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## 1. IDENTIFICATION OF THE MATERIAL AND THE MANUFACTURER

<b>Product Name</b>	<b>MAC Arandell BZK Residual Sanitiser</b> <b>Hand, Hand &amp; Surface, Surface</b> All pack sizes 210L drum, 5L jerry, 500ml etc		
<b>Statement of Hazard Nature</b>	Not considered a Hazardous Substance according to the criteria of the New Zealand Hazardous Substances, New Organisms legislation		
<b>Proper Shipping Name</b>	N/A		
<b>Supplier Name</b>	Arandee Ltd		
<b>Address</b>	108 Rockfield Road, Penrose, Auckland 1061, New Zealand		
<b>Telephone</b>	+64 (9) 579 5139		
<b>Emergency</b>	National Poisons Centre -24 hours	Australia New Zealand	13 11 26 0800 POISON 0800 764 766
<b>E-mail</b>	<a href="mailto:sales@arandee.co.nz">sales@arandee.co.nz</a>		
<b>Web Site</b>	<a href="http://www.arandee.co.nz">http://www.arandee.co.nz</a>		
<b>Synonym(s)</b>	MAC Arandell; MAC Arandell Surface Sanitiser		
<b>Use(s)</b>	A powerful hand sanitiser that contains benzalkonium chloride (BZK). Leaves hands hygienically clean (kills up to 99.9% of common germs & viruses). The unique formulation disinfects and conditions hands and surfaces. Designed for use in commercial and industrial settings, public health and government institutions. Alcohol, fragrance and colour free, non staining. Has up to 4 hours antimicrobial effect on surfaces.		
<b>Approval(s)</b>	Ministry of Primary Industries Approval (Pending)		

## 2. HAZARDS IDENTIFICATION

<b>Signal Word</b>	None	
<b>Hazard Statement</b>	<b>H402</b>	Harmful to aquatic life
<b>Prevention Statements</b>	<b>P103</b> <b>P102</b> <b>P233</b>	Read label before use Keep out of the reach of children Keep container tightly closed
<b>Response Statements</b>	<b>P370+P378</b> P305 P351  P337 P313	In case of fire: use water, foam, dry spray for extinction If in eyes: Rinse with water for several minutes, remove contact lenses, if present and easy to do so. Continue rinsing If eye irritation persists get medical advice/attention



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**Storage Statement**                      **P403 P235**      Store in well ventilated place. Keep cool

### 3. HAZARDS IDENTIFICATION COMPOSITION OF INGREDIENTS

Ingredient	Formula	Concentration	CAS Number
Alkyl dimethylbenzyl ammonium chloride		<10%	8001-54-5
Benzalkonium chloride			

### 4. FIRST AID MEASURES

<b>Eye</b>	Hold eyelids apart and flush continuously with water for 15 minutes. Remove contact lenses if present and easy to do so. Continue until advised to stop by the Poisons Information Centre, a doctor, or for at least 15 minutes. Keep patient calm.
<b>Inhalation</b>	If fumes, aerosols or combustion products are inhaled remove from contaminated area. Other measures are usually unnecessary.
<b>Skin</b>	If skin or hair contact occurs: Flush skin and hair with running water (and soap if available.) Seek medical attention in event of irritation
<b>Ingestion</b>	Immediately give a glass of water  First aid is not generally required. If in doubt, contact a Poisons Information Centre or a Doctor.
<b>Advice to Doctor</b>	Treat symptomatically.
<b>First Aid Facilities</b>	Eye wash facilities should be provided.

### 5. FIRE FIGHTING MEASURES

**Extinguishing media** There is no restriction on the type of extinguisher which may be used. Use extinguishing media suitable for surrounding areas.

**Fire Incompatibility** None known

**Advice for Fire fighters**  
Alert Fire Brigade  
Wear breathing apparatus plus protective gloves in the event of fire  
Prevent by any means available, spillage from entering drains or water courses.  
**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

**Fire/Explosion Hazard**  
Equipment should be thoroughly decontaminated after use.  
Non combustible  
Not considered a significant fire risk, however containers may burn



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## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

#### Minor Spill

Clean up spills immediately  
Avoid breathing vapours and contact with skin and eyes  
Control personal contact with the substance by using protective equipment  
Contain and absorb spill with sand, earth, inert material or vermiculite.  
Wipe up  
Place in a suitable, labelled container for waste disposal

#### Major Spill

Minor hazard.  
Clear area of personnel  
Alert Fire Brigade and tell them location and nature of hazard  
Control personal contact with the substance, by using protective equipment as required  
Prevent spillage from entering drains or water ways  
Contain spill with sand earth or vermiculite  
Collect recoverable product into labelled containers for recycling  
Absorb remaining product with sand, earth or vermiculite and place in appropriate containers for disposal.

## 7. HANDLING AND STORAGE

### Precautions for Safe handling

#### Safe Handling

Limit 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

#### Other Information

##### Conditions for safe storage, including any incompatibilities

#### Suitable Container

Polyethylene or polypropylene container  
Packing as recommended by manufacturer  
Check all containers are clearly labelled and free from leaks

#### Storage incompatibility

None known

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

Control parameters

**OCCUPATIONAL EXPOSURE LIMITS (OEL)**

**INGREDIENT DATA**

Ingredient	Material Name	TEEL-1	TEEL-2	TEEL-3
Benzalkonium chloride	Alkyl dimethylbenzyl ammonium chloride; (Benzalkonium chloride)	4.7 mg/m <sup>3</sup>	48 mg/m <sup>3</sup>	48 mg/m <sup>3</sup>
Ingredient	Original IDLH	Revised IDLH		
Benzalkonium chloride	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 risk.

Enclosure and/or isolation of mission 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. General exhaust is adequate under normal operation conditions.

**Personal Protection**



**Eye and face shields  
Protection**

Safety glasses with side shields



## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance</b>	A clear liquid	<b>Relative density (Water =1)</b>	0.98-1.02
<b>Physical State</b>	Liquid		
<b>Odour</b>	Not Available	<b>Partition coefficient n-octanol/water</b>	Not Available
<b>Odour threshold</b>	Not Available		
<b>pH</b>	6-8	<b>Auto-ignition temperature (°C)</b>	Not Available
<b>Melting Point/freezing point (°C)</b>	Not Available	<b>Decomposition temperature</b>	Not Available
<b>Vapour Density (Air=1)</b>	Not Available	<b>Viscosity (cSt)</b>	Not Available
<b>Boiling Point</b>	Not Available	<b>Molecular weight (g/mol)</b>	Not Available
<b>Evaporation Rate</b>	Not Available	<b>Taste</b>	Not Available
<b>Flammability</b>	Not Available	<b>Explosive Properties</b>	Not Available
<b>Upper explosive Limit (%)</b>	Not Available	<b>Oxidising Properties</b>	Not Available
<b>Lower explosive limit (%)</b>	Not Available	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Available
<b>Vapour Pressure (kPa)</b>	Not Available	<b>Volatile Component (%vol)</b>	Not Available
<b>Solubility in water (g/L)</b>	Miscible	<b>Gas Group</b>	Not Available
		<b>PH as a solution (1%)</b>	Not Available
		<b>VOC g/L</b>	Not Available

## 10. STABILITY AND REACTIVITY

<b>Reactivity</b>	See section 7.
<b>Chemical Stability</b>	Product is considered stable and hazardous polymerisation will not occur.
<b>Possibility of hazardous reaction</b>	See section 7.
<b>Conditions to avoid</b>	See section 7.
<b>Incompatible materials</b>	See section 7.
<b>Hazardous decomposition products</b>	See section 5.

## 11. TOXICOLOGICAL INFORMATION

<b>Information on toxicological effects</b>	The material 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.
<b>Inhaled</b>	Not normally a hazard due to non-volatile nature of product
<b>Ingestion</b>	The material has NOT been classified by EC Directives or other classification as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.
<b>Skin Contact</b>	The material is not thought to produce adverse health effects of skin irritation following contact (as classified) by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept a minimum and that suitable gloves be used in an occupational setting.



**Eye** Although the liquid is not thought to be an irritant (as classified by the EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).

**Chronic** Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by the EC Directives using animal models). Nevertheless, exposure by all routes should be minimised to a matter of course.

**Non Alcohol Hand Sanitising Gel**

TOXICITY	IRRITATION
Not Available	Not Available

**Benzalkonium chloride**

TOXICITY	IRRITATION
Dermal (rabbit) LD50: 1560 mg/kgE[2]	Eye (human): 0.05 mg SEVERE
Oral (rat) LD50: 240 mg/kgd[2]	Eye (rabbit); 1mg/24h SEVERE
	Skin (human): 0.15 mg/72h mild

**Legend**

1. Value obtained from Europe ECHA Registered Substances – Acute toxicity 2. \* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS -Register of Toxic Effect of chimcail substances

**Non Alcohol Hand Sanitising Gel**

No significant acute toxicological data identified in literature search.

The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as a contact eczema, more rarely as urticara or Quinecke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions e.g contact urticara, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger reaction in more than 1% of the persons tested.

**BENZLAKONIUM CHLORIDE**

**Irritation/Corrosion**

Asthma like symptoms may continue or even year after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to sever bronchial hyperreactivity to hours on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS, 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. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production. Alkylidimethyl benzylammonium chlorides are in the list of dangerous substances of council directives, classified as "harmful in contact with skin and on ingestion" and "corrosive and very toxic



to aquatic organisms” It can cause dose dependent skin and eye irritation with possible deterioration of vision, possible sensitisation in those with pre-existing eczema. It does not cause cancer, genetic defect, foetal or developmental abnormality.

Acute Toxicity		Carcinogenicity	
Skin Irritation/Corrosion		Reproductivity	
Serious Eye Damage/Irritation		STOT -Single Exposure	
Respiratory or Skin sensitisation		STOT -Repeated Exposure	
Mutagenicity		Aspiration Hazard	

## 12. ECOLOGICAL INFORMATION

### Toxicity

Ingredient	Endpoint	Test Duration (hr)	Species	Value	Source
benzalkonium chloride	EC50	24	Algae or other aquatic plants	0.0013mg/L	4
benzalkonium chloride	EC50	48	CrustBeacea	0.018mg/L	4
benzalkonium chloride	EC50	96	Algae or other aquatic plants	0.056mg/L	4
benzalkonium chloride	EC50	96	Fish	0.32mg/L	4
benzalkonium chloride	NOEC	1	Algae or other aquatic plants	0.0025mg/L	4

### Legend

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

## 13. DISPOSAL CONSIDERATIONS

### Waste Disposal

For small amounts, absorb contents with sand or similar and dispose of to an approved landfill site. DO NOT puncture or incinerate aerosol cans. Contact the manufacturer for additional information.

### Legislation

Dispose of in accordance with relevant, local legislation.

## 14. TRANSPORT INFORMATION

Marine Pollutant	No
HAZCHEM	Not Applicable



## 15. REGULATORY INFORMATION

### Standard for the Uniform Scheduling of Medicines and Poisons

<b>Australia inventory (AICS)</b>	All components are listed or exempted
<b>New Zealand Inventory of Chemicals (NZIoC)</b>	All components are listed or exempted
<b>HSNO Group Standard</b>	HSR 002552 Cosmetic Products
<b>Location Certificate Required</b>	≥ 100L (>5L), 250L (<5L), 50L open
<b>Approved Handler Requirement</b>	≥250L if containers ≥ 5L ≥500L if containers ≤ 5L
<b>Signage</b>	250L
<b>Tracking</b>	Not required
<b>Emergency Response Plan/Secondary Containment</b>	1000L

## 16. OTHER INFORMATION

**Additional Information** ASPHYXIANTS (1): reduce the oxygen concentration by displacement, when present in the atmospheres, in high concentrations. As most simple asphyxiants are odourless, atmospheres deficient in oxygen do not provide adequate sensory warning of danger. Therefore, it is not generally appropriate to recommend an exposure standard for each asphyxiant, but instead warn of the need to maintain oxygen concentrations.

Some asphyxiants may be given an exposure standard, due to their potential for narcotic effects at high concentrations, or an explosion hazard.

**Asphyxiants (2)** There is a significant hazard associated with workers entering poorly, ventilated areas (e.g. tanks) where oxygen levels may be deficient. An air supplied breathing apparatus may be required if adequate ventilation is not ensured. Refer to AS/NZS 2865 - Safe Working in a Confined Space.

**Respirators** In general, the best practice to avoid exposure is to use engineering controls, such as adequate ventilation, rather than the use of respirators (which should be limited). If respiratory equipment must be worn, ensure correct respirator selection and training is undertaken. Some respirators may be extremely uncomfortable, when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

**Abbreviations** Mg/m<sup>3</sup> - Milligrams per cubic metre  
ppm - Parts Per Million  
M - moles per litre, a unit of measure of concentration.  
pH - relates to hydrogen ion concentration - this value will relate to a scale of 0 – 14, where 0 is highly acidic and 14 is highly alkaline.  
TWA/ES - Time Weighted Average or Exposure Standard.  
CAS# - Chemical Abstract Service number - uniquely identifies chemical compounds.  
CNS - Central Nervous System  
NOS - Not Otherwise Specified  
IARC - International Agency for Research on Cancer.





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**Personal Protective Equipment**

The recommendations for protective equipment contained within this SDS report are provided as a guide only, when dealing with an abnormal situation. Factors such as method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered, before the final selection of personal protective equipment is made.

**Health Effects From Exposure**

It should be noted that the effects from excess exposure to this product would depend on several factors, including duration of exposure, quantity involved, effectiveness of control measures used; protective equipment and method of application. Given that, it is impractical to prepare a SDS report, which would encompass all possible scenarios, it is anticipated that users will assess the risks in an emergency and apply appropriate control methods.

**Report Status**

This report is based upon information provided by ingredient manufacturers, and third party experts. We believe that the information represents the current state of knowledge about safety and handling precautions that are appropriate for this product. Further clarification regarding any aspect of the product should be obtained directly from the Chief Chemist at Arandee Ltd.

While Arandee has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy, or completeness. As far as lawfully possible, Arandee accepts no liability for any loss, injury, or damage (including consequential loss) which may be suffered, or incurred by any person, because of their reliance upon the information contained in this Safety Data Sheet.

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To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any ability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.