



SAFETY DATA SHEET
According to Regulation (EC) No. 453/2010
AdBlue[®] - NOx reduction agent

1. Identification of the substance/ preparation and company/ undertaking

Product identifier : Water solution of urea, AUS 32
Registration number : **01-2119463277-33-0018**
Trade name : AdBlue[®]

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

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.

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2. Hazards identification

2.1 Classification of the substance or mixture

Mixture 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.



3. Composition/ information on ingredients
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3.1 Substances

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

3.2 Mixtures

Classification:						
Contains no hazardous mixtures						
	CAS:	EC:	Category:	H-phrases:	Pictogram:	Content (%)

Notes : *full text H- phrases is referred in point 16.

3.3 Name and registration number

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

4. First aid measures

4.1 Description of first aid measures

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|----------------------------|---|---|
| General | : | Move the victim to a safe area. If unconscious, place in recovery position and seek medical advice. Irregular breathing or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personal. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Allow the victim to rest in a well-ventilated area. If needed call medical attention. |
| Protection of first-aiders | : | No action shall be taken involving any personal risk or without suitable training. Actions shall be taken by certificated and trained personal. |
| Eye contact | : | Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 15 minutes. Get medical care if irritation occurs. |
| Skin contact | : | Wash contaminated skin with soap and warm water. Remove contaminated clothing and shoes. Obtain medical care if symptoms occur. |
| Inhalation | : | Move exposed person to fresh air. Obtain medical care if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. |



Ingestion : Wash out mouth with water. Drink circa 2 dcl. Lukewarm water, do not induce vomiting and seek for medical care. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Never give anything by mouth to an unconscious person. Obtain medical care if symptoms occur.

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

: No information available.

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing Media : Urea solution has not flammable properties. Use an extinguishing agent (like water spray (fog), foam, dry chemical or CO₂) suitable for the fire.

Unsuitable extinguishing media : None known.

5.2 Special exposure hazards : In a fire or if heated, 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 : Firefighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face piece operated in positive pressure mode.



6. Accidental release measures

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| 6.1 Personal precautions | : | Provide adequate ventilation. Put on appropriate personal protective equipment, personal precautions and emergency procedures. Contamination does not rise. Flush the residues down into the sewage and drainage system leading to waste treatment plant in a controlled manner. |
| 6.2 Environmental precautions | : | The product is not classified as hazardous for environmental. Avoid dispersal of spilt material and run off and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). |
| 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 water. If needed contaminated earth must be evacuated. |
| 6.4 Reference of other section | : | For more information on protective equipment see section 8. For more information on the disposal of waste substance, see section 13. |

7. Handling and storage

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| 7.1 Precautions for safe handling | : | Ensure sufficient local ventilation at handling. Reduce contact of product with skin by using suitable personal protective facilities (gloves). Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Ensure eyewash facilities are located close to the working environment. |
| 7.2 Condition for safe storage | : | Transported in insulated tank wagons or palletized plastic tanks (IBC). 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 and aluminum, galvanized steels must not be used. Retail package in canisters with volume of max. 15 l. The producer dispatches the urea solution with a temperature up to max.30°C. In order to avoid crystallization or hydrolysis in the urea solution, store under common conditions (optimally to 25°C). Keep container tightly closed and sealed until ready for use. Use appropriate containment to avoid environmental contamination. Keep container in a cool, well-ventilated area. Keep away from heat and direct sunlight. Packaging materials recommended: Use original containers. |



7.3 Specific end use(s) : See point 1.2

8. Exposure controls/ personal protection

8.1 Control Parameters

Highest exposure limits (NPEL) based on Slovak Order No. 355/2006 and as amended:
No limits established for this product.

Substance	EC	NPEL				Remark
		Average		Short-term		
		ml.m ⁻³ (ppm)	(mg.m ⁻³)	ppm	mg.m ⁻³	
ammonia	231-635-3	20	14	50	36	--

8.2 Exposure controls

Ensure sufficient local ventilation.

- Eye/face protection : Use safety eyewear designed to protect against splash of liquids.
- Skin protection : 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. (EN471)
- 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.

9. 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
Molecular weight	:	60, 06 kg/kmol
Thermal conductivity (at 25 °C)	:	cca 0, 57 W/m.K
Specific heat (at 25 °C)	:	cca 3, 4 kJ/ kg.K
Surface tension	:	min 65 Mn/m
Refractive index at 20 °C	:	1, 3814 – 1, 3843
Crystallization point	:	-11, 5 °C

10. Stability and reactivity

10.1 Stability	:	Stable under recommended storage and handling conditions (see sections 7, handling and storage).
10.2. Reactivity	:	Stable under recommended storage and handling conditions (see section 7, handling and storage)
10.3. Possibility of hazardous reactions	:	When heated, decomposition of products Ammonia (gas) 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 , NH ₃ , CO ₂

11. Toxicological information

11.1. Information on toxicological effects

Acute toxicity	:	Oral (rat) LD ₅₀ >2000 mg/kg
Skin corrosion/ irritation	:	Skin irritation (rabbit): short term irritation
Serious eye damage/ irritation	:	Eyes irritation (rabbit): slightly harmful.
Respiratory or skin sensitization	:	Repeated and long -lasted contact with skin may cause sensitization.
Germ cell mutagenicity	:	No information available.
Carcinogenicity	:	No information available.
Reproductive toxicity	:	No information available.
STOT – single exposure	:	No information available.
STOT – repeated exposure	:	No information available.
Aspiration hazard	:	No information available.



12. Ecological information

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| 12.1. Toxicity | : | Product has low water toxicity. In the event of watercourses affected by large amount of product, adverse effects on aquatic and flora can occur because of high consumption of oxygen. Toxicity to fish (<i>Leuciscus idus</i>). Dose > 6810 mg/ liter relating to urea. Exposure time 96 hours. Aquatic eco toxicity EC50 water fleas (<i>Daphnia magna</i>) Dose > 10,000 mg/ liter relating to urea. Exposure time 24 hours. |
| 12.2. Persistence and durability | : | Significant biodegradation in water and soil. |
| 12.3. Bio accumulative potential | : | Low bioaccumulation potential. Readily biodegradable. Do not allow uncontrolled discharge of the product into the environment. |
| 12.4. Mobility in soil | : | No information available. |
| 12.5. Results of PBT and vPvB Assessment | : | Not evaluated |
| 12.6. Other adverse effects | : | No information available |

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 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. |
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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 | : | -- |
| 14.2. UN proper shipping name | : | AdBlue |
| 14.3. Transport hazard class (es) | : | -- |
| 14.4. Packing group | : | -- |
| 14.5. Environmental hazards | : | AdBlue is not classified as environmental hazardous substance according to the ADR/RID/IMDG Code. |
| 14.6. Special precautions for user | : | -- |



14.7. Transport in bulk according to Annex II of MARPL 73/78 and the IBC Code Packing :

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. Retail package in canisters with a volume of max. 15l. The producer dispatched the urea solutions with a temperature up to max. 30°C. In order to avoid crystallization or hydrolysis in the urea solutions, store under common conditions (optimally to 25 °C).

15. Regulatory information

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.

16. Other information

16.1. Used information sources :

Available information from Duslo Company.



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

History

Date of issue	:	01-01-2016
Previous date	:	30-01-2015
Version	:	10.0

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.