





#### RISK

- May form explosive peroxides
- Causes severe burns
- Risk of serious damage to eyes
- Ingestion may produce health damage\*
- Cumulative effects may result following exposure\*
- Limited evidence of a carcinogenic effect\*
- May be harmful to the foetus/embryo\*
- May possibly effect fertility
- \*(limited evidence)

#### Safety

- Keep locked up
- Do not breath gas/fumes/vapours/spray
- Avoid contact with skin
- Avoid contact with eyes
- Wear suitable protective clothing
- Wear suitable gloves
- Wear eye/face protection
- Handle and open container with care
- Avoid exposure – obtain special instructions before use
- To clean the floor and all objects contaminated by the material, use water
- Take off immediately all contaminated clothing
- In case of contact with eyes, rinse with plenty of water and contact Doctor and Poisons Information Centre
- In case of accident or if you feel unwell IMEEDIATELY contact Doctor or Poisons Information Centre (show label if possible)
- This material and its container must be disposed of as hazardous waste.

### Section 3 - Composition /Information on Ingredients

NAME	CAS RN	%
ethylene glycol monobutyl ether	111-76-2	<10
sodium hydroxide	1310-73-2	9

ingredients determined not to be hazardous		balance
water	7732-18-5	>50

## Section 4- First Aid Measures

### SWALLOWED

- For advice, contact a Poisons Information Centre or a doctor at once.
- Urgent hospital treatment is likely to be needed.
- 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.

### EYE

- If this product comes in contact with the eyes:
- Immediately hold eyelids apart and flush the eye continuously with 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.
- Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
- Transport to hospital or doctor without delay.

### SKIN

- If skin or hair contact occurs:
- Immediately flush body and clothes with large amounts of water, using safety shower if available.
- Quickly remove all contaminated clothing, including footwear.
- Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre.
- Transport to hospital, or doctor.

### INHALED

- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Protheses 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.
- Inhalation of vapours or aerosols (mists, fumes) may cause lung oedema.
- Corrosive substances may cause lung damage (e.g. lung oedema, fluid in the lungs).
- As this reaction may be delayed up to 24 hours after exposure, affected individuals need complete rest (preferably in semi recumbent posture) and must be kept under medical observation even if no symptoms are (yet) manifested.
- Before any such manifestation, the administration of a spray containing a dexamethasone derivative or beclomethasone derivative may be considered.

### NOTES TO PHYSICIAN

Treat symptomatically.

For acute or short term repeated exposures to ethylene glycol:

- Early treatment of ingestion is important. Ensure emesis is satisfactory.
- Test and correct for metabolic acidosis and hypocalcaemia.
- Apply sustained diuresis when possible with hypertonic mannitol.
- Evaluate renal status and begin haemodialysis if indicated. [I.L.O].
- For acute or short-term repeated exposures to highly alkaline materials:
- Respiratory stress is uncommon but present occasionally because of soft tissue edema.
- Unless endotracheal intubation can be accomplished under direct vision, cricothyroidotomy or tracheotomy may be necessary.
- Oxygen is given as indicated.
- The presence of shock suggests perforation and mandates an intravenous line and fluid administration.

## Section 5 - Fire Fighting Measures

### EXTINGUISHING MEDIA

- Water spray or fog.
- Foam.
- Dry chemical powder.
- BCF (where regulations permit).

### FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.
- Use firefighting procedures suitable for surrounding area.

### FIRE/EXPLOSION HAZARD

- Non-combustible.
- Not considered a significant fire risk, however containers may burn.
- May emit corrosive fumes.

### FIRE INCOMPATIBILITY

None known.

### HAZCHEM

2R

### Personal Protective Equipment

Breathing apparatus.

Chemical splash suit.

## Section 6 - Accidental Release Measures

### MINOR SPILLS

- Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material.
- Check regularly for spills and leaks.
- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.

- Control personal contact by using protective equipment.
- Contain and absorb spill with sand, earth, inert material or vermiculite.

#### **MAJOR SPILLS**

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.

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

### **Section 7 - Handling and Storage**

#### **PROCEDURE FOR HANDLING**

- DO NOT allow clothing wet with material to stay in contact with skin.
- The tendency of many ethers to form explosive peroxides is well documented. Ethers lacking non-methyl hydrogen atoms adjacent to the ether link are thought to be relatively safe
- DO NOT concentrate by evaporation, or evaporate extracts to dryness, as residues may contain explosive peroxides with
- DETONATION potential.
- Any static discharge is also a source of hazard.
- Before any distillation process remove trace peroxides by shaking with excess 5% aqueous ferrous sulphate solution or by percolation through a column of activated alumina.
- Distillation results in uninhibited ether distillate with considerably increased hazard because of risk of peroxide formation on storage.
- The substance accumulates peroxides which may become hazardous only if it evaporates or is distilled or otherwise treated to concentrate the peroxides. The substance may concentrate around the container opening for example.
- Purchases of per oxidisable chemicals should be restricted to ensure that the chemical is used completely before it can become peroxidised.
- A responsible person should maintain an inventory of per oxidisable chemicals or annotate the general chemical inventory to indicate which chemicals are subject to peroxidation. An expiration date should be determined. The chemical should either be treated to remove peroxides or disposed of before this date.
- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- **WARNING:** To avoid violent reaction, ALWAYS add material to water and NEVER water to material.

#### **SUITABLE CONTAINER**

- Lined metal can, lined metal pail/ can.
- Plastic pail.
- Polyliner drum.
- Packing as recommended by manufacturer.
- For low viscosity materials
- Drums and Jerri cans must be of the non-removable head type.
- Where a can is to be used as an inner package, the can must have a screwed enclosure.

### STORAGE INCOMPATIBILITY

- Avoid strong acids, acid chlorides, acid anhydrides and chloroformates.
- Avoid contact with copper, aluminium and their alloys.
- Avoid reaction with oxidising agents.

### STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.
- DO NOT store near acids, or oxidising agents.
- No smoking, naked lights, heat or ignition sources.

## Section 8 - Exposure Controls/personal Protection

### EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m <sup>3</sup>	STWL ppm	STEL mg/m <sup>3</sup>	Peak ppm	Peak mg/m <sup>3</sup>	TWA F/CC	Notes
Australia Exposure Standards	Sodium hydroxide (Sodium Hydroxide)						2		

The following materials had no OELs on our records  
 Water CAS:7732- 18- 51

### PERSONAL PROTECTION



### RESPIRATOR

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

### EYE

- Safety glasses with unperforated side shields may be used where continuous eye protection is desirable, as in laboratories; spectacles are not sufficient where complete eye protection is needed such as when handling bulk-quantities, where there is a danger of splashing, or if the material may be under pressure
- Chemical goggles. Whenever there is a danger of the material coming in contact with the eyes; goggles must be properly fitted

- Full face shield (20 cm, 8 in minimum) may be required for supplementary but never for primary protection of eyes; these afford face protection.
- Alternatively a gas mask may replace splash goggles and face shields.

#### **HANDS/FEET**

- Elbow length PVC gloves.
- When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots.
- Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:
  - Frequency and duration of contact,
  - Chemical resistance of glove material,
  - Glove thickness and
  - Dexterity.

#### **OTHER**

- Overalls.
- PVC Apron.
- PVC protective suit may be required if exposure severe.
- Eyewash unit.

#### **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.

### **Section 9 - Physical and Chemical Properties**

#### **APPEARANCE**

Light yellow liquid with a slight odour; miscible with water.

#### **PHYSICAL PROPERTIES**

Liquid.

Mixes with water.

Corrosive.

Alkaline.

State	Liquid	Molecular Weight	Not Applicable
Melting Range (°C)	0 Approx	Viscosity	Not Available
Boiling Range (°C)	100 Approx	Solubility in water(g/L)	Miscible
Flash Point (°C)	Not Applicable	pH (1% solution)	Not Available
Decomposition Temp (°C)	Not Available	pH (as supplied)	12.5-13.5
Auto ignition Temp	Not Applicable	Vapour Pressure(kPa)	2.4 @ 20C

(°C)			
Upper Explosive Limit (%)	Not Applicable	Specific Gravity (water-1)	1 Approx
Lower Explosive Limit (%)	Not Applicable	Relative Vapour Density (Air=1)	Not Available
Volatile Component (% vol)	Not Available	Evaporation Rate	As for water

Ethylene Glycol	
Monobutyl Ether	
Log Kow (Prager 1995)	0.83
Log Kow (Sangster 1997)	0.8

## Section 10 - Stability and Reactivity

### CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

*For incompatible materials - refer to Section 7 - Handling and Storage.*

## Section 11 - Toxicological Information

### POTENTIAL HEALTH EFFECTS

#### ACUTE HEALTH EFFECTS

- Causes severe burns.
- Risk of serious damage to eyes.
- Ingestion may produce health damage\*.
- \* (limited evidence).

#### CHRONIC HEALTH EFFECTS

- Limited evidence of a carcinogenic effect\*.
- May be harmful to the foetus/ embryo\*.
- May possibly affect fertility\*.
- Cumulative effects may result following exposure\*.
- \* (limited evidence).

### TOXICITY AND IRRITATION

Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a nonallergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound.

For ethylene glycol monoalkyl ethers and their acetates (EGMAEs):

Typical members of this category are ethylene glycol propylene ether (EGPE), ethylene glycol butyl ether (EGBE) and ethylene glycol hexyl ether (EGHE) and their acetates.

EGMAEs are substrates for alcohol dehydrogenase isozyme ADH-3, which catalyzes the conversion of their terminal alcohols to aldehydes (which are transient metabolites).

Acute Toxicity: Oral LD50 values in rats for all category members range from 739 (EGHE) to 3089 mg/kg bw (EGPE), with values increasing with decreasing molecular weight.

<b>CARCINOGEN</b>			
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2-Butoxyethanol	International Agency for Research on Cancer (IARC) – Agents Reviewed by the IARC Monographs	Group	3
<b>SKIN</b>			
Ethylene Glycol Monobutyl Ether	Australian Exposure Standards – Skin	Notes	Sk

## Section 12 - Ecological Information

This material and its container must be disposed of as hazardous waste.

### Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
TRU GRIT AC-45 Caustic Water Based Degreaser	No Data Available	No Data Available		
Ethylene Glycol Monobutyl Ether	LOW	LOW	LOW	HIGH
Sodium Hydroxide	LOW	No Data Available	LOW	HIGH

## Section 13 - Disposal Considerations

Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area.

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

- Reduction.
- 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.
- Treat and neutralise at an approved treatment plant.
- Treatment should involve: Neutralisation with suitable dilute acid followed by: burial in a land-fill specifically licenced to accept chemical and / or pharmaceutical wastes or Incineration in a licenced apparatus (after admixture with suitable combustible material).

## Section 14 - Transportation Information



Labels Required: CORROSIVE

**HAZCHEM:**

2R (ADG7)

**Land Transport UNDG:**

Class or division:	8	Subsidiary risk:	None
UN No.:	1814	UN packing group:	II
Shipping Name: POTASSIUM HYDROXIDE SOLUTION			

**Air Transport IATA:**

UN/ID Number:	1814	Packing Group:	II
Special provisions:	A3		
Cargo Only			
Packing Instructions:	855	Maximum Qty/Pack:	30 L
Passenger and Cargo			
Packing Instructions:	Y840	Maximum Qty/Pack:	1 L
Passenger and Cargo Limited Quantity			
Packing Instructions:	851	Maximum Qty/Pack:	0.5 L
Shipping Name: POTASSIUM HYDROXIDE SOLUTION			

**Maritime Transport IMDG:**

IMDG Class:	8	IMDG Subrisk:	None
UN Number:	1814	Packing Group:	II
EMS Number:	F-A,S-B	Special provisions:	None
Limited Quantities:	1 L		
Shipping Name: POTASSIUM HYDROXIDE SOLUTION			

**Section 15 - Regulatory Information**

POISONS SCHEDULE S6

**REGULATIONS**

**Regulations for ingredients**

**Ethylene glycol Monobutyl ether (CAS: 111-76-2) is found on the following regulatory lists;**

"Australia Exposure Standards", "Australia Hazardous Substances", "Australia High Volume Industrial Chemical List (HVICL)", "Australia Inventory of Chemical Substances (AICS)", "IMO MARPOL 73/78 (Annex II) - List of Other Liquid Substances", "International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs", "International Fragrance Association (IFRA) Survey: Transparency List"

**Sodium hydroxide (CAS: 1310-73-2,12200-64-5) is found on the following regulatory lists;**

"Australia Exposure Standards", "Australia Hazardous Substances", "Australia High Volume Industrial Chemical List (HVICL)", "Australia Illicit Drug Reagents/Essential Chemicals - Category III", "Australia Inventory of Chemical Substances (AICS)", "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix C", "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix E (Part 2)", "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix F (Part 3)", "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 6", "CODEX General Standard for Food Additives (GSFA) - Additives Permitted for Use in Food in General, Unless Otherwise Specified, in Accordance with GMP", "GESAMP/EHS Composite List - GESAMP Hazard Profiles", "IMO IBC Code Chapter 17: Summary of minimum requirements", "International Council of Chemical Associations (ICCA) - High Production Volume List", "International Fragrance Association (IFRA) Survey: Transparency List"

**Water (CAS: 7732-18-5) is found on the following regulatory lists;**

"Australia Inventory of Chemical Substances (AICS)", "IMO IBC Code Chapter 18: List of products to which the Code does not apply", "International Fragrance Association (IFRA) Survey: Transparency List"

**No data for TRU GRIT AC-45 Caustic Water Based Degreaser (CW: 23-2961)**

**Section 16 - Other Information**

**INGREDIENTS WITH MULTIPLE CAS NUMBERS**

<b>Ingredient Name</b>	<b>CAS</b>
Sodium hydroxide	1310-73-2, 12200-64-5

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 (M)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.

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*This is the end of the MSDS.*