AdBlue® - NOx reducing agent

1. Identification of the substance/company/enterprise

Product identifier	: Aqueous urea solution, AUS 32
Registration number	: 01-2119463277-33-0018
Trade name	: AdBlue®

Relevant identified uses of the substance and uses not recommended:

The product is a NOx reducing agent used for selective catalytic reduction (SCR) in diesel vehicles.

Supplier	GreenChem Holding BV Gravinnen van Nassauboulevard 95 4811 BN BREDA - Holandsko Tel. +31 (0)76 – 581 27 27
Emergency call numbers	National emergency number 112
Local representative	: X

2. Hazards identification

2.1 Classification of the substance or coating

The mixture is not classified as dangerous according to the Regulation (EC) 1272/2008 of the European Parliament and Council on the classification, labeling and packaging of substances and mixtures, changing 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

3.1. Substances

Clasification:						
	CAS:	CE:	CATEGORY:	FRAZE H:	ICON:	CONTENT%

UREA						
	57-13-6	200-315-5	- -	- -	- -	32,5

3.2. Coatings

Classification: it does not contain dangerous mixtures						
	CAS:	CE:	CATEGORY:	FRAZE H :	ICON :	CONTENT%
	- -	- -	- -	- -	- -	- -

Notes

* H-phrases with full text refer to point 16

3.3. Name and registration number

Urea in aqueous solution(32.5)
01-2119463277-33-0018

4. First-aid measures

4.1. Descrierea măsurilor de prim ajutor

General

: Bring the victim to a safe area. If the victim is unconscious, place it in the position of recovery and seek medical advice. If breathing is irregular or if respiratory arrest occurs, breathing will be practiced artificial or oxygen will be provided by qualified personnel. Keep an open path for air passage. Loosen tight clothing such as the collar, tie, belt, or band catch. Allow the victim to rest in a well-ventilated area. If necessary, seek medical attention.

Protection of first-aiders

No action will be taken involving personal risks or without adequate training. Measures will be taken by trained and certified personnel.

Eye contact

: Immediately flush eyes with plenty of water, occasionally raising the upper eyelid and the lower one. Remove the contact lenses if needed. Continue rinsing with water for at least 15 minutes. Ask for medical care if signs of irritation appear.

Skin contact

: Wash the contaminated skin with soap and warm water. Remove contaminated footwear and clothing. Get medical attention if symptoms are manifesting.

Inhalation

Move the person exposed to an airborne fresh area. Get medical attention if symptoms are manifesting. In the case of inhaling decomposition products resulting from fires, symptoms may appear later. The person exposed may need

	medical supervision for 46 hours.
Ingestion	: Rinse the mouth with water. Drink about 2 dcl of water if swallowed, do not induce vomiting, and get medical attention. If the material was swallowed and the person exposed is conscious, give him/her small amounts of drinking water. Don't administer to an unconscious person anything by mouth. If symptoms manifest get medical attention.

4.2 The most important symptoms and effects, both acute and delayed

: No information available

4.3. Indication of immediate medical attention and special treatment needed

: No information available

5. Fire-fighting measures

5.1. Extinguishing fire systems

Suitable extinguishing products	: Urea solution has no flammable properties. Use a fire extinguisher (such as water spray (mist), foam, powder dry chemical or CO2) suitable for fire
Inadequate extinguishing media	: Not known.
5.2. Special exposure hazards	: In case of fire or heat, the pressure will increase and the container may explode. Isolate without delay the dangerous place, removing all people near the incident if a fire is produced. It will not undertake actions that involve personal risks or without adequate training. Always respect indications from the applicable contingency plans.
Hazardous Combustion Products:	: Combustion products may include the following materials: Oxides of carbon, oxides of nitrogen, and ammonia.
5.3. Tips for firefighters	: Firefighters should wear equipment adequate protection and breathing apparatus SCBAs with a full face, operated under positive pressure.

6. Accidental release measures

6.1. Personal precautions	: Provide adequate ventilation. You wear appropriate personal protective equipment,take personal precautions, and apply emergency procedures.

	Contamination does not spread. Pour the residue into the system sewerage and drainage system leading to the wastewater treatment plant in mod control.
6.2. Environmental precautions surrounding	: The product is not classified as dangerous for the environment. Avoid dispersal of spilled material and leaks and contact with soil, pathways waterways, drains, and sewers. Inform the relevant authorities if the product caused environmental pollution (sewage, waterways, soil, or the air).
6.3. Methods and materials for control and clean	: The spilled product must be collected with a broom and placed in containers suitable for subsequent disposal. Eventually, the place will be washed contaminated with water. If necessary, the soil contaminated must be discharged.
6.4. Reference to other sections	For more information on protective equipment, see section 8. For additional information on waste disposal, see section 13.

7. Handling and storage

7.1. Precautions for handling in safety	: Ensure sufficient local ventilation overtime handling. Reduce skin contact by using adequate personal protective equipment(Gloves). Avoid contact with the eyes, skin, and clothing. Avoid inhaling vapors or the fog. Make sure the eye shower systems are in proximity to the workspace.
7.2. Conditions for safe storage	: Transported in isolated tank wagons or palletized plastic tanks (IBC). Suitable materials for these tanks are alloy steels, various plastics, as well as metal tanks with a layer of plastic protection. No carbon steel will be used simple, copper, aluminum, and copper alloys aluminum galvanized steels. The manufacturer delivers the urea solution at a temperature of up to max. 30 ° C. To avoid crystallization or hydrolysis in urea solution, store in typical conditions (ideally up to 25 ° C). Keep container tightly closed and sealed as long as possible be used. Use appropriate containment measures to avoid environmental contamination surrounding. Keep the container in areas cool and well ventilated. Protect from heat and directsunlight. Packaging materials Recommended: Use original containers.
7.3. Specific end use (s)	: See section 1.2.

8. Exposure controls / personal protection

8.1. Control parameters

The highest exposure limits (NPEL) based on Slovak Law no. 355/2006 and according to changes: No limits have been set for this product.

Substance	CE	NPEL				Note
		Average value		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

Provide sufficient local ventilation.

Eye/face protection	Wear safety goggles against splashing with liquids
Skin protection	Wash your hands, forearms, and face thoroughly afterward handling chemicals before consuming food/smoke and use the toilet, as well as at the end of each work period.
Hand protection	Wear suitable protective gloves. To select a suitable glove material, consult the glove supplier. (EN471)
Other	Equip yourself with clothing and gloves adequate protection.
Respiratory protection	Wear a suitable respirator if ventilation is inadequate. The process of choosing a respirator must be based on known or anticipated exposure levels, on product hazards, and functional limits safety of the selected respirator. Recommended: organic vapor filter (type A), ammonia filter (type K).
Thermal hazards	: Information not available.
8.2.3. Environmental exposure controls surrounding	Emissions from ventilation or exhaust equipment thing will be checked to ensure their compliance with the rules of the legislation of environmental protection.

9. Physical and chemical properties

Appearance	: Transparent liquid
Granulomer	: Not relevant
Physical state	: Liquid
Color	: Colorless

Odor	: Possible odor of ammonia
Odor threshold	: No information available

Security data

PH value	: max. 10 (value for a 10% water solution)
Viscosity, dynamic	: ± 1.4 mPa.s at 25˚C
Relative density	: 1087-1093 kg/m3 (20˚C/68˚F)
Melting point	: -11,5˚C (11,3˚F)
Boiling point	:103˚C (217,4˚F) 100˚C: temperatură de descompunere
Water solubility	: Very miscible
Molecular weight	60.06 kg / kmol
Thermal conductivity (at 25˚C)	: approx. 0.57 W / m.k
Specific heat (at 25˚C)	approx. 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. Physical and chemical properties

10.1. Stability	: Stable under recommended storage conditions and handling (see section 7, handling,and storage).
10.2. Stability	: Stable under recommended storage conditions and handling (see section 7, handling and storage).
10.3. Possibility of reactions dangerous	: If heated, products of decomposition Ammonia (gaseous) Under conditions normal storage and use should not hazardous decomposition products are emitted.
10.4. Conditions to avoid	: Heat causes thermal decomposition and gas formation
10.5. Incompatible materials	: Unknown
10.6. Hazardous decomposition products	: NOx, NH3, CO2

11. Toxicological information

11.1. Information on toxicological effects

Acute toxicity	: Oral (rat) LD50> 2000 mg / kg
Skin corrosion / irritation	: Skin irritation (rabbit): short-term irritation
Serious eye damage/irritation	: Eye irritation (rabbit): slightly harmful.
Respiratory or skin sensitizatio	: Repeated and prolonged skin contact may occur Cause sensibility.
Germ cell mutagenicity	: No information available.
Carcinogenicity	: No information available.
Reproductive toxicity	: No information available.
STOT - Single exposure	: No information available.

11. Toxicological information

12.1. Toxicity	The product has low toxicity in water. If waters affected by large quantities of products, may adverse effects on fauna and flora occurred aquatic, due to high oxygen consumption. Toxicity to fish (Leuciscus idus). Dose> 6810 mg / liter for urea. Exposure time: 96 hours. Aquatic ecotoxicity EC50 fleas water (Daphnia magna) Dose> 10,000 mg / literfor urea. Exposure time: 24 hours.
12.2. Persistence and durability	: Significant biodegradation in water and soil
12.3. Bioaccumulative potential	Bioaccumulative potential. Slightly biodegradable. Do not allowuncontrolled propagation.
12.4. Mobility in soil	: No information available.
12.5. Results of PBT and vPvB assessments	: Not evaluated
12.6. Other side effects	: No information available

13. Disposal considerations

Depending on the degree and nature of the contamination, used for agricultural purposes or disposed of under the control of disposal contractors authorized waste. Empty containers damaged in the time of use must be stored in a place specially indicated and disposed of in incineration of solid waste. Based on information currently held by the supplier, this product is not considered a waste dangerous, as defined in the EU directive 91/689 / EEC.

14. Transport information

The product is not classified, more precisely it is not considered a hazardous material according to the Book UN oranges and international transportation codes, e.g. RID (rail), ADR (road transport), and IMDG (shipping).

14.1. UN number	: - -
14.2. Appropriate UN shipping name	: AdBlue
14.3. Hazard classes during transport:	: - -
14.4. Packing group:	: - -
14.5. Environmental hazards	: AdBlue is not classified as a substance dangerous for the environment according to the code ADR / RID / IMDG.
14.6. Special precautions for the user	: - -
14.7. Transport in large volume according t o the Annex II of MARPOL 73/78 and the IBC code packing:	: Transported in isolated tank wagons or palletized plastic tanks (IBC). Suitable materials for these tanks are alloy steels, various plastics, as well as metal tanks with a layer of plastic and aluminum protection; you don't have to use galvanized steels. Package for sale retail in canisters with max. 15l. The manufacturer delivers urea solutions with a temperature up to max. 30 ° C. To avoid crystallization or hydrolysis in solutions of urea, store under typical conditions (ideally up to at 25 ° C).

15. Information on the regulatory framework

15.1. Specific safety, health, and environmental regulations / legislation applicable the substance or preparation

: Corrigendum to Regulation (EC) No 1907/2006 para European Parliament and Council of 18 December 2006 on the registration, evaluation, authorization, and restriction of substances(REACH).

: Regulation (EC) No 1272/2008 para European Parliament and Council of 16 December 2008 on classification, labeling, and packaging of substances and mixtures, of amending and repealing the Directives 67/548 / EEC and 1999/45 /EC as well as by amendment of 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 Council on the registration, evaluation, authorization, and restriction of substances (REACH). Decree no. 355/2006 Col. al Government of the Slovak Republic on protection employee health against risks occupational exposure to chemical factors, with subsequent amendments;

CLP Regulations	: According to Regulation (EC) No. 1272/2008 para European Parliament and Council of 16 December 2008 on classification, labeling, and packaging of substances and mixtures, of amending and repealing the Directives 67/548 / EEC and 1999/45 / EC as well as by amendment of Regulation (EC) No 1907/2006.
15.2. Chemical safety assessment	: Chemical safety assessment has been performed.

16. Other information

16.1. Sources of information used	: Information available from Duslo Company.
16.2. Instructions for training	: Instructions will be included when working with the product in the safety education system work (initial training, on - the - job training) work, continuing education) according to the conditions concrete workplace.
16.3. List of relevant H phrases	: H phrases: None
16.4. Revised changes	: - -
16.5. Other information	: Information is available.

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The data correspond to the information we currently have and describe the product in terms of rules of safety. All materials may present unknown hazards and must be used with caution.

GreenChem Holding BV assumes no liability for any loss or damage arising from the use of the data, information or recommendations set out in this safety data sheet.