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AdBlue
Urea
9.58021

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. Our product is 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: 60.06
CAS No.: 57-13-6

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.

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Specifications: Characteristics:

	Limits		Nominal Value	Unit
	Min.	Max.		
Urea content	31,8	33,2	32,5	% (m/m)
Density @ 20°C	1087,0	1093,0	1090	kg/m ³
Refractive Index	1,3814	1,3843	1,3829	
Alkalinity as NH ₃			0,2	% (m/m)
Biuret			0,3	%(m/m)
Aldehydes			5	mg/kg
Insoluble			20	mg/kg
Phosphate (PO ₄)			0,5	mg/kg
Calcium			0,5	mg/kg
Iron			0,5	mg/kg
Copper			0,2	mg/kg
Zinc			0,2	mg/kg
Chromium			0,2	mg/kg
Nickel			0,2	mg/kg
Aluminium			0,5	mg/kg
Magnesium			0,5	mg/kg
Sodium			0,5	mg/kg
Potassium			0,5	mg/kg

The specification meets the requirements of ISO 22241-1:2006-10-15. Sampling and testing according to the test methods in ISO 22241-2:2006-10-15 referred.

Physical properties:

Aspect:	Colourless clear liquid, odourless or slight smell like ammonia
Viscosity (at 25°C):	approx. 1.4 mPa s
Incipient Crystallisation:	-11.5°C

Insulated tank road vehicles and plastic tank pallets (IBC) are used for transportation.

To avoid crystal precipitation or hydrolysis of the product, storage and transportation in the temperature range between -5°C and +25° C are recommended. Prolonged storage at temperatures above 25°C may lead to the decomposition of urea and increase of concentration because of evaporation of water when containers are vented.

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Shelf life of AdBlue® is significantly dependent on the storage temperature as shown in the following table:

Max. constant strong temperature °C	Min. shelf life (months)
≤ 10	36
≤ 25	18
≤ 30	12
≤ 35	6
> 35	---

To prevent decomposition of the AdBlue®, prolonged transporting or storing above 25°C should be avoided.

b) Significant loss of shelf life: check every batch before use.

The main factors taken into account to define the shelf life in the table are the ambient storing temperature and the initial alkalinity of AdBlue®. The difference in evaporation between vented and non-vented storing containers is an additional factor.

AdBlue® stored under normal conditions as stated above and in containments of suitable materials is stable for at least two years at 20°C.

Completely solidified of AdBlue® at temperatures lower than -11°C has an approximately 7 % larger volume than the liquid and, therefore, May cause burst of fully filled containers. Solidified AdBlue®, which has been warmed up carefully at temperatures not exceeding 30°C will not impaired in quality and can be used as soon as the warmed up solution is free from solids.

In order to avoid excessive temperature rise AdBlue® should be protected from sun light.

Highly alloyed steels, Titan, HDPE, PP and Viton are suitable materials in contact with AdBlue®.

The product is corrosive to steel, iron, nickel and nonferrous metals.

Safety:

AdBlue® as well as crystallized residues of AdBlue® is physiologically harmless.

AdBlue® is classified as not dangerous good.

For safety reasons store and ship AdBlue® strictly separated from nitrites, hypochlorites and salts containing nitrates. The Product Safety Information Sheet provides further information on product properties, regulations to be respected, and measures required to be taken for the protection of persons and the environment when handling the product.

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