



SAFETY DATA SHEET

According to Regulation (EC) No. 2015/830

AdBlue[®] - NOx reduction agent AUS 32 for diesel engines with respect to ISO 22241 requirements.

SECTION 1: Identification of the substance/ mixture and of the company/ undertaking
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1.1 Product identifier

Product identifier : Water solution of urea, AUS 32

Registration number REACH : **01-2119463277-33-0018**

Trade name : AdBlue[®]

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : The product is a NOx-gases reduction agent used in the selective catalytic reduction (SCR) in motor vehicles with a diesel engine.
Additive for reduction of NOx emission from diesel engine exhausts.

Unidentified uses : None known.

1.3 Details of the supplier of the safety data sheet

Supplier : GreenChem Holding BV
Gravinnen van Nassauboulevard 95
4811 BN BREDA - The Netherlands
Tel. +31 (0)76 – 581 27 27
[e-mail: info@greenchem-adblue.com](mailto:info@greenchem-adblue.com)



1.4 Emergency Telephone Numbers

National toxicological Information

Centre : +31 030 - 274 8888

National emergency number : 112 (24 hour service) – applicable to EU countries only.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Substance is not classified as dangerous according to regulation (EC) 1272/2008 of the European parliament and of the council, on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC and amending Regulation (EC) No 1907/2006.

Risk identification : None

2.2 Label elements : None

2.3 Other hazards : No information available.

SECTION 3: Composition/information on ingredients

3.1 Substances

Classification:						
	CAS:	EC:	Category:	H-phrases:	Pictogram:	Content (%)
<i>Urea</i>	57-13-6	200-315-5	--	--	--	32,5

Name and REACH registration

Number : Aqueous urea (32.5%) solution
01-2119463277-33-0018

3.2 Mixtures

The substance is not a mixture of more substances.



SECTION 4: First aid measures

4.1 Description of first aid measures

General	:	Move victim to a safe area. If unconscious, place in recovery position and seek medical advice. No action shall be taken involving any personal risk or without suitable training. Actions shall be taken by certificated and trained personal.
Eye contact	:	Irrigate thoroughly with water for at least 10 minutes. Obtain medical attention.
Skin contact	:	Wash contaminated skin with soap and warm water. Remove contaminated clothing and shoes. If irritation persists seek medical attention.
Inhalation	:	Remove from exposure. In severe cases, or if recovery is not rapid or complete seek medical attention.
Ingestion	:	Wash out mouth with water. Do not induce vomiting. If patient is conscious, give water to drink. If patient feels unwell seek medical attention.

4.2 Most important symptoms and effects, both acute and delayed

: No information available.

4.3 Indication of any immediate medical attention and special treatment needed

: Instructions for medical personnel: treat symptomatically. Clinical tests and medical observations of delayed effects are not available. Antibodies and counter-indications are not known.



SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Urea solution has not flammable properties.

Suitable extinguishing media : Extinguishing media select in relation to surrounding fire.

Unsuitable extinguishing media : Combustible material and extinguishing media that cannot be used in relation to surrounding fire.

5.2 Special hazards arising from the substance or mixture

: When AdBlue is stored in a GreenChem tank system and a fire or extreme heat threatens the system, a pressure increase will occur and the container may burst. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Always follow directions in applicable emergency plans.

Hazardous combustion products : Combustion products may include the following materials: Carbon Oxides, Nitrogen Oxides, and Ammonia.

5.3 Advice for firefighters : Irritating substances may be emitted upon thermal combustion so self-contained breathing apparatus will be required.

SECTION 6: Accidental release measures
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6.1 Personal precautions, protective equipment and emergency procedures

: Wear suitable protective clothing. Avoid contact with eyes, skin and clothing. Contamination does not rise. Flush the residues down into the sewage and drainage



- 6.2 Environmental precautions : system leading to waste treatment plant in a controlled manner. Prevent large quantities from contacting soil, waterways and sewerage. Report contamination. Keep animals away from large spills. The product is not classified as hazardous for environment.
- 6.3 Methods and material for containment and cleaning up : Spilled product must be swept up and place into approved containers for later disposal. Eventually flush contaminated place with plenty of water. If needed contaminated earth must be evacuated. Dispose of the waste in compliance with Section 13.
- 6.4 Reference of other sections : For more information on protective equipment see section 8. For more information on the disposal of waste substance, see section 13.

SECTION 7: Handling and storage

Handling and storage is only done with respect to ISO 22241-3 requirements.

- 7.1 Precautions for safe handling : Ensure sufficient local ventilation by handling. Avoid contact of product with eyes, skin and clothing by wearing suitable personal protective clothing. Avoid breathing vapor or mist. Ensure eyewash facilities are located close to the working environment.
- 7.2 Condition for safe storage, including any incompatibilities : Store under cool dry conditions. Transported in insulated tank wagons, palletized plastic tanks (IBC) or HDPE drums and cans. Materials suitable for these tanks are alloy steels, various plastics, as well as metal tanks with plastic coating. Plain carbon steel, copper, aluminum, alloys containing copper



7.3 Specific end use(s) : and aluminum, galvanized steels must not be used.
Specific use is given in the instructions for use on the product packaging label or in the product documentation.

SECTION 8: Exposure controls/personal protection
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8.1 Control Parameters

Exposure limit values according to Directive 200/39/EC, as amended – are not specified.

Limit values of biological exposure tests indicators are not specified in Directive no. 98/24/EC, as amended.

DNEL values : Workers - Hazard via inhalation route
Long term exposure & acute/short term exposure.
DNEL: 292 mg/m³

Workers - Hazard via dermal route
Long term exposure & acute/short term exposure.
DNEL: 580 mg/kg bw/day

General Population - Hazard via inhalation route
Long term exposure & acute/short term exposure.
DNEL: 125 mg/m³

General Population - Hazard via dermal route
Long term exposure & acute/short term exposure.
DNEL: 580 mg/kg bw/day

General Population – Hazard via oral route
Long term exposure & acute/short term exposure.



DNEL: 42 mg/kg bw/day

PNEC values : Hazard for aquatic organisms
 Freshwater
 PNEC aqua (freshwater)
 0.047 mg/L

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Provide sufficient ventilation.

8.2.2 Individual protection measures, such as personnel protective equipment:

Directive EU 89/656/EEC and Directive EU 89/686/EEC introduces all personal protective equipment used.

Eye/face protection	:	Protective goggles (EN 166)
Skin protection	:	Put on suitable protective clothes (EN 340) and shoes. Wash hands, forearms and face thoroughly after handling chemical products, before eating/smoking and using the lavatory and at the end of every working period.
Hand protection	:	Use suitable protective gloves. Selection of a suitable glove material, consult the supplier of gloves. (EN 374)
Other	:	Put on suitable protective clothes and shoes.
Respiratory protection	:	Wear appropriate respirator when ventilation is inadequate. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: organic vapor filter (Type A), ammonia filter (Type K).
Thermal hazards	:	Information is not available.



8.2.3 Environmental exposure

Controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. See directives 80/68/EEC, and Directive 96/62/EEC, on air.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties:

Appearance	:	Clear liquid
Granulomere	:	Not relevant
Physical state	:	Liquid
Color	:	Colorless
Odor	:	Possibly slightly ammonia
Odor threshold	:	No information available

Safety data

PH-value	:	max. 10(Value of a 10%water solution)
Viscosity, dynamic	:	±1, 4mPa.s at 25°C

Relative density	:	1 087-1 093 k g/ m ³ (20°C/ 68°F)
Melting point	:	-11, 5°C (11, 3°F)
Boiling point	:	103°C (217, 4°F) 100°C: decomposition temperature
Water solubility	:	Easily miscible

9.2 Other information:

Molecular weight	:	60, 06 kg/kmol
Thermal conductivity (at 25 °C)	:	cca 0, 570 W/m.K
Specific heat (at 25 °C)	:	cca 3, 40 kJ/ kg.K
Surface tension (at 20 °C)	:	min. 65 mN/m
Refractive index at 20 °C	:	1, 3814 – 1, 3843



Crystallization point : -11, 5 °C

SECTION 10: Stability and reactivity

- 10.1 Reactivity : Stable under recommended storage and handling conditions (see sections 7, handling and storage).
- 10.2. Chemical stability : Stable under recommended storage and handling conditions (see section 7, handling and storage)
- 10.3. Possibility of hazardous reactions : When heated, decomposition of products. Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- 10.4. Conditions to avoid : Heating causes thermal decomposition and the gases formation.
- 10.5. Incompatible materials : Not known
- 10.6. Hazardous decomposition products : NO_x, NH₃, CO₂
Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

- Acute toxicity : Oral (rat) LD₅₀ >2000 mg/kg
Based on available data, the classification criteria are not met.
- Skin corrosion/ irritation : Skin irritation (rabbit): short term irritation - not harmful.
Based on available data, the classification criteria are not met.
- Serious eye damage/ irritation : Eyes irritation (rabbit): slightly harmful.
Based on available data, the classification criteria are not met.



Respiratory or skin sensitization	:	Repeated and long – lasted contact with skin may cause sensitization. Based on available data, the classification criteria are not met.
Germ cell mutagenicity	:	Based on available data, the classification criteria are not met.
Carcinogenicity	:	Based on available data, the classification criteria are not met.
Reproductive toxicity	:	Based on available data, the classification criteria are not met.
STOT – single exposure	:	Based on available data, the classification criteria are not met.
STOT – repeated exposure	:	Based on available data, the classification criteria are not met.
Aspiration hazard	:	Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1. Toxicity	:	The product is not classified as hazardous for environment.
12.2. Persistence and degradability:		Significant biodegradation in water and soil.
12.3. Bioaccumulative potential	:	Low bioaccumulation potential.
12.4. Mobility in soil	:	No information available.
12.5. Results of PBT and vPvB assessment	:	Based on the PBT and vPvB assessment the substance is not a PBT / vPvB substance.
12.6. Other adverse effects	:	No information available

SECTION 13: Disposal considerations
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13.1. Waste treatment methods	:	Depending on the degree and character of contamination use for agricultural purposes or dispose of under control by authorized waste disposal contractors. Empty container damaged during using must be stored at the designed place and disposed of in a
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solid waste incineration plant. Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU directive 91/689/EEC.

SECTION 14: Transport information

Product is not classified, i.e. is not regarded as a dangerous material according to the Orange Book of UNO and international codes of transport, e.g. RID (railway), ADR (road transport) and IMDG (sea transport).

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|--|---|--|
| 14.1. UN number | : | Not subject to provisions. |
| 14.2. UN proper shipping name | : | Not subject to provisions. |
| 14.3. Transport hazard class (es) | : | Not subject to provisions. |
| 14.4. Packing group | : | Not subject to provisions. |
| 14.5. Environmental hazards | : | AdBlue is not classified as environmentally hazardous substance according to the ADR/RID/IMDG Code. |
| 14.6. Special precautions for user | : | Transported in insulated tank trucks or palletized plastic tanks (IBC). Material suitable for these tanks are alloy steels, various plastics, as well as metal tanks with plastic coating copper and aluminum, galvanized steels must not be used. |
| 14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code | : | Not known |

SECTION 15: Regulatory information

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|---|---|---|
| 15.1. Safety, health and environmental regulations/ legislation specific for the substance or mixture | : | Corrigendum to Regulation (EC) No 1907/2006 of the European Parliament and of the Council 18 of December 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals |
|---|---|---|



(REACH).

Regulations (EC) No 1272/2008 of the European parliament and of the Council 16 of December 2008 on classification, labeling and packaging of sub- stances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC and amending Regulation (EC) No 1907/2006.

Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH). Decree No 355/2006 Coll. of the Government of the Slovak Republic on health protection of employees against occupational risks related to the exposition to chemical factors and as amended;

CLP-regulations : According to Regulations (EC) No 1272/2008 of the European parliament and of the Council 16 of December 2008 on classification, labeling and packaging of sub stances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC and amending Regulation (EC) No 1907/2006.

15.2. Chemical safety assessment : Chemical safety assessment was carried out.

SECTION 16: Other information

16.1. Used information sources : Available information from Duslo Company, European Chemicals Agency (ECHA) and ISO 22241 part 1 to 5.

16.2. Instructions for the training : Instructions in work with product shall be included into the educational system about the safety work (initial training, training at



16.3. List of relevant H phrases	:	the workplace, repeated training) according to concrete conditions at the workplace. H- phrases: None
16.4. Change made in the revision	:	--
16.5. Other information	:	Legend to abbreviations and acronyms

- CAS – Chemical Abstract Service
- EC – European Community number of a chemical for EINECS, ELINCS and NLP inventories
- PBT – Persistent, Bioaccumulative and Toxic substances.
- vPvB – Very Persistent and very Bioaccumulative substances.
- LD₅₀ – Lethal dose, 50%
- LC₅₀ – Lethal concentration, 50%
- EC₅₀ – Hal maximal effective concentration
- IC₅₀ – Half maximal inhibitory concentration
- SVHC – Substances of very high concern
- DNEL – Derived no-effect level

History

Date of issue	:	01-01-2017
Previous date	:	31-10-2016
Version	:	11

The data corresponds to our current knowledge and describes our product with regard to safety requirements. All materials may represent unknown hazards and should be used with caution.

GreenChem Holding BV disclaims any liability for loss or damage resulting from the use of any data, information or recommendations set out in this Safety Data Sheet.