



SAFETY DATA SHEET

Version: 2.2_AU

SECTION 1. PRODUCT IDENTIFICATION AND SUPPLY COMPANY DETAILS

Product name: AdBlue[®]
Synonyms: AUS 32 (Aqueous urea solution); DEF (Diesel exhaust fluid)
Recommended use: Additive for injection into diesel SCR exhaust systems (NO_x reduction in exhaust gases).
Supplier: Mammoth Equipment and Exhausts
ABN: 22 149 528 316
Street Address: 15 Ernest Clark Road, Canning Vale, WA 6155
Email: sales@mammothequip.com.au
Telephone: 1300 310 340
Facsimile: 1300 310 350
Emergency Telephone no: 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.

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

SECTION 3. COMPOSITION INFORMATION

CHEMICAL ENTITY	CAS NO.	PROPORTION
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

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

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


- Limit any unnecessary personal contact.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Avoid vapour inhalation.

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

Conditions for safe storage, including any incompatibilities

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

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Appropriate engineering controls	Natural ventilation is adequate under normal use conditions.
Hygiene measures	<ul style="list-style-type: none"> • Keep away from food, drink and animal feeding troughs. • DO NOT eat, drink or smoke when handling. • Wash hands prior to eating, drinking or smoking. • Avoid contact with clothing. • Avoid eye contact and repeated or prolonged skin exposure. • Ensure that eyewash stations and safety showers are close to the workspace.
Personal protection	
Eye and face protection	<ul style="list-style-type: none"> • Safety glasses with side shields; or as required. • Chemical goggles. • In the event of chemical exposure, begin eye irrigation immediately • 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.
Skin protection	See hand protection below
Hands protection	<ul style="list-style-type: none"> • Wear chemical protective gloves.

	<ul style="list-style-type: none"> 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. 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.
Thermal hazard	Not available.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

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

SECTION 10. STABILITY AND REACTIVITY

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

Inhaled	Not normally a hazard due to non-volatile nature of product. Inhalation of vapours or mists may cause respiratory irritation.
Ingestion	Ingestion of large quantities may cause irritation to the digestive tract, nausea, vomiting, diarrhoea, headache, confusion.
Skin contact	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.
Eye	May produce eye irritation and discomfort.
Chronic	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. As with any chemical product, contact with unprotected bare skin, inhalation of vapour, mist or dust in work place atmosphere; or ingestion in any form, should be avoided by observing good occupational work practice.
Toxicity	(Rat) LD50: 8471 mg/kg.
Acute toxicity	Data not available to make classification.
Acute inhalation toxicity	Not considered to be an inhalation hazard under normal conditions of use.
Mutagenicity	Data not available to make classification
Carcinogenicity	Data not available to make classification
Teratogenicity	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
Legend:	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 NH₃-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

Product/Packaging disposal	<ul style="list-style-type: none"> 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. Disposal should be in accordance with applicable regional, national, and local laws and regulations.
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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

Legend:

Y = all ingredients are on the inventory

N = not determined or one or more ingredients are not on the inventory and are not exempt from listing (see specific ingredients in brackets)

SECTION 16. OTHER INFORMATION

MSDS version number: 2.2

MSDS effective date: 30/04/2019

MSDS version number: 4.0_NZ

MSDS effective date: 17/04/2019

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.