW (LogKOW = -1.38)

Mobility in soil

Ingredient	Mobility
ethanol	HIGH (KOC = 1)
isopropanol	HIGH (KOC = 1.06)
glycerol	HIGH (KOC = 1)
hydrogen peroxide	LOW (KOC = 14.3)
water	LOW (KOC = 14.3)

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

Legislation addressing waste disposal requirements may differ by country, state and/or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.

A Hierarchy of Controls seems to be common - the user should investigate:

- ► Reduction
- ▶ Reuse
- ► Recycling
- ► Disposal (if all else fails)

Product / Packaging disposal

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

- ▶ DO NOT allow wash water from cleaning or process equipment to enter drains.
- It may be necessary to collect all wash water for treatment before disposal.
- In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- ▶ Where in doubt contact the responsible authority.
- Recycle wherever possible.
- Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
- Dispose of by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or Incineration in a licensed apparatus (after admixture with suitable combustible material).
- ▶ Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

SECTION 14 TRANSPORT INFORMATION

Labels Required



Marine Pollutant	NO
HAZCHEM	•2YF

Land transport (ADG)

. , ,			
UN number	1170		
UN proper shipping name	ETHANOL (ETHYL ALCOHOL) or ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)		
Transport hazard class(es)	Class 3 Subrisk Not Applicable		
Packing group			
Environmental hazard	Not Applicable		
Special precautions for user	Special provisions 144 Limited quantity 1 L		

Air transport (ICAO-IATA / DGR)

UN number	1170	
UN proper shipping name	Ethanol or Ethanol. solution	

Rowe Scientific Hand Sanitiser

Issue Date: **25/03/2020**Print Date: **26/03/2020**

	ICAO/IATA Class	3	
Transport hazard class(es)	ICAO / IATA Subrisk Not Applicable		
	ERG Code 3L		
Packing group	П		
Environmental hazard	Not Applicable		
	Special provisions		A3 A58 A180
	Cargo Only Packing Instructions		364
	Cargo Only Maximum Qty / Pack		60 L
Special precautions for user	Passenger and Cargo Packing Instructions		353
	Passenger and Cargo Maximum Qty / Pack		5 L
	Passenger and Cargo Limited Quantity Packing Instructions		Y341
	Passenger and Cargo Limited Maximum Qty / Pack		1 L

Sea transport (IMDG-Code / GGVSee)

UN number	1170		
UN proper shipping name	ETHANOL (ETHYL ALCOHOL) or ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)		
Transport hazard class(es)	IMDG Class 3 IMDG Subrisk Not Applicable		
Packing group			
Environmental hazard	Not Applicable		
Special precautions for user	EMS Number F-E , S-D Special provisions 144 Limited Quantities 1 L		

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

Version No: 2.1.1.1

SECTION 15 REGULATORY INFORMATION

Safety, health and environmental regulations / legislation specific for the substance or mixture

ETHANOL IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Exposure Standards

 $\label{thm:condition} \mbox{Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals}$

Australia Inventory of Chemical Substances (AICS)

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix B (Part 3)

ISOPROPANOL IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Exposure Standards

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australia Inventory of Chemical Substances (AICS)

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

GLYCEROL IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Exposure Standards

HYDROGEN PEROXIDE IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Exposure Standards

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals Australia Inventory of Chemical Substances (AICS)

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 10 / Appendix C

Australia Inventory of Chemical Substances (AICS)

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5 $\,$

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule $\bf 6$

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

WATER IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Inventory of Chemical Substances (AICS)

National Inventory Status

National Inventory	Status	
Australia - AICS	Yes	
Canada - DSL	es s	
Canada - NDSL	lo (hydrogen peroxide; glycerol; ethanol; water; isopropanol)	
China - IECSC	Yes	
Europe - EINEC / ELINCS / NLP	Yes	
Japan - ENCS	Yes	
Korea - KECI	Yes	

Chemwatch: 5381-02 Page **11** of **11** Issue Date: 25/03/2020 Version No: 2.1.1.1 Print Date: 26/03/2020

Rowe Scientific Hand Sanitiser

New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - ARIPS	Yes
Legend:	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)

SECTION 16 OTHER INFORMATION

Revision Date	25/03/2020
Initial Date	25/03/2020

SDS Version Summary

Version	Issue Date	Sections Updated
2.1.1.1	25/03/2020	Ingredients, Synonyms

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

PC-TWA: Permissible Concentration-Time Weighted Average

PC-STEL: Permissible Concentration-Short Term Exposure Limit

IARC: International Agency for Research on Cancer

ACGIH: American Conference of Governmental Industrial Hygienists

STEL: Short Term Exposure Limit

TEEL: Temporary Emergency Exposure Limit。

IDLH: Immediately Dangerous to Life or Health Concentrations

OSF: Odour Safety Factor

NOAEL :No Observed Adverse Effect Level LOAEL: Lowest Observed Adverse Effect Level

TLV: Threshold Limit Value LOD: Limit Of Detection OTV: Odour Threshold Value BCF: BioConcentration Factors BEI: Biological Exposure Index

This document is copyright.

Apart from any fair dealing for the purposes of private study, research, review or criticism, as permitted under the Copyright Act, no part may be reproduced by any process without written permission from CHEMWATCH.

TEL (+61 3) 9572 4700.