



SAFETY DATA SHEET

Version #: 2.0

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

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2. HAZARD IDENTIFICATION

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

Risks: None under normal operating conditions.

3. COMPOSITION INFORMATION

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

4. FIRST AID MEASURES

General Information: Not expected to be a health hazard when used under normal conditions.

If poisoning occurs, contact a doctor or Poisons Information center (Phone Australia 131 126).

Inhalation:

AdBlue® decomposes, particularly at high temperatures, to form Ammonia. At room temperature, Ammonia is a colorless, highly irritating and corrosive gas with a pungent, suffocating odor. Exposure to high concentrations of ammonia, for example in confined spaces, causes immediate burning of the nose, throat and respiratory tract. This can cause bronchiolar and alveolar edema, and airway destruction resulting in respiratory distress or failure. Inhalation of lower concentrations can cause coughing, and nose and throat irritation. Ammonia's odor provides adequate early warning of its presence, but ammonia also causes olfactory fatigue or adaptation, reducing awareness of one's prolonged exposure at low concentrations.

- If symptoms occur, remove victim from contaminated area and place in a well-ventilated area - avoid becoming a casualty. Allow patient to assume most comfortable position and ensure that their airways are open. Keep at rest until fully recovered. Seek medical advice if effects persist.

Skin contact:

Immediately remove all contaminated clothing, including footwear. Flush exposed area with large amounts running water and soap. Seek medical advice if persistent irritation occurs.

Ingestion:

DO NOT INDUCE VOMITING. Rinse mouth with water. If large quantities were ingested, seek medical attention immediately.

Eye:

Flush the eye with large amounts of water, holding eyelid open. Take care not to flush contaminated water into the non-affected eye. Removal of contact lenses should only be undertaken by skilled personnel. If irritation persists, seek medical attention.

5. FIRE FIGHTING MEASURES**a) HAZCHEM CODE:**

None

b) Flammability:

Not flammable.

c) 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.

d) Firefighting procedures:

Avoid vapours inhalations; ammonia can release during a fire. Fire fighters to wear full protective clothing and self-contained breathing apparatus (SCBA). Cool down containers/equipment exposed to heat with a water spray. If safe to do so, move undamaged containers from fire area. Avoid fire-fighting water entering the environment.

6. ACCIDENTAL RELEASE MEASURES

- a) Minor Spills:** Clean up all spills immediately with absorbent materials. Avoid breathing vapours and contact with skin and eyes. Wear protective equipment to prevent skin and eye contamination and inhalation of vapours. Contain and absorb spill with sand, earth or spill kit and place in a suitable, labelled container for disposal.
- b) Major Spills:** Clear area of all personnel. Alert Fire and Emergency Services 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 if safe to do so. Use absorbents material (soil, sand or other inert materials) and place into labelled container for disposal. If contamination of drains or waterways occurs, advise the local emergency services.

7. HANDLING AND STORAGE

- a) Storage Incompatibility:** Avoid reaction with oxidizing agents
- Storage Requirements:** Store in original containers.
Keep containers securely sealed.
Keep in properly labelled containers.
Store in a cool, dry, well-ventilated area.
Store away from incompatible materials and foodstuff containers.
Protect containers against physical damage and check regularly for leaks.
- b) Handling:** Handle in accordance with good industrial hygiene and safety practice.
Limit all unnecessary personal exposure.
Wear protective clothing when risk of exposure occurs.
Avoid vapours inhalation.
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.
DO NOT allow clothing wet with material to stay in contact with skin.
When handling product in drums, wear safety footwear and use proper handling equipment.
- c) Storage:** Keep container tightly sealed and in a cool, well-ventilated place.
Use properly labelled and containers.
- d) Recommended Materials:** For containers or container linings, use stainless steel or high density polyethylene.
- e) Unsuitable Materials:** PVC.

8. EXPOSURE CONTROLS | PERSONAL PROTECTION

- a) exposure Limits:** No value assigned for this specific material by Safe Work Australia.
- b) Biological Limit Values:** In accordance with the National Model Regulations for the Control of Workplace Hazardous Substances (Safe Work Australia) the ingredients of EcoBlue do not have a Biological Limit Allocated.
- c) Engineering Measures:** Natural ventilation should be adequate under normal use conditions. Keep containers closed when not in use.
- e) Hygiene Measures:** 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.
- d) PPE:** OVERALLS, SAFETY SHOES, SAFETY GLASSES, GLOVES.
Use in an area equipped with a safety shower.
- e) Hand Protection:** Wear chemical protective gloves, e.g., PVC. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must be worn on clean hands. After using gloves, hands should be washed and dried thoroughly.
- f) Eye Protection:** Safety goggles with side shields. Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document describing the wearing of lenses or restriction on use, should be created. First Aid personnel should be trained in their removal and suitable equipment should be readily available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Liquid
Colour:	Clear to hazy green
Odour:	Odourless or slight smell of ammonia
pH:	9.8 – 10.0
Boiling Point °C:	103
Freezing point °C:	-11
Density:	1.09 g/cm ³ (20°C)
Flash Point:	No data available
Evaporation rate:	No data available
Flammability Limits:	No data available
Auto ignition temperature °C:	No data available
Viscosity:	Dynamic: 1,4 mPa·s (1,4 cP) [25 °C]

Total VOC (g/litre): Not available

10. STABILITY AND REACTIVITY

- a) **Stability:** Stable at normal conditions.
Decomposes at high temperatures into Ammonia gas, Carbon oxides and Nitrogen oxides (NOx).
- b) **Reactivity:** No reactive hazards are known for this material.
- c) **Materials to avoid:** Strong oxidising agents, strongly alkaline and strongly acidic materials.
- d) **Conditions to avoid:** High temperatures (> 35oC) and direct sunlight.

11. TOXICOLOGICAL INFORMATION

- General Information:** No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:
- Acute oral toxicity:** Expected to be of low toxicity: LD50 > 5000 mg/kg, Rat.
- Acute dermal toxicity:** Expected to be of low toxicity: LD50 > 5000 mg/kg, Rabbit.
- Acute inhalation toxicity:** Not considered to be an inhalation hazard under normal conditions of use.
- Skin irritation:** Not expected to be a hazard.
- Eye irritation:** Not expected to be a hazard.
- Respiratory irritation:** Inhalation of vapours or mists may cause irritation.
- Sensitisation:** Not expected to be a skin sensitiser.
- Repeated dose toxicity:** Not expected to be a hazard.
- Mutagenicity:** Not considered a mutagenic hazard.
- Carcinogenicity:** Components are not known to be associated with carcinogenic effects.
- Teratogenicity:** Not expected to be a hazard.

12. ECOLOGICAL INFORMATION

- General Information:** Ecological data has not been determined specifically for this product. Information given is based on a knowledge of the components and ecotoxicity of similar products.
- Acute toxicity:** Expected to be practically nontoxic: LL/EL/IL50 > 100 MG/l
- Persistence and Degradability:** The product is readily biodegradable.
- Bioaccumulative potential:** Risk of bioaccumulation in an aquatic species is low.
- Other Adverse Effects:** Not expected to have ozone depletion potential. Will exert oxygen demand when significant quantities enter watercourses and may cause damage to aquatic life.

13. DISPOSAL CONSIDERATIONS

- Material Disposal:** Recover and recycle if possible. Do not dispose into environment, in drains or in watercourses. Persons conducting disposal, recycling or reclamation activities should ensure that appropriate personal protection equipment is used (refer to section 8D of this MSDS).
- Local Legislation:** Disposal should be in accordance with applicable regional, national, and local laws and regulations

14. TRANSPORT INFORMATION

- ADR:** This material is not classified as dangerous according to the Australian Dangerous Goods Code (ADG7). For either ADG, IMDG or IATA respectively.
- HAZCHEM:** None

15. REGULATORY INFORMATION

- Chemical Inventory Status:** All the constituents of this product are listed on the Australian Inventory of Chemical Substances (AICS).
- Other Information:** This Product is NOT subject to the following international agreements:
- Montreal Protocol (Ozone depleting substances).
 - The Stockholm Convention (Persistent Organic Pollutants).
 - The Rotterdam Convention (Prior Informed Consent).
 - Basel Convention (Hazardous Waste).
 - International Convention for the Prevention of Pollution from Ships (MARPOL).

16. OTHER INFORMATION

- MSDS version number:** 2.0
- MSDS effective date:** 10/6/2014
- MSDS distribution:** The information in this document should be made available to all who may handle the product.
- Disclaimer:** Although every care has been taken in compiling this document and ensuring its accuracy, the data and information are solely reliant upon information available to us at the time. We believe the data to be correct, however, for the aforementioned reasons, Mammoth Equipment and Exhausts or any of its subsidiaries make no warranty, express or implied, with respect to the accuracy or completeness of such information, and we assume no liability resulting from its use.

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