

## SAFETY DATA SHEET

### 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

#### 1.1 Product identifier

**Product name** R.I.O.  
**Synonyms** CHALLENGE R.I.O. • RIO

#### 1.2 Uses and uses advised against

**Uses** CLEANING AGENT • RED DUST REMOVAL

#### 1.3 Details of the supplier of the product

**Supplier name** CHALLENGE CHEMICALS AUST.  
**Address** 6 Butcher St, Kwinana Beach, WA, 6167, AUSTRALIA  
**Telephone** (08) 9419 5577  
**Email** [sales@challengechemicals.com.au](mailto:sales@challengechemicals.com.au)  
**Website** <http://www.challengechemicals.com.au>

#### 1.4 Emergency telephone numbers

**Emergency** 0414 586 164

### 2. HAZARDS IDENTIFICATION

#### 2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

##### Physical Hazards

Not classified as a Physical Hazard

##### Health Hazards

Skin Corrosion/Irritation: Category 1B  
Serious Eye Damage / Eye Irritation: Category 1

##### Environmental Hazards

Not classified as an Environmental Hazard

#### 2.2 GHS Label elements

**Signal word** DANGER

##### Pictograms



##### Hazard statements

H314 Causes severe skin burns and eye damage.  
H318 Causes serious eye damage.

##### Prevention statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
P264 Wash thoroughly after handling.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.

**PRODUCT NAME R.I.O.****Response statements**

P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340	IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTRE or doctor/physician.
P321	Specific treatment is advised - see first aid instructions.
P363	Wash contaminated clothing before reuse.

**Storage statements**

P405	Store locked up.
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**Disposal statements**

P501	Dispose of contents/container in accordance with relevant regulations.
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**2.3 Other hazards**

No information provided.

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**3. COMPOSITION/ INFORMATION ON INGREDIENTS**

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**3.1 Substances / Mixtures**

Ingredient	CAS Number	EC Number	Content
OXALIC ACID	144-62-7	205-634-3	<5%
SULPHURIC ACID	7664-93-9	231-639-5	<5%
TRIMETHYL HEXADECYL AMMONIUM CHLORIDE	112-02-7	203-928-6	<5%
AMMONIUM HYDROGEN DIFLUORIDE (AMMONIUM BIFLUORIDE)	1341-49-7	215-676-4	1.4%
2-BUTOXYETHANOL	111-76-2	203-905-0	<1%
SODIUM XYLENE SULPHONATE	1300-72-7	215-090-9	<1%
WATER	7732-18-5	231-791-2	>60%

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**4. FIRST AID MEASURES**

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**4.1 Description of first aid measures**

<b>Eye</b>	If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.
<b>Inhalation</b>	If inhaled, remove from contaminated area. To protect rescuer, use a Full-face Type B (Inorganic and acid gas) respirator or an Air-line respirator (in poorly ventilated areas). Apply artificial respiration if not breathing.
<b>Skin</b>	If skin contact occurs, immediately remove contaminated clothing. Flush skin under running water for 15 minutes. Then apply calcium gluconate gel or HEXAFLUORINE ®. Contact a Poisons Information Centre on 13 11 26 (Australia Wide).
<b>Ingestion</b>	For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.
<b>First aid facilities</b>	Eye wash facilities and safety shower should be available. Calcium gluconate gel should be readily available wherever the product is used or stored.

**4.2 Most important symptoms and effects, both acute and delayed**

Causes burns.

**4.3 Immediate medical attention and special treatment needed**

Treat symptomatically.

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**5. FIRE FIGHTING MEASURES**

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**5.1 Extinguishing media**

Use an extinguishing agent suitable for the surrounding fire.

**5.2 Special hazards arising from the substance or mixture**

Non flammable. May evolve toxic gases (sulphur oxides) when heated to decomposition. May evolve flammable hydrogen gas in contact with some metals.

**5.3 Advice for firefighters**

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

**5.4 Hazchem code**

2X

2 Fine Water Spray.

X Wear liquid-tight chemical protective clothing and breathing apparatus. Contain spill and run-off.

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**6. ACCIDENTAL RELEASE MEASURES**

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**6.1 Personal precautions, protective equipment and emergency procedures**

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Ventilate area where possible. Contact emergency services where appropriate.

**6.2 Environmental precautions**

Prevent product from entering drains and waterways.

**6.3 Methods of cleaning up**

Contain spillage, then cover / absorb spill with sodium bicarbonate or 50-50 mixture of sodium carbonate and calcium hydroxide. Collect for complete neutralisation and appropriate disposal.

**6.4 Reference to other sections**

See Sections 8 and 13 for exposure controls and disposal.

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**7. HANDLING AND STORAGE**

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**7.1 Precautions for safe handling**

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

**7.2 Conditions for safe storage, including any incompatibilities**

Store in a secured, cool, dry, well ventilated area, removed from incompatible substances, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled and protected from physical damage when not in use. Check regularly for leaks or spills. Large storage areas should have appropriate ventilation and fire protection systems.

**7.3 Specific end uses**

No information provided.

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**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

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**8.1 Control parameters****Exposure standards**

Ingredient	Reference	TWA		STEL	
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
2-Butoxyethanol (EGBE)	SWA [AUS]	20	96.9	50	242
2-Butoxyethanol (EGBE)	SWA [Proposed]	10	49	50	242
Fluorides, as F	SWA [AUS]	--	2.5	--	--
Oxalic acid	SWA [AUS]	--	1	--	2
Sulphuric acid	SWA [AUS]	--	1	--	3

## Biological limits

Ingredient	Determinant	Sampling Time	BEI
2-BUTOXYETHANOL	Butoxyacetic acid (BAA) in urine (with hydrolysis)	End of shift	200 mg/g creatinine
AMMONIUM HYDROGEN DIFLUORIDE (AMMONIUM BIFLUORIDE)	Fluoride in urine	Prior to shift	2 mg/L
	Fluoride in urine	End of shift	3 mg/L

Reference: ACGIH Biological Exposure Indices

## 8.2 Exposure controls

### Engineering controls

Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Maintain vapour levels below the recommended exposure standard.

### PPE

<b>Eye / Face</b>	Wear splash-proof goggles.
<b>Hands</b>	Wear PVC or rubber gloves.
<b>Body</b>	Wear coveralls. When using large quantities or where heavy contamination is likely, wear rubber boots and a PVC apron. In a laboratory situation, wear a laboratory coat.
<b>Respiratory</b>	Where an inhalation risk exists, wear an Air-line respirator or a Type B (Inorganic gases and vapours) respirator.



## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

Appearance	VISCOUS BLUE LIQUID
Odour	PUNGENT ODOUR
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	NOT AVAILABLE
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	< 1
Vapour density	NOT AVAILABLE
Relative density	1.06
Solubility (water)	SOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

### 9.2 Other information

% Volatiles	87 %
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## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

**PRODUCT NAME R.I.O.**

### **10.2 Chemical stability**

Potential for exothermic hazard.

### **10.3 Possibility of hazardous reactions**

Polymerization is not expected to occur.

### **10.4 Conditions to avoid**

Avoid heat, sparks, open flames and other ignition sources.

### **10.5 Incompatible materials**

Incompatible with oxidising agents (e.g. hypochlorites), alkalis (e.g. sodium hydroxide) and some metals. Also incompatible with acids (eg. nitric acid), glass, ceramics, leather and neutral rubber.

### **10.6 Hazardous decomposition products**

May evolve toxic gases (sulphur oxides) when heated to decomposition.

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## **11. TOXICOLOGICAL INFORMATION**

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### **11.1 Information on toxicological effects**

**Acute toxicity** Based on available data, the classification criteria are not met.

**Information available for the ingredients:**

<b>Ingredient</b>	<b>Oral LD50</b>	<b>Dermal LD50</b>	<b>Inhalation LC50</b>
OXALIC ACID	425 mg/kg (rat)	--	--
SULPHURIC ACID	2140 mg/kg (rat)	--	18 mg/m <sup>3</sup> (guinea pig); 510 mg/m <sup>3</sup> /2hrs (rat)
TRIMETHYL HEXADECYL AMMONIUM CHLORIDE	--	4300 mg/kg (rabbit)	--
AMMONIUM HYDROGEN DIFLUORIDE (AMMONIUM BIFLUORIDE)	130 mg/kg (rat)	--	--
2-BUTOXYETHANOL	470 mg/kg (rat)	220 mg/kg (rabbit)	450 mg/L/4hrs (rat)

<b>Skin</b>	Causes burns. Contact may result in irritation, redness, pain, rash, dermatitis and possible burns.
<b>Eye</b>	Causes burns. Contact may result in irritation, lacrimation, pain, redness, corneal burns and possible permanent damage.
<b>Sensitisation</b>	Not classified as causing skin or respiratory sensitisation.
<b>Mutagenicity</b>	Not classified as a mutagen.
<b>Carcinogenicity</b>	Not classified as a carcinogen.
<b>Reproductive</b>	Not classified as a reproductive toxin.
<b>STOT - single exposure</b>	Over exposure may result in irritation of the nose and throat, coughing and bronchitis. High level exposure may result in ulceration of the respiratory tract, lung tissue damage, chemical pneumonitis and pulmonary oedema. Effects may be delayed.
<b>STOT - repeated exposure</b>	Not classified as causing organ damage from repeated exposure. Adverse effects are generally associated with single exposure.
<b>Aspiration</b>	Not classified as causing aspiration.

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## **12. ECOLOGICAL INFORMATION**

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### **12.1 Toxicity**

Sulphuric acid is harmful to aquatic life in very low concentrations. May cause corrosion and deterioration of many common materials found in the environment (eg steel, limestone).

### **12.2 Persistence and degradability**

No information provided.

### **12.3 Bioaccumulative potential**

No information provided.

### **12.4 Mobility in soil**

The product is soluble in water and will partition into the aqueous phase. The product will be mobile in soil until degraded.

PRODUCT NAME R.I.O.

#### 12.5 Other adverse effects

No information provided.

### 13. DISPOSAL CONSIDERATIONS

#### 13.1 Waste treatment methods

**Waste disposal** Collect for complete neutralisation and appropriate disposal. Wearing the protective equipment detailed above, neutralise to pH 6-8 by SLOW addition to a saturated sodium bicarbonate solution or similar basic solution. Dilute with excess water and flush to drain. Waste disposal should only be undertaken in a well ventilated area.

**Legislation** Dispose of in accordance with relevant local legislation.

### 14. TRANSPORT INFORMATION

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE



	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	1760	1760	1760
14.2 Proper Shipping Name	CORROSIVE LIQUID, N.O.S.	CORROSIVE LIQUID, N.O.S.	CORROSIVE LIQUID, N.O.S.
14.3 Transport hazard class	8	8	8
14.4 Packing Group	II	II	II

#### 14.5 Environmental hazards

No information provided.

#### 14.6 Special precautions for user

Hazchem code 2X  
GTEPG 8A1  
EmS F-A, S-B

### 15. REGULATORY INFORMATION

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

**Poison schedule** Classified as a Schedule 6 (S6) Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

**Classifications** Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.

**Inventory listings** **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**  
All components are listed on AIIC, or are exempt.

### 16. OTHER INFORMATION

**Additional information** ACIDS: When mixing acids with water (diluting), caution must be taken as heat will be generated which causes violent spattering. Always add a small volume of acid to a large volume of water, NEVER the reverse.

**RESPIRATORS:** In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that 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.

**PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:**

The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

**HEALTH EFFECTS FROM EXPOSURE:**

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

**Abbreviations**

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m <sup>3</sup>	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

**Report status**

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT 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, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

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