

Safety Data Sheet (2002/58/EC)

AdBlue

Date of issue: 25 01 2005

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

Trade name of the preparation: AdBlue, AUS 32 Aqueous Urea Solution 32.5 %
NOx reducing agent AUS 32 DIN V 70070
Urea solution (32.5%)

(main application): Use of the substance
For reducing of nitrogen oxides in exhaust gases of Diesel engines (SCR-technology)

Company / Producer: AMI Agrolinz Melamine International GmbH
St.-Peter-Strasse 25, 4021 Linz / Austria

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2. Composition/information on ingredients

Chemical characterization: Aqueous solution of high purity urea
CAS No.: 57-13-6
EINECS No.: 200-315-5
Empirical formula: $\text{CH}_4\text{N}_2\text{O}$
Molecular mass: 60.06 kg/kmol

3. Hazards identification

Harmless according to EEC directives.

4. First aid measures

Eye contact: Rinse immediately with plenty of water, also under the eyelids.

Skin contact: Wash with water and soap as a precaution. Remove all contaminated clothing.

Ingestion: If swallowed, drink large quantities of water.
Seek medical advice if necessary.

5. Fire fighting measures

Special hazards: Not known. Product does not burn.

Protective equipment: Standard procedure for chemical fires.
In the event of fire wear self contained breathing apparatus.
Do not breathe fumes.

Extinguishing agents: Any, no restriction.
Cool the container/tank with spraying of water.

Safety Data Sheet (2002/58/EC)

AdBlue

Date of issue: 25 01 2005

6. Accidental release measures

Personal precautions:	Use eye / face protection, gloves and rubber boots when risk of splashing. Clean up spilled product to prevent slipping hazard.
Methods for cleaning up:	Transfer into suitable container for disposal. Small amounts: Flush with plenty of water.
Environmental precautions:	Do not release product into surface water. Do not empty into drains.

7. Handling and storage

Safe handling advice / Measures to prevent fire and explosions:	No special precautions necessary.
Requirements for storage:	Room temperature recommended to avoid cristallization below - 11.5 °C and hydrolysis at temperature above 30°C. Use heated and insulated containers and tanks, included tubes, valves and fittings, at ambient temperatures lower than -10 °C and higher than 30 °C, resp. Sun light protection
Materials to be used in direct contact with AdBlue:	Highly alloyed austenitic Cr-Ni-steels and Cr-Ni-Mo-steels acc. To DIN EN 10088-1 to -3 (i.e. 1.4541 and 1.4571), worked according industrial standard, Titanium, HDPE, HDPP, EPDM, Polyfluorethylene, Polyvinylidenedifluoride, PFA, Polyisobutylene, Viton Test other material before use on corrosiveness and on contamination potential of AdBlue. In general, before use materials have to be cleaned to avoid any contamination of AdBlue.
Materials not to be used in direct Contact with AdBlue:	Copper, copper alloys, iron, steels, zink coated steels.
Materials not to be stored together:	Keep away from strongly oxidizing materials and strong acids, do not store together with nitrites and salts containing nitrates.

8. Exposure controls/personal protection

Eye protection:	Safety glasses
Skin protection:	Gloves and work cloths

Safety Data Sheet (2002/58/EC)

AdBlue

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General industrial hygiene practice: Handle in accordance with good industrial hygienic and safety practice.
 Wash hands after manipulation. Keep material away from food, drink and animal feeding stuff.
 When using do not eat, drink or smoke.

9. Physical and chemical properties

Physical state:	Aqueous liquid
Aspect:	Clear and colourless
Odour:	No to slightly like ammonia
Thermal decomposition:	Starting slowly above about 30° C forming ammonia and carbon dioxide
Crystallization point:	- 11.5 °C
Solubility:	Miscible with water Slightly soluble in aliphatic hydrocarbons
pH-value:	Alkaline reaction
Density (20 °C):	1087 - 1092 kg/m ³
Viscosity (25°C):	about 1.4 mPas

10. Stability and reactivity

Hazardous reactions (conditions to be avoided):	Brisk hydrolysis at high temperatures, risk of burst of containers.
Hazardous reactions (substances to be avoided):	Strong oxidizing agents and strong acids, nitrites and salts containing nitrates, product is corrosive on base metals
Hazardous decomposition products:	Ammonia (NH ₃)

11. Toxicological information

Data referring to urea:	
Acute toxicity:	
LD50 oral rat:	> 10 000 mg/kg
Skin irritation (rabbit):	Non-irritant
Eye irritation (rabbit):	Non-irritant
Sensitisation:	Non-sensitising

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12. Ecological information

Data referring to urea:
 Biological degradability in water: 4 mg/l in 1 h at 20 °C
 The compound is well degradable.
 Zahn - Wellens - Test / 400mg/l:
 3 h: 2%, 7 d: 52%, 14 d: 85%, 16 d: 96%

Ecotoxicity:
 Acute toxicity in fish:
 LC 50 / 96 h / Leuciscus idus: > 6 810 mg/l

Acute toxicity in daphnia:
 LC 50 / 24 h / Daphnia magna Straus: > 10 000 mg/l

Growth Inhibition of algae:
 TGK /16 h / Pseudomonas putida: > 10 000 mg/l

Water hazard class (Germany): 1 – low risk to water

13. Disposal considerations

Waste from residues /
 Unused product: Dispose product and packing material according to local and national regulations.
 Contact manufacturer or the proper local authorities.

Recommended waste classification according EWC: 06 10 99 (Fertilizer residues – Waste, n.o.s. - non harmful)

14. Transport information

Not classified, i.e. considered non hazardous material according to the following international transport codes:

RID (rail)
 ADR (road)
 IMO (sea)
 ICAO /IATA (air)

15. Regulatory information

Classification according to EEC directives: No labelling required in accordance with EEC directives or respective national laws.

16. Other information

Before handling, storing or using the present product for the first time, employees must be informed about its properties and about measures specified herein to ensure safety and environment protection. For applications other than those set out in Chapter 1, please consult the manufacturer of the product to avoid unsafe activities.

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The present revision replaces the issue of 02 June, 2004.

Modifications since last issue: 10. Wording changed

Data sources: AIDA – basic data records, GESTIS – substance database,
Gmelin 14 C [D1], DIN V 70070, in-house investigations

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