TOTAL

Diesel

AdBlue®

AdBlue® is a registered trademark of the German Association of the Automotive Industry (VDA).

Passenger cars, follow the guide!

DISCOVER THE ADBLUE® SOLUTION

AdBlue®

02

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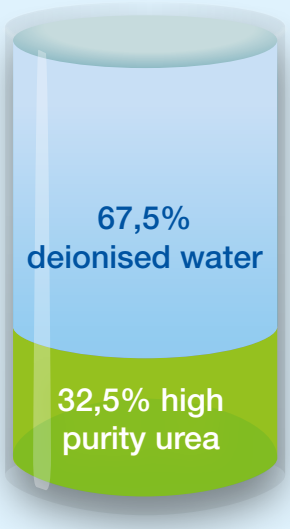
What is AdBlue®?



Biodegradable, soluble in water and colourless, AdBlue® crystallises at -11°C and decomposes into ammonia from 80°C.

AdBlue® is classified as a non-hazardous product.

AdBlue® is used by Diesel vehicles equipped with SCR technology.

AdBlue® must be stored indoor, protected from any direct light, and properly sealed.

WHY WRITE ADBLUE® WITH THE ® SYMBOLE?

Because AdBlue® is a registered trademark of the German Association of the Automotive Industry (VDA), which ensures that the product quality requirements are respected.

FOCUS ON

SCR: SELECTIVE CATALYTIC REDUCTION

It is the name of the exhaust gases treatment technology which converts (inside a catalyst) the nitrogen oxides (**NO_x**) into water steam and nitrogen with the use of AdBlue®.

UREA?

The urea used for AdBlue® is a high purity synthetic product usually produced from natural gas, and used for chemical fertilizers or plastics.

What is the use of AdBlue®?

AdBlue® is used to reduce NO_x emissions

- AdBlue® is used by Diesel vehicles equipped with SCR technology.
- AdBlue® enables vehicles to satisfy the new standards of car manufacturers who have improved their exhaust systems to comply with the EURO 6 norm.
- AdBlue® is stored in an auxiliary tank separated from the Diesel tank.

FOCUS ON

THE EURO 6 NORM

In force since September 2014, it is a European norm aiming at reducing passenger cars polluting emissions.

As of this date, every new Diesel vehicle must be equipped with a NO_x reduction system.

SCR is one of the systems elected by car manufacturers to reduce NO_x.

FIRST HEAVY-DUTY TRUCKS, THEN PASSENGER CARS!

AdBlue® is also used by heavy-duty trucks.

Every new heavy-duty truck produced from October 2006 is equipped with the SCR technology, and also uses AdBlue®.

For example, in 2013, the French market of heavy-duty vehicles had consumed 270,000 m^3 of AdBlue®. (Source: Integer)

How does **it work?**

WHAT HAPPENS INSIDE THE ENGINE

Inside Diesel engines, **NO_x** (nitrogen oxides) are produced by the reaction of oxygen and nitrogen at the high temperatures caused by combustion.

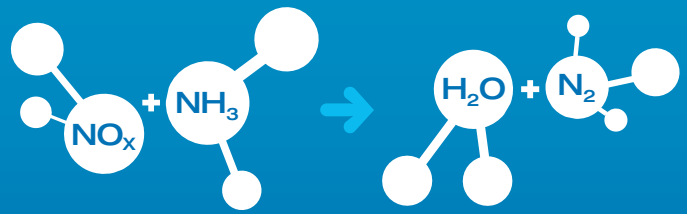
WHAT HAPPENS INSIDE THE EXHAUST SYSTEM

AdBlue® is injected into the exhaust pipe, located before the SCR catalyst and after the engine.
When heated inside the exhaust pipe, AdBlue® decomposes into ammonia (**NH_3**) and into carbon dioxide (**CO_2**).

WHAT HAPPENS INSIDE THE SCR

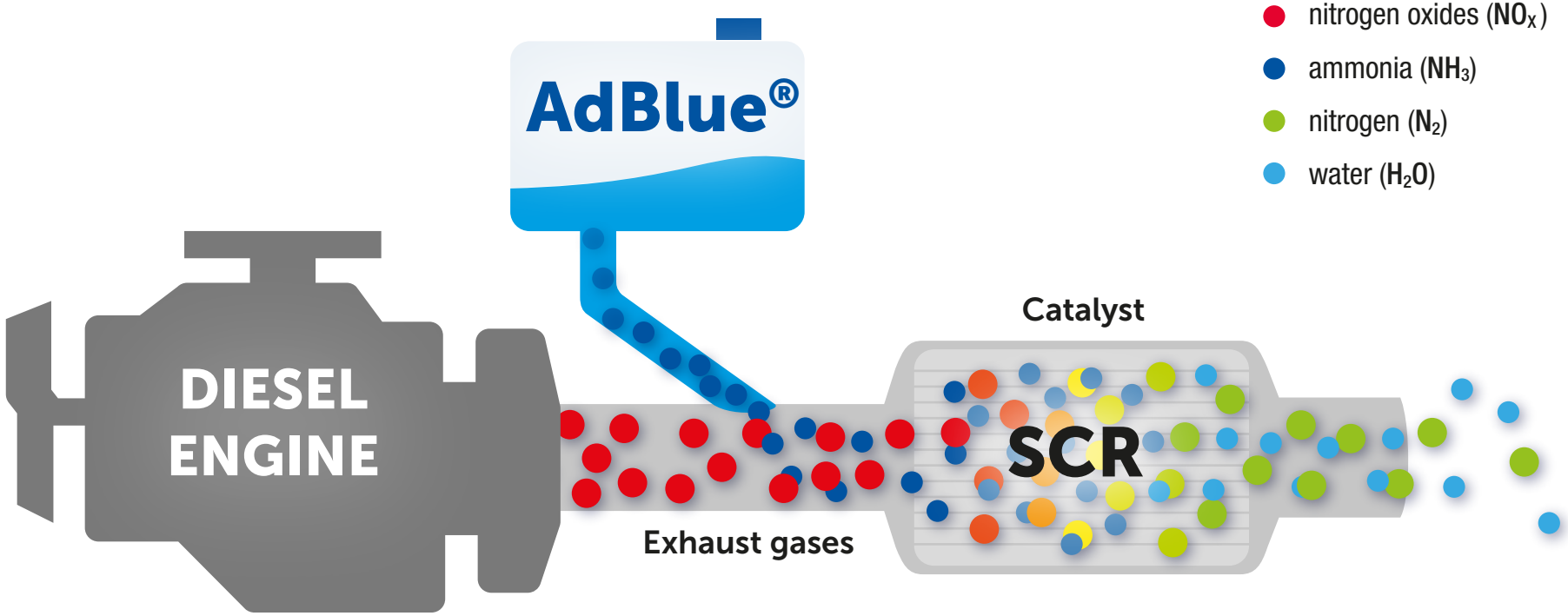
When **NO_x** react with the ammonia inside the catalyst, the harmful **NO_x** molecules are transformed into harmless nitrogen (**N_2**) and into water (**H_2O**).

what about the chemistry?



CAUTION This chemical reaction must take place in this precise order. AdBlue® and Diesel must not be mixed beforehand!

How does it work?



AdBlue® at TOTAL

CONTACT OUR LOCAL AFFILIATE TO DISCOVER THE AVAILABLE PACKAGINGS IN YOUR COUNTRY

Example of how Ad Blue is distributed in most of European countries:

HEAVY-DUTY TRUCKS

3 distribution channels for AdBlue®

COMMERCIAL SALES	RETAIL (TOTAL service stations, TOTAL Access and AS24)	LUBRICANTS
SEVERAL ADBLUE® SELLING FORMATS		
• **Bulk** • **IBC** (1,000 L) • **Drums** (208 L)	• **Pumps** • **Canisters** (10 L)	• **Bulk** • **IBC** (1,000 L) • **Drums** (208 L) • **Canisters** (10 L)

PASSENGER CARS

2 distribution channels for AdBlue®

RETAIL (TOTAL service stations, TOTAL Access)	LUBRICANTS
SEVERAL ADBLUE® SELLING FORMATS	
• **Canisters** (10 L and 5 L)	• **IBC** (1,000 L) • **Drums** (208 L) • **Canisters** (1.5 L, 5 L and 10 L)

Where to find the AdBlue® tank filler neck **on a passenger car?**

- The location of the tank filler neck depends on the brand and model of the vehicle.
- This information can be found inside the vehicle's owner manual.

IN ALL CASES, THERE ARE 3 CONFIGURATIONS:

Under the bonnet at the front of the vehicle

Inside the boot of the vehicle

Next to the Diesel **filler neck**

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THE ADBLUE® TANK CAPACITY

The tank volume depends on the vehicle, it usually varies between 8 litres and 25 litres. To obtain this information, contact the dealership, or see the vehicle's owner manual.

What is the AdBlue® offer for light vehicles within TOTAL Lubricants?

ADBLUE® IS AVAILABLE UNDER SEVERAL FORMATS:

- The **1.5 L** AdBlue® canister is the ideal format for regular top-ups. With its special nozzle, the canister makes filling safe and easy, offering smooth pouring without splashing, wherever the tank may be. Simply press the button on the container to pour the liquid.

- The **5 L** AdBlue® canister is the ideal format for periodic filling and to ensure sufficient autonomy in all circumstances. When the AdBlue® dashboard warning light comes on to indicate that the product level is too low, it takes at least 4 litres to fill the tank enough to turn it off.

  The 5 litre canister distributed by TOTAL is therefore perfectly adapted to fill up quickly at those times.

How to know if the vehicle needs AdBlue®?

THE CUSTOMER KNOWS HIS VEHICLE NEEDS ADBLUE®:

IF

- He was informed during the purchase of his vehicle at the dealership.
- He can notice the AdBlue® filler neck next to the Diesel tank.

WHEN

The AdBlue® warning light appears on the dashboard.

THE ADBLUE® WARNING LIGHT ON THE DASHBOARD:

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- The look of the AdBlue® warning light depends on the model of the vehicle.
- When it appears, 2,400 km of driving capacity are remaining (this alert level is required by the norm and is common to all vehicles).
- As with the fuel consumption, the AdBlue® consumption varies, and depends on several factors: type of vehicle (camper, SUV, car, etc.), type of engine, driving conditions (mountain, with a trailer, caravan, etc.), driving style. For passenger cars, the consumption of AdBlue® is around 1.5 L every 100 L of diesel.
- **Caution, the warning light does not turn off immediately after the refill, wait for a few minutes for the light to disappear.**

NO ADBLUE® GAUGE = CAUTION!

- Depending on the vehicle and the driving style, when the AdBlue® warning light appears, there is only a certain number of engine starts left.
- **After several warnings, the car will not start, the dealership must be contacted, and the AdBlue® tank must be refilled.**

Use recommendations

Storage

- Store AdBlue® away from the light.
- Beyond 30°C, AdBlue® starts decomposing.
- AdBlue® freezes at -11°C. The automatic warming system of the vehicle allows to make it become liquid again within 20 minutes after engine start. During this time, the vehicle can be operated normally.
- If AdBlue® is stored outside the vehicle's tank, gently thaw it, it can then be used normally again.
- Keep the AdBlue® equipment clean, away from dust and dirt.
- AdBlue® shelf life is around 12 months. Please note that the product life depends on its storage conditions, and especially on the temperature in the storage location.

Handling

- Only use AdBlue® delivered into dedicated and sealed AdBlue® packaging.
- AdBlue® is classified as non-hazardous: in case of contact with skin or clothes, the recommendation is to rinse with water.
- AdBlue® can have a corrosive action on certain metals: in case of spilling, rinse with water.
- Do not use equipment (canisters, etc.) used for other liquids to refill or store AdBlue®.
- Close tightly the AdBlue® tank and canister after refill.

CAUTION

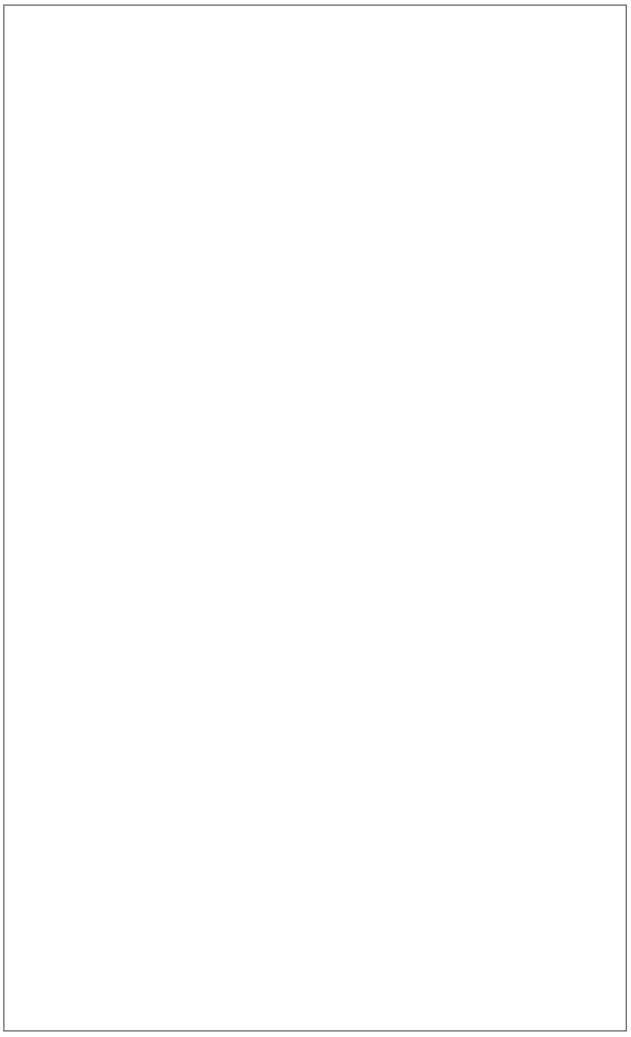
The risks of mixing AdBlue® + Diesel:

- Never mix AdBlue® with water or any other substances, **in particular with Diesel**.
- Mixing AdBlue® and Diesel is very risky because it can be very harmful for the SCR system, and generate high repair costs.

How to assist **your customer?**

FLASH CODE

LEAFLET



TOTAL MARKETING FRANCE, S.A.S. au capital de 390.553.839 euros – 531 680 445 RCS Nanterre, siège social 562 Avenue du Parc de l'Ile 92000 Nanterre –
Photos: Bernard Blaise, Galip Durgun Gunce / Photosociale – Conception GOLDEN Design