

With AdBlue® by BASF, we thrive to help our customers reduce emissions and comply with latest standards, contributing to a cleaner environment.

BASF – the automotive expert

BASF is the largest chemical producer in the world, headquartered in Germany. Alongside paint systems and plastics, BASF also offers a wide range of operating materials, including radiator protection, brake fluids, engine and fuel additives, to the automotive sector. These products help drivers with both petrol and diesel engines to achieve greater performance, lower consumption and reduced emissions.

We work closely with the automotive and petroleum industry to continually develop our additives; AdBlue® being just one example where the manufacturing process was borne from the knowledge and experience of teams of experts.

Further information on BASF is available on the Internet at www.basf.com.

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AdBlue® by BASF

according to ISO 22241

The Clean Solution

Note

The data contained in this publication are based on our current knowledge and experience. They do not constitute the agreed contractual quality of the product and, in view of the many factors that may affect processing and application of our products, do not relieve processors from carrying out their own investigations and tests. The agreed contractual quality of the product at the time of transfer of risk is based solely on the data in the specification data sheet. Any descriptions, drawings, photographs, data, proportions, weights, etc. given in this publication may change without prior information. It is the responsibility of the recipient of our product to ensure that any proprietary rights and existing laws and legislation are observed.

® = registered trademark of Verband der Automobilindustrie e.V. (VDA)

 **BASF**
We create chemistry

AdBlue® by BASF

What is AdBlue® ?

AdBlue® is a high purity 32.5 % urea solution which serves as a reducing agent for diesel-engined vehicles. Selective Catalytic Reduction (SCR) technology combined with the AdBlue® significantly reduces soot and nitrogen oxide (NOx) emissions to meet Euro 4, 5 & 6 emission standards.

The VDA (German Automotive Industry Association) owns the AdBlue® brand and manages producers through licences. The value of the AdBlue® brand lies in the high quality assurance provided by the producers.

Why AdBlue® by BASF ?

BASF was involved in the standardization process for **ISO 22241 (the AdBlue® standard)** and has been a member of ISO 22241 committee since the beginning, providing a full understanding of all required measures and ensuring strict implementation in production of AdBlue® by BASF. BASF is a **worldwide licensee** and **extraordinary member** of the VDA for the AdBlue® brand.

BASF ensures purity of AdBlue® with highly integrated production process, strict quality control and extensive expertise.

- About BASF's license and membership for the AdBlue® brand:
<https://www.vda.de/en/association/members>

AdBlue® by BASF - Applications



Transport companies



Public transportation



Mining/Construction



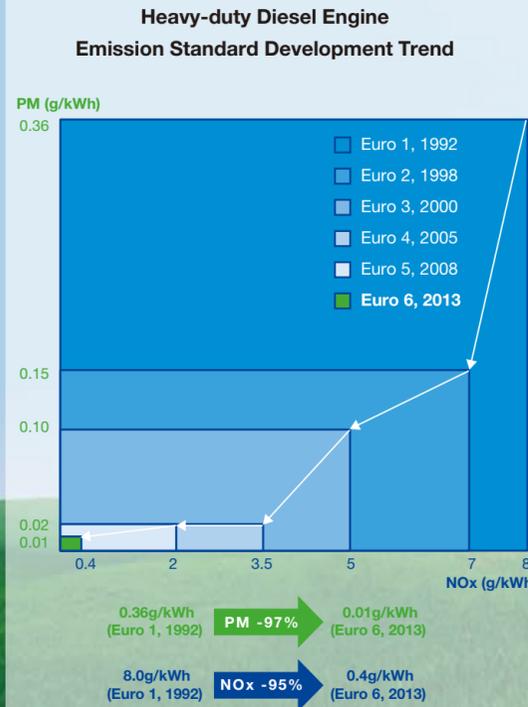
Agriculture



Marine



Passenger vehicles

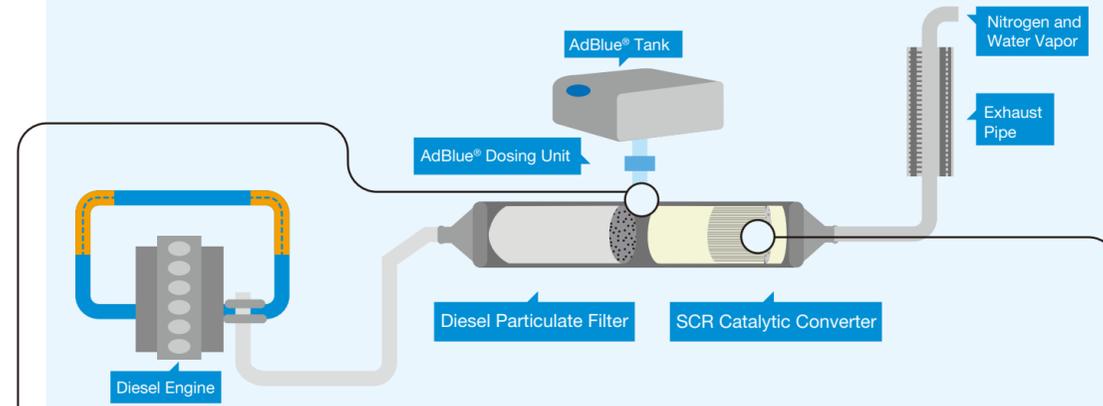


AdBlue® by BASF at work in SCR assembly

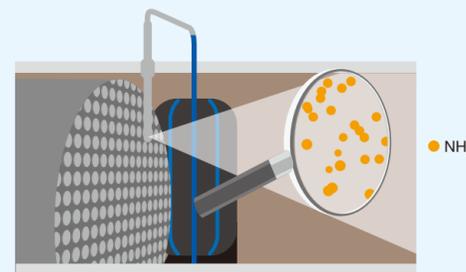
In combination with the SCR-technology, AdBlue® by BASF optimizes sooty particle and NOx emissions as well as fuel consumption. BASF has patented SCR technologies to meet the latest regulations for NOx emissions.

Within the SCR system, AdBlue® by BASF is directly injected into the exhaust gas where it serves as a reducing agent. Thereby, ammonia is released that subsequently reacts with the NOx and transforms them into elementary nitrogen and water, reducing NOx emissions by 85% and above.

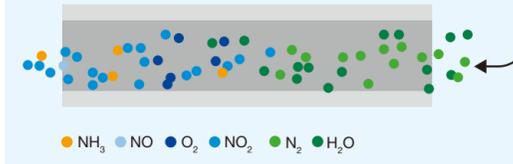
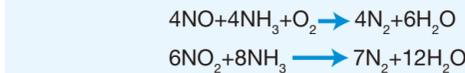
How it works



AdBlue® by BASF injected into exhaust gas



Reaction in SCR catalytic converter



Importance of choosing high quality AdBlue®

High quality AdBlue® ensures emission standards are met and provides economic benefits.

- ✓ Avoidance of costly vehicle replacement
- ✓ Lower maintenance cost
- ✓ Ensured SCR system efficiency
- ✓ Guaranteed life of SCR system
- ✓ Enhanced fuel economy



If the quality of AdBlue® is not maintained, NOx might increase and the SCR system might be endangered.

- ✗ Reduced life of SCR system
- ✗ Increased pollutant level
- ✗ Clogged catalytic converter
- ✗ Clogged exhaust
- ✗ Clogged injector



AdBlue® by BASF - Key benefits

- Sound SCR system protection**
Tested purity of AdBlue® by BASF guarantees that the SCR system is not harmed
- Reduced fuel consumption**
AdBlue® by BASF combined with SCR technology reduces the fuel consumption by 5% without affecting the engine output
- Meeting latest emission standards**
AdBlue® by BASF meets all Euro 4, 5 and 6 standards
- Reduced emissions**
The amount of NOx in the exhaust gas can be reduced by 85 - 95%
- Long shelf life**
Provided that the recommended storage temperature is maintained, AdBlue® by BASF ensures a shelf life of at least 12 months
- Environmental friendliness**
AdBlue® by BASF is easily decomposed by microbes and poses very low hazard to water and soil

AdBlue® by BASF - Packaging



AdBlue® by BASF - Specification

Parameter	Requirements acc. To ISO 22241	Test Method
Urea Content	31.8 - 33.2%	ISO 22241-2 Ann. C
Density at 20°C	1.087 - 1.093 g/cm³	DIN EN ISO 12185
Refracting Index at 20°C	1.3814 - 1.3843	ISO 22241-2 Ann. C
Alkalinity as NH ₃	≤ 0.2%	ISO 22241-2 Ann. D
Biuret	≤ 0.3%	ISO 22241-2 Ann. E
Aldehyde	≤ 5mg/kg	ISO 22241-2 Ann. F
Insolubles	≤ 20mg/kg	ISO 22241-2 Ann. G
Phosphate (PO ₄)	≤ 0.5mg/kg	ISO 22241-2 Ann. H
Calcium	≤ 0.5mg/kg	ISO 22241-2 Ann. I
Iron	≤ 0.5mg/kg	ISO 22241-2 Ann. I
Copper	≤ 0.2mg/kg	ISO 22241-2 Ann. I
Zinc	≤ 0.2mg/kg	ISO 22241-2 Ann. I
Chromium	≤ 0.2mg/kg	ISO 22241-2 Ann. I
Nickel	≤ 0.2mg/kg	ISO 22241-2 Ann. I
Aluminium	≤ 0.5mg/kg	ISO 22241-2 Ann. I
Magnesium	≤ 0.5mg/kg	ISO 22241-2 Ann. I
Sodium	≤ 0.5mg/kg	ISO 22241-2 Ann. I
Potassium	≤ 0.5mg/kg	ISO 22241-2 Ann. I