

How to read your AdBlue® Certificate of Analysis

Every Liquidia batch is lab-tested to ISO 22241 before release. The certificate lists about 20 results, but four tell you most of what you need to know. They are numbered 1 to 4 and highlighted on the certificate on page 2.

1

Urea content

Limit: 31.8 – 33.2 % (target 32.5 %)

Example batch: 32.3 % ✓

The strength of the solution. The SCR system doses AdBlue® as if it is 32.5 % urea. Too weak and NOx is not fully treated; too strong and crystals can form in the injector.

2

Refractive index at 20 °C

Limit: 1.3814 – 1.3843

Example batch: 1.3829 ✓

A second measure of strength, and the one you can check yourself on site with a hand refractometer. If your own reading matches the certificate, the product has not been watered down.

3

Biuret

Limit: 0.3 % max

Example batch: 0.28 % ✓

A by-product that forms when urea breaks down, from poor raw material or from heat during storage. Biuret leaves hard deposits in the injector and exhaust system.

4

Sodium

Limit: 0.5 mg/kg max

Example batch: 0.3 mg/kg ✓

The most important contamination check. Sodium comes from dust, dirt and impurities in the air and water. It gets into tanks through open lids, unfiltered vents, rinsing with tap water and dirty transfer gear. Sodium permanently poisons the SCR catalyst, and the damage builds up over time. Keep tanks sealed, use closed pumps and nozzles, and never rinse with tap water.

Also check

- **The batch number** matches the label on your drum or IBC.
- **Judge results against the "Limits" columns.** The "Acceptance Range" columns are the lab's allowance for test repeatability (ISO 22241-2 Annex B), used when results are disputed.
- **Identity** reads "Identical to Ref", confirming the product is urea solution and nothing else.
- A certificate shows the batch passed when it left us. Heat, age and contamination on site can change it later. If in doubt, ask for our free AdBlue® check.

Example certificate with the four checks marked



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CERTIFICATE OF ANALYSIS

Report Number: ACS2438325 SAMPLE
Date: Liquidia
Client: Liquidia
Client Address:
Client Contact:

Product Name / Batch Number:
Purchase Order Number:
Date of Sample Receipt:

Parameter	Unit	Test Method	Results	Specifications of ISO22241-2:2019			
				Limits		Acceptance Range ¹	
				Min	Max	Min	Max
1 Urea	% w/w	ISO 22241-2 Annex C	32.3	31.8	33.2	30.8	34.2
Density @ 20°C	g/cm³	ISO 3675	1.0905	1.087	1.0930	1.0864	1.0935
2 RI @ 20°C	-	ISO 22241-2 Annex C	1.3829	1.3814	1.3843	1.3804	1.3853
3 Alkalinity as NH ₃	% w/w	ISO 22241-2 Annex D	< 0.2	-	0.2	-	0.24
Biuret	% w/w	ISO 22241-2 Annex E	0.28	-	0.3	-	0.34
Aldehyde	mg/kg	ISO 22241-2 Annex F	< 5	-	5	-	7.4
Insolubles	mg/kg	ISO 22241-2 Annex G	< 20	-	20	-	27.6
Phosphate (PO ₄)	mg/kg	ISO 22241-2 Annex H	< 0.5	-	0.5	-	0.53
Calcium	mg/kg	ISO 22241-2 Annex I	< 0.1	-	0.5	-	0.55
Iron	mg/kg	ISO 22241-2 Annex I	< 0.1	-	0.5	-	0.65
Copper	mg/kg	ISO 22241-2 Annex I	< 0.1	-	0.2	-	0.24
Zinc	mg/kg	ISO 22241-2 Annex I	< 0.1	-	0.2	-	0.26
Chromium	mg/kg	ISO 22241-2 Annex I	< 0.1	-	0.2	-	0.26
Nickel	mg/kg	ISO 22241-2 Annex I	< 0.1	-	0.2	-	0.26
Aluminium	mg/kg	ISO 22241-2 Annex I	< 0.1	-	0.5	-	0.65
4 Magnesium	mg/kg	ISO 22241-2 Annex I	< 0.1	-	0.5	-	0.65
Sodium	mg/kg	ISO 22241-2 Annex I	0.3	-	0.5	-	0.75
Potassium	mg/kg	ISO 22241-2 Annex I	< 0.1	-	0.5	-	0.75
Identity	-	ISO 22241-2 Annex J	Identical to Ref	Identical to Ref		Identical to Ref	

¹Acceptance Range – limit adjusted for reproducibility as per Annex B

Analyst: _____

Title: Analyst

Signature: 

Date: SAMPLE

ACS-QD-93.A

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Sample copy of a certificate from ACS Laboratories (Australia), reproduced in full with the four checks highlighted. Watermarked sample only: not a certificate for your batch.