



Basic AdBlue® delivered

# TDS Technical Data Sheet

## AdBlue®

**AUS 32 Aqueous Urea Solution 32.5%**  
**NOx-Reducing Agent AUS 32**  
**Automotive Grade Urea (AGU)**  
**Diesel Exhaust Fluid (DEF)**

*Very pure NOx-reduction agent for Diesel engines equipped with SCR catalysts.  
Produced from a fully integrated and dedicated production plant.*

AdBlue fulfils the quality standard ISO 22241 and DIN V 70070

Urea:  $(\text{NH}_2)_2\text{CO}$  Molar mass: 60

CAS No.: 57-13-6 EINECS-No.: 200-315-5

### CHEMICAL PROPERTIES:

**AdBlue** has a weak alkaline reaction. The pH of the solution at the production site is of 9.0 to 9.5. During storage pH value can change reaching approx. 10.

The urea solution decomposes slowly at room temperature, generating ammonia and carbon dioxide. The rate of this reaction increases if the solution is heated. Above approx. 70 °C biuret is formed additionally at a significant rate.

® = Registered trademark of  
Verband der Automobilindustrie



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## SPECIFICATIONS:

Parameters	U.M.	Limits	Nominal value	Test method
Urea content	% w/w	31,8 – 33,2	32,5	ISO 22241-2 Ann. C
Density at 20°C	kg/m <sup>3</sup>	1087,0 – 1093,0	1090,0	ISO 12185
Refractive index at 20°C	--	1,3814 – 1,3843	1,3829	ISO 22241-2 Ann. C
Alkalinity as NH <sub>3</sub>	% w/w	0,20 max.	0,15	ISO 22241-2 Ann. D
Biuret	% w/w	0,30 max.	0,20	ISO 22241-2 Ann. E
Aldehydes	mg/kg	5 max.	1	ISO 22241-2 Ann. F
Insolubles	mg/kg	20 max.	1	ISO 22241-2 Ann. G
Phosphate (PO <sub>4</sub> )	mg/kg	0.5 max.	0,05	ISO 22241-2 Ann. H
Calcium	mg/kg	0.5 max.	0,05	ISO 22241-2 Ann. I
Iron	mg/kg	0.5 max.	0,05	
Copper	mg/kg	0.2 max.	0,05	
Zinc	mg/kg	0.2 max.	0,05	
Chromium	mg/kg	0.2 max.	0,05	
Nickel	mg/kg	0.2 max.	0,05	
Aluminium	mg/kg	0.5 max.	0,05	
Magnesium	mg/kg	0.5 max.	0,05	
Sodium	mg/kg	0.5 max.	0,05	
Potassium	mg/kg	0.5 max.	0,05	
Identity	---	Idem		ISO 22241-2 Ann. J

THE SPECIFICATION MEETS THE REQUIREMENTS OF ISO 22241-1:2006-10-15

SAMPLING AND TESTING ACCORDING TO THE TEST METHODS REFERRED IN ISO 22241-2:2006-10-15.

THESE SPECIFICATIONS WILL BE MODIFIED IF THERE WILL BE UPDATES IN THE STANDARDS.



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## PHYSICAL PROPERTIES:

Parameters	U.M.	Values
Density $\rho(T)$	g/cm <sup>3</sup>	1,105-1,085
Thermal conductivity	W/m·K at 25°C	Approx 0,570
Viscosity	mPa·s at 25°C	Approx. 1,4
Surface tension	mN/m at 20 °C	Min 65

## DELIVERIES AND STORAGE:

**Packaging:** *AdBlue* is supplied in *dedicated* road tankers, IBC (Intermediate Bulk Containers), 208lt drums and 20, 10, 5 lt cans

**Durability:** *AdBlue*, if protected from sun light and dust has:

- in vented tanks a shelf life of 12 months (storage temperature lower than 30° C and average temperature around 20° C)
- in closed container a shelf life of 09 months (storage temperature lower than 30° C and average temperature around 20° C)

**Storage temperature:** *AdBlue* should be stored protected from sun light and dust in sealed and possibly ventilated tanks.

Storage temperature should be in the range of – 11°C and 30 °C

**Storage and handling:** *AdBlue* should be stored protected from sun light and dust in sealed and possibly ventilated tanks.

All storage and handling facility should be dedicated and be made of proper materials as follow:

- alloyed austenitic Cr-Ni-steels or Cr-Ni-Mo-steels according to EN 10088-1 or equivalent
- polymers like PE, PP and polyoxymethylene are suitable at temperatures up to 60°C. sealings may be made of PTFE or EPDM\*

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\*The properties of parts made of polymeric materials depend to a considerable extent on blending and processing during the manufacturing process. Therefore, for any polymeric material the supplier should be requested to submit for their product resistance data towards *AdBlue*, which are tailored for the intended use as well as for the intended operating temperature.



Non alloyed steels, zinc coated steels, copper, and alloys containing copper are not suitable due to their poor resistance towards urea, urea solution, or the ammonia dissolved therein. Any other material not cited above must be tested regarding corrosion resistance and possible influences on the product specification.

*To be sure about storage and handling products use always BlueBasic approved storage and handling installations reported on the Bluebasic catalogue.*

### QUALITY AND TRACEABILITY:

In order to guarantee the quality of *AdBlue* and traceability please follow our instructions reported on the Bluebasic Quality Manual.

- Bulk deliveries should always have quality certificate (Chemical analysis of AdBlue specific lot) and should be properly sealed
- Closed containers should always report lot number on the label and should be properly sealed.

*In case of product manipulation or quality problems please contact our quality department*

### SAFETY:

**Handling:** *AdBlue* is not an hazardous substance but should be handled according to our MSTs. All precautions for handling chemicals should be taken in consideration.

**Storage and transportation:** *AdBlue* is not a dangerous substance for transportation. Owing to its chemical nature, however, it must be transported and stored separately from nitrites. Transportation should be made in insulated tanks or on plastic tank pallets (IBC).

### CONTACT:

**Bluebasic Srl**

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**TECHNICAL ENQUIRY**

### NOTE

THE DATA CONTAINED IN THIS PUBLICATION ARE BASED ON OUR CURRENT KNOWLEDGE AND EXPERIENCE. IN VIEW OF THE MANY FACTORS THAT MAY AFFECT PROCESSING AND APPLICATION OF OUR PRODUCT, THESE DATA DO NOT RELIEVE PROCESSORS FROM CARRYING OUT THEIR OWN INVESTIGATIONS AND TESTS; NEITHER DO THESE DATA IMPLY ANY GUARANTEE OF CERTAIN PROPERTIES, NOR THE SUITABILITY OF THE PRODUCT FOR A SPECIFIC PURPOSE. ANY DESCRIPTIONS, DRAWINGS, PHOTOGRAPHS, DATA, PROPORTIONS, WEIGHTS, ETC. GIVEN HEREIN MAY CHANGE WITHOUT PRIOR INFORMATION AND DO NOT CONSTITUTE THE AGREED CONTRACTUAL QUALITY OF THE PRODUCT. IT IS THE RESPONSIBILITY OF THE RECIPIENT OF OUR PRODUCTS TO ENSURE THAT ANY PROPRIETARY RIGHTS AND EXISTING LAWS AND LEGISLATION ARE OBSERVED.