

# SAFETY DATA SHEET

## SECTION 1. PRODUCT IDENTIFICATION AND SUPPLY COMPANY DETAILS

<b>Product name:</b>	AdBlue®
<b>Synonyms:</b>	AUS 32 (Aqueous urea solution); DEF (Diesel exhaust fluid)
<b>Recommended use:</b>	Additive for injection into diesel SCR exhaust systems (NO reduction in exhaust gases).
<b>Supplier:</b>	Mammoth Equipment and Exhausts
<b>ABN:</b>	22 149 528 316
<b>Street Address:</b>	15 Ernest Clark Road, Canning Vale, WA 6155
<b>Email:</b>	<a href="mailto:sales@mammothequip.com.au">sales@mammothequip.com.au</a>
<b>Telephone:</b>	1300 310 340
<b>Emergency Telephone:</b>	Australia - Poisons Information Centre 13 11 26

## SECTION 2. HAZARD IDENTIFICATION

**Hazard Classification:** Non-Hazardous substance, Non-Dangerous goods according to NOHSC criteria and Australian Dangerous Goods (ADG) Code.

<b>Label Elements</b>	Not Applicable
<b>Hazard Statement(s):</b>	Not Applicable
<b>Precautionary Statement(s) – Prevention:</b>	Not Applicable
<b>Precautionary Statement(s) – Response:</b>	Not Applicable
<b>Precautionary Statement(s) – Storage:</b>	Not Applicable
<b>Precautionary Statement(s) – Disposal:</b>	Not Applicable

## SECTION 3. COMPOSITION INFORMATION

CHEMICAL ENTITY	CAS NO.	PROPORTION
Demineralised Water	7732-18-5	67.5%
Urea	57-13-6	32.5%

## SECTION 4. FIRST AID MEASURES

Australia Poisons Information Centre **13 11 26** | Australia Emergency Services: **000**

### Description of first aid measures

<b>Eye contact</b>	<p>If this product comes into contact with eyes:</p> <ul style="list-style-type: none"> <li>• Wash out immediately with water.</li> <li>• Removal of contact lenses should only be undertaken by trained personnel.</li> <li>• If irritation persists, seek medical attention.</li> </ul>
<b>Skin contact</b>	<ul style="list-style-type: none"> <li>• If skin contact occurs, immediately remove any contaminated clothing and wash skin thoroughly with running water and soap.</li> <li>• If swelling, redness, blistering or irritation persists seek medical advice.</li> </ul>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>• Move the exposed person to fresh air at once – avoid becoming a casualty.</li> <li>• Seek medical advice if effects persist.</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>• Rinse mouth with water. If swallowed, give a glass of water to drink.</li> <li>• Seek medical advice.</li> </ul>

## SECTION 5. FIRE FIGHTING MEASURES

### Suitable Extinguishing media:

Non-combustible, however, if material is involved in a fire; use water fog (or if unavailable fine water spray), foam or dry agent (carbon dioxide, dry chemical powder). Choice of extinguishing media should take into account surrounding areas.

### Specific hazards arising from the substance or mixture:

Non-combustible material

### Special protective equipment and precautions for fire-fighters:

Decomposes on heating emitting toxic fumes, including those of ammonia. Fire fighters to wear self-contained breathing apparatus and suitable protective clothing.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

### **Emergency procedures/ Environmental precautions:**

Clear area of all unprotected personnel. If contamination of sewers or waterways has occurred advise local emergency services.

### **Personal precautions/ Protective equipment/ Methods and materials for containment and cleaning up:**

Slippery when spilt. Avoid accidents, clean up spills immediately. Wear protective equipment to prevent skin and eye contact and breathing in vapours. Work up wind or increase ventilation. Contain – prevent run-off into drains and waterways. Use absorbent (soil, sand, or other inert material). Collect and seal in properly labelled containers or drums for disposal.


## SECTION 7. HANDLING AND STORAGE

<p><b>Safe handling</b></p>	<ul style="list-style-type: none"> <li>• Limit any unnecessary personal contact.</li> <li>• Wear protective clothing when risk of exposure occurs.</li> <li>• Use in a well-ventilated area.</li> <li>• Avoid vapour inhalation.</li> <li>• When handling, DO NOT eat, drink or smoke.</li> <li>• Always wash hands with soap and water after handling.</li> <li>• Avoid physical damage to containers.</li> <li>• Use good occupational work practice.</li> <li>• Observe manufacturer's storage and handling recommendations contained within this SDS.</li> <li>• DO NOT allow clothing wet with AdBlue® to stay in contact with skin.</li> <li>• When handling product in drums, wear safety footwear and use proper handling equipment.</li> </ul>
<p><b>Storage requirements</b></p>	<ul style="list-style-type: none"> <li>• Store in original containers.</li> <li>• Keep containers securely sealed when not in use.</li> <li>• Store in a cool, dry, well-ventilated area.</li> <li>• Use properly labelled containers.</li> <li>• Store away from incompatible materials and foodstuff containers.</li> <li>• Protect containers against physical damage and check regularly for leaks.</li> <li>• Observe manufacturer's storage and handling recommendations contained within this SDS.</li> </ul>

### Conditions for safe storage, including any incompatibilities

<p><b>Suitable container</b></p>	<p>Intermediate Bulk Container (IBC), drum, bottle, bulk. Use stainless steel or high-density polyethylene.</p>
<p><b>Storage incompatibility</b></p>	<ul style="list-style-type: none"> <li>• Avoid reaction with oxidising agents.</li> <li>• Avoid strong acids, acid chlorides, acid anhydrides and chloroformates.</li> </ul>

## SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<b>Appropriate engineering controls</b>	Natural ventilation is adequate under normal use conditions.
<b>Hygiene measures</b>	<ul style="list-style-type: none"> <li>• Keep away from food, drink and animal feeding troughs.</li> <li>• DO NOT eat, drink or smoke when handling.</li> <li>• Wash hands prior to eating, drinking or smoking.</li> <li>• Avoid contact with clothing.</li> <li>• Avoid eye contact and repeated or prolonged skin exposure.</li> <li>• Ensure that eyewash stations and safety showers are close to the workspace.</li> </ul>
<b>Personal protection</b>	
<b>Eye and face protection</b>	<ul style="list-style-type: none"> <li>• Safety glasses with side shields; or as required.</li> <li>• Chemical goggles.</li> <li>• In the event of chemical exposure, begin eye irrigation immediately</li> <li>• Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. First-aid personnel should be trained on their removal and suitable equipment should be readily available.</li> </ul>
<b>Skin protection</b>	See hand protection below
<b>Hands protection</b>	<ul style="list-style-type: none"> <li>• Wear chemical protective gloves.</li> <li>• The exact break through time for substances must be obtained from the manufacturer of the protective gloves and must be observed when making a final choice.</li> <li>• Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly.</li> </ul>
<b>Thermal hazard</b>	Not available.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance</b>	Clear liquid	<b>Vapour density (Air = 1)</b>	Not Available
<b>Physical state</b>	Liquid	<b>Relative density (water = 1)</b>	1.09@20 °C
<b>Colour</b>	Clear to hazy green	<b>Partition coefficient n-octane / water</b>	Not available
<b>Odour</b>	Odourless or slight smell of ammonia	<b>Auto-ignition temperature (°C)</b>	Not available
<b>pH (as supplied)</b>	Not available	<b>Decomposition temperature (°C)</b>	100
<b>Melting point / freezing point (°C)</b>	-11.5	<b>Viscosity (cSt)</b>	Not available
<b>Boiling Point (°C)</b>	100	<b>Molecular weight (g/mol)</b>	Not available
<b>Flash Point</b>	Not available	<b>Taste</b>	Not available
<b>Evaporation rate</b>	Not available	<b>Explosive properties</b>	Not available
<b>Evaporation rate</b>	Not available	<b>Oxidising properties</b>	Not available
<b>Flammability</b>	Not Available	<b>Surface Tension (dyn/cm or mN/m)</b>	Not available
<b>Upper Explosive Limit (%)</b>	Not Available	<b>Volatile Component (%vol)</b>	Not available
<b>Lower Explosive Limit (%)</b>	Not Available	<b>Gas group</b>	Not available
<b>Vapour pressure (kPa)</b>	6.4 @ 40 °C	<b>pH as a solution (1%)</b>	9.8
<b>Solubility in water (g/L)</b>	Miscible	<b>VOC (g/L)</b>	Not available

## SECTION 10. STABILITY AND REACTIVITY

<b>Chemical stability</b>	<ul style="list-style-type: none"> <li>Unstable in the presence of incompatible materials.</li> <li>Product is considered stable.</li> <li>Hazardous polymerisation will not occur.</li> </ul>
<b>Reactivity</b>	See section 7
<b>Possibility of hazardous reactions</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

## SECTION 11. TOXICOLOGICAL INFORMATION

<b>Inhaled</b>	Not normally a hazard due to non-volatile nature of product. Inhalation of vapours or mists may cause respiratory irritation.
<b>Ingestion</b>	Ingestion of large quantities may cause irritation to the digestive tract, nausea, vomiting, diarrhoea, headache, confusion.
<b>Skin contact</b>	The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.
<b>Eye</b>	May produce eye irritation and discomfort.
<b>Chronic</b>	<p>Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless, exposure by all routes should be minimised.</p> <p>As with any chemical product, contact with unprotected bare skin, inhalation of vapour, mist or dust in workplace atmosphere; or ingestion in any form, should be avoided by observing good occupational work practice.</p>

<b>Toxicity</b>	(Rat) LD50: 8471 mg/kg.
<b>Acute toxicity</b>	Data not available to make classification.
<b>Acute inhalation toxicity</b>	Not considered to be an inhalation hazard under normal conditions of use.
<b>Mutagenicity</b>	Data not available to make classification
<b>Carcinogenicity</b>	Data not available to make classification
<b>Teratogenicity</b>	Data not available to make classification



## SECTION 12. ECOLOGICAL INFORMATION

**DO NOT** discharge into sewer or waterways.

### Ecotoxicity

AdBlue	End Point	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
Urea	End Point	Test Duration (hr)	Species	Value	Source
	LC50	96	Fish	5mg/L	2
	EC50	48	Crustacea	3910mg/L	2
	BCF	24	Algae or other aquatic plants	0.05mg/L	2
	EC100	24	Crustacea	>10000mg/L	1
	NOEC	96	Crustacea	1000mg/L	2
Water	End Point	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
<b>Legend:</b>	1. IUCLID Toxicity Data				
	2. US EPA, Ecotox database - Aquatic Toxicity Data				

**Atmospheric fate** - Urea will not evaporate from water to the atmosphere and is expected to be readily degraded by reactions with photochemically produced hydroxyl radicals; half-life is expected to be less than 1 day. Degradation of urea to ammonia causes NH<sub>3</sub>-emissions to the air.

**Terrestrial Fate** - Urea will hydrolyse into ammonium in a matter of days to several weeks. Urea is relatively leachable from the soil into surface water and groundwater especially if the soil surface is saturated with water.

**Aquatic fate** - Urea is very soluble in water and may rapidly biodegrade to a moderate extent. Urea is not expected to evaporate significantly. Urea can be leached relatively easily into the surface water and the groundwater. Degradation products (e.g. nitrate, nitrite and ammonium) can be measured after urea has undergone biodegradation.

**Ecotoxicity** - Urea is not likely to undergo bioaccumulation and generally has low acute ecotoxicity to organisms. The degradation product of urea, ammonia, is known to be toxic to all vertebrates; however, in neutral and acidic conditions, ammonia exists in the form of the ammonium ion. Urea may directly influence eutrophication in the environment and there is a pollution risk to groundwater.

### Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
Urea	Low	Low
Water	Low	Low

### Bio accumulative potential

Ingredient	Bioaccumulation
Urea	Low (BCF – 10)
Water	Low (LogKOW = -1.38)

### Mobility in soil

Ingredient	Mobility
Urea	Low (KOC = 4.191)
Water	Low (KOC = 14.3)

## SECTION 13. DISPOSAL CONSIDERATIONS

### Waste treatment methods

<b>Product/Packaging disposal</b>	<ul style="list-style-type: none"> <li>• Recycle wherever possible.</li> <li>• 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.</li> <li>• 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).</li> <li>• Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.</li> <li>• Disposal should be in accordance with applicable regional, national, and local laws and regulations.</li> </ul>
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## SECTION 14. TRANSPORT INFORMATION

### International transport regulations

Not classified as dangerous for transportation (ADG, IMDG or IATA respectively).

### HAZCHEM

None.

## SECTION 15. REGULATORY INFORMATION

**Safety, health and environmental regulations/legislation specific to the substance or mixture Urea (57-13-6) is found on the following regulatory lists:**

Australian Inventory of Chemical Substances (AICS).

National Inventory	Status
Australia - AICS	Y
Canada - DSL	Y
Canada - NDSL	N (urea)
China - IECSC	Y
Europe – EINEC/ELINC/NLP	Y
Japan - encls	Y
Korea - KECI	Y
New Zealand - NZIoC	Y
Philippines - PICCS	Y
USA - TSCA	Y

<b>Legend:</b>	<p>Y = all ingredients are on the inventory</p> <p>N = not determined or one or more ingredients are not on the inventory and are not exempt from listing (see specific ingredients in brackets)</p>
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## SECTION 16. OTHER INFORMATION

**MSDS version number:** 2.2\_AUS

**MSDS effective date:** 30/04/2019

### Reason(s) for Issue:

This SDS summarises to our best knowledge at the date of issue, the chemical health and safety hazards of the material and general guidance on how to safely handle the material in the workplace. Since Mammoth Equipment & Exhausts Pty Ltd cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, assess and control the risks arising from its use of the material.

If clarification or further information is needed, the user should contact their Mammoth representative or Mammoth Equipment & Exhausts Pty Ltd at the contact details on page 1.

Mammoth Equipment & Exhausts Pty Ltd 's responsibility for the material as sold is subject to the terms and conditions of sale, a copy of which is available upon request.