

STAMI UREA



LAUNCH<sup>TM</sup> SERIES

## AdBlue<sup>®</sup> Technologies

The most economical and environmentally friendly way to produce premium quality AdBlue<sup>®</sup>

Stamicarbon B.V.  
Mercator 3 - 6135 KW Sittard,  
The Netherlands.  
P.O. Box 53 - 6160 AB Geleen,  
The Netherlands.

Tel. +31 46 4237000  
Fax. +31 46 4237001

communication@stamicarbon.com  
www.stamicarbon.com

The innovation & license company  
of Maire Tecnimont.



# AdBlue® Technologies

AdBlue®, known as Diesel Exhaust Fluid (DEF) in the USA, is an aqueous urea solution made with 32.5% high-purity urea and 67.5% deionized water. It has been registered as AdBlue® in Europe, but is also known as ARLA32 or AUS32. The purpose of AdBlue® is to reduce NOx emissions from diesel vehicles. The AdBlue® specification given by ISO 22241 prescribes the composition limits, the analyses methods, the storage, and the transport of AdBlue®. To conform to the specifications of ISO 22241, strict quality management is needed to control the urea and AdBlue® process, storage and transport.

Currently the most common method to produce AdBlue® is by diluting urea prills in deionized water. Unfortunately this method comes with disadvantages, such as:

- AdBlue® quality might not conform to ISO 22241 due to high biuret content in solid urea
- High production costs due to both finishing and blending steps
- High emissions from urea plant due to finishing step

**Stamicarbon offers two alternative solutions:**

**1) Producing AdBlue® by diluting dry-flashed urea powder in deionized water**  
 This method is a unique Stamicarbon solution, and comes with the following advantages:

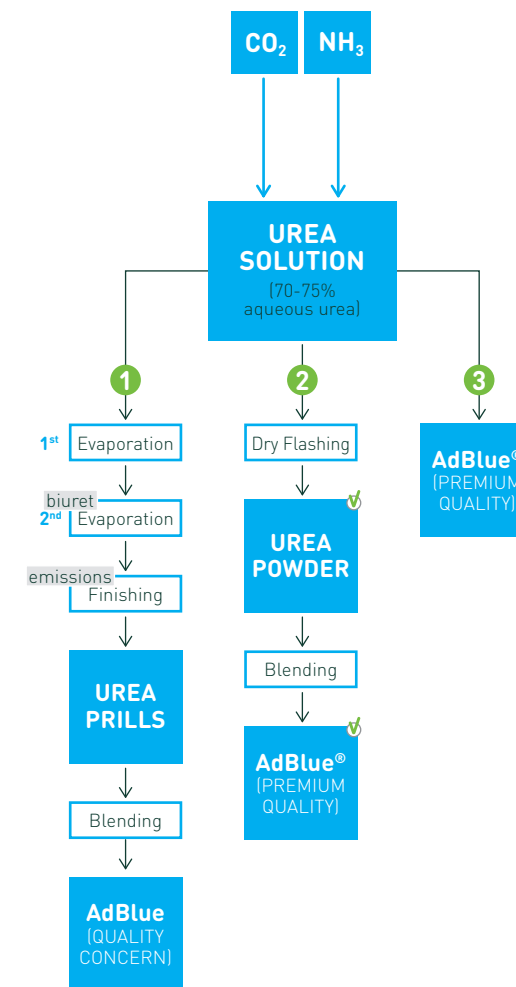
- Guaranteed premium AdBlue® quality made from urea powder that is zero formaldehyde and low biuret content
- Low production costs for urea powder due to the elimination of the finishing step
- Free flowing urea powder ready to be dissolved
- Lower emissions and energy-saving

**2) Producing AdBlue® directly from an aqueous urea solution from any urea plant**  
 This method is exceedingly beneficial due to the following:

- Guaranteed high product quality [AdBlue® conforms to the standards of ISO 22241]
- Low production costs due to the elimination of the finishing and -blending step
- Supplies the opportunity for a prilling tower revamp
- Emissions are lowered when AdBlue® serves as an add-on to existing urea plant

**Currently there are three different methods to produce AdBlue®**

- 1 Diluting urea prills in deionized water (general approach)
- 2 Diluting dry-flashed urea powder in deionized water (a Stamicarbon solution)
- 3 Directly from an aqueous urea solution (a Stamicarbon solution)



**Stamicarbon's contribution**

Stamicarbon is the world's leading name in the design and development of urea plants and licensing of technologies for the fertilizer and plant nutrition industry. Up until 2014, Stamicarbon has designed more than 50% of the world's urea plants. Stamicarbon has licensed more than 1.5 million tonnes per year of AdBlue® capacity worldwide to produce AdBlue® directly from urea solution.

As the expert in urea technology, Stamicarbon diversifies in AdBlue® technology and actively engages in standardized and tailor-made designs for both our LAUNCH-series, all technologies for creating new plants, as well as for our EVOLVE series, for upgrading existing plants.

**For both new and existing urea plants Stamicarbon offers technologies for producing high quality AdBlue® conforming to ISO 22241.**

**These technologies include:**

- Direct premium quality AdBlue® production from any type of urea plant
- Concentrated urea solution for producers at distance of AdBlue® markets
- Intermediate AdBlue® production: Stamicarbon urea powder

**AdBlue® related services include:**

- AdBlue® certificate consultancy service
- Providing AdBlue® quality management from AdBlue® process design to AdBlue® production, storage, and transport in emerging DEF markets
- Operator training for AdBlue® plant operation

**Stamicarbon offers:**

- Guaranteed premium AdBlue® production that not only meets, but outperforms the ISO standard
- The most economical route to premium AdBlue® production
- The most environmentally-friendly way for AdBlue® production
- Complete package with all-around consultancy services that guide through the AdBlue® certificate obtainment
- Strong references in emerging AdBlue® markets

**• Reference list**

	<b>Company</b>	<b>Capacity</b>	<b>Country</b>
<b>Grassroots</b>	OCI	900mtpd	USA
	Dakota	770mtpd	USA
	Koch	846mtpd	USA
	Agrium Borger	1314mtpd	Canada
<b>Revamps</b>	Petrobras	900mtpd	Brazil
	Dulso Sala	300mtpd	Slovakia

AdBlue® is a worldwide registered trademark of the Verband der Automobilindustrie e.V (VDA).  
Stamicarbon is an official AdBlue® licensing partner of the VDA.