

Environmental Footprint Declaration

Aurubis Lead



This document presents an environmental footprint declaration based on the results of a life cycle assessment (LCA) of lead, developed in accordance with ISO 14040 and ISO 14044 standards and the principles of ISO 14025. No applicable Product Category Rules (PCR) were available at the time of publication.

1. General information

Product name	Lead
Declared unit	1 metric ton of lead, at least 99.985 % (bars, ingots)
Manufacturer	Aurubis
Production site(s)	Aurubis plants in Beerse, Belgium and Hamburg, Germany
LCA	Aurubis supported by Sphera
Date of publication	19/10/2026
Time coverage	Reference calendar year 2025
Independent verifier	TÜV NORD CERT Prüf- und Umweltgutachtergesellschaft mbH
Review type	Critical review per ISO 14044 (Clause 6)

2. Methodology and scope

Applied standards/guidelines: The study was conducted in accordance with the ISO 14040 (ISO 14040:2021 Environmental management — Life cycle assessment — Principles and framework) and ISO 14044 (ISO 14044:2021 Environmental management — Life cycle assessment — Requirements and guidelines) LCA standards and the Environmental Footprint impact assessment method (3.1). The study is consistent with the methodology adopted by the International Lead Association¹.

Functional unit: 1 metric ton of lead at least 99.985 % (bars, ingots) at plant gate.

System boundaries: Cradle-to-gate life cycle inventory from the extraction of raw materials to the production of refined lead, based on allocated profile of solder and lead bullion from copper production. Excludes packaging, downstream use, and end-of-life.

Allocation procedures: Economic allocation was applied in the life cycle inventory of lead to fairly account for the wide range of co-products.

3. Product

Product description: Aurubis refined lead is offered in bars or ingots with a lead content of at least 99.985 % Pb.

Technical properties/applications: Aurubis lead meets European Norm EN 12659 specifications and is also accepted as a registered brand worldwide under the lead contract of the London Metal Exchange (LME). Lead is a soft, malleable and ductile metal valued for its corrosion resistance. Today, its primary applications are in power transmission and energy storage, such as underwater power and communication cables. Lead can be found in (electric) vehicle batteries, as well as in batteries for emergency power systems. It is also important for the chemical industry, roofing sheets, and radiation shielding as well as an alloying element in other metals.

Expected service life: 50+ years (dependent on downstream application, e.g., in electronics, renewable energy systems, or industrial)

4. Environmental performance — impact results (per 1 metric ton lead)

Impact category	Unit	Result
Climate change	kg CO ₂ eq	311
Ozone depletion	kg CFC-11 eq	0.000000001
Human toxicity, cancer effects ¹	CTUh	0.0000001
Human toxicity, non-cancer effects ¹	CTUh	0.000006
Particulate matter	Disease incidences	0.00001
Ionizing radiation	kBq U235 eq	46.40
Photochemical ozone formation	kg NMVOC eq	0.82
Acidification	mol H+ eq	1.13
Eutrophication (terrestrial)	mol N eq	3.47
Eutrophication (freshwater)	kg P eq	0.000
Eutrophication (marine)	kg N eq	0.32
Ecotoxicity (freshwater) ¹	CTUe	812
Land use ¹	Pt	327
Water use	m ³ world eq	140
Resource use, fossils	MJ	4934
Resource use, minerals and metals ¹	kg Sb eq	0.002

¹ Impacts are not sufficiently robust and accurate to be used for metals.

5. Environmental performance improvement and comparison with global average

The following graphs show the environmental performance in 2025 for lead production.

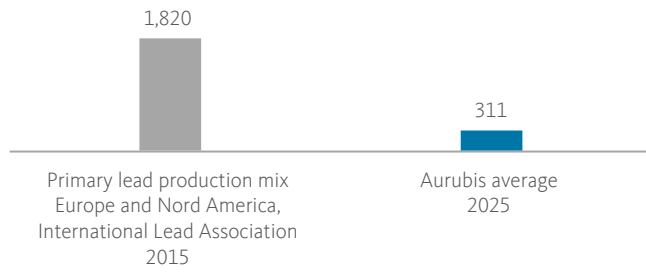
The environmental performance of the lead was assessed for the first time in ref. year 2025. As no previous life cycle assessment data is available, a year-on-year comparison cannot be provided. The results represent the baseline environmental footprint against which future improvements will be measured and reported in subsequent updates.

They also compare the carbon footprint of Aurubis lead with the primary lead production mix in Europe and North America published by the International Lead Association.

¹ ila-lead.org/wp-content/uploads/2026/03/ILA-Lead-Metal-Carbon-Footprint-Guidance.pdf

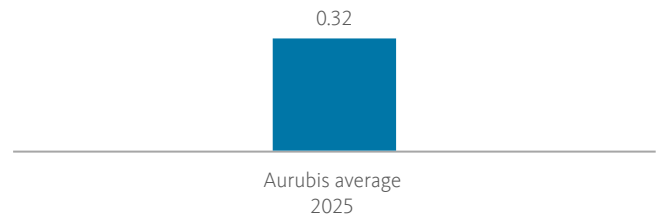
Carbon footprint

in kg CO₂ eq/kg Ag



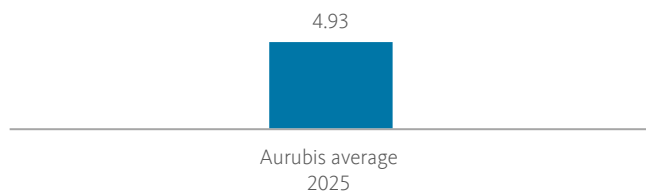
Eutrophication, marine

in kg N eq/kg Ag



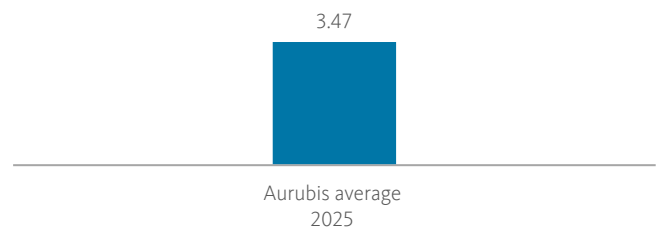
Resource use, fossils

in GJ/kg Ag



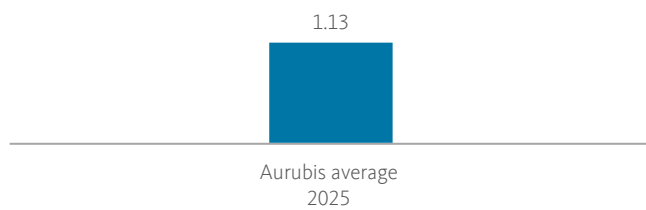
Eutrophication, terrestrial

in mole N eq/kg Ag



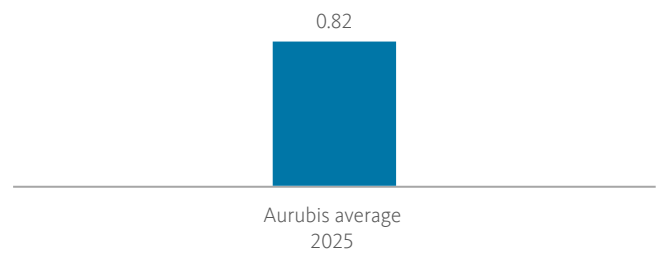
Acidification

in mole H⁺ eq/kg Ag



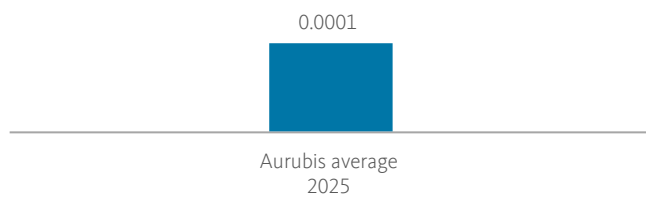
Summer smog

in kg NMVOC eq/kg Ag



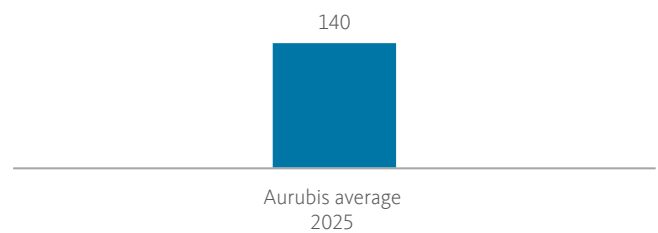
Eutrophication, freshwater

in kg P eq/kg Ag



Water use

m³ world eq/kg Ag



6. Additional environmental information

Recycled content: The recycled content of the Aurubis product lead for calendar year 2025 was 94 %. The recycled content was verified by TÜV Nord Cert based on ISO 14021.

Environmental labels/Certifications: Aurubis Beerse and Aurubis Hamburg, the lead producing sites, are certified to ISO 14001 and ISO 50001.

7. Interpretation and conclusions

The environmental impact of Aurubis lead is primarily driven by solder and lead bullion. Direct emissions during the lead refining process and purchased electricity contribute as well.

Aurubis lead has a significantly lower carbon footprint compared to the the primary lead production mix in Europe and North America published by the International Lead Association.

8. Verification

Verification type	Critical review in accordance with ISO 14040 (2021) and ISO 14044 (2021)
Verifier name & organization	Michael Sommer Dennis Nowroth TÜV NORD CERT Prüf- und Umweltgutachtergesellschaft mbH Am TÜV 1, 30519 Hannover, Germany Phone +49 (0) 511 986-1172 Email micsommer@tuev-nord.de; dnowroth@tuev-nord.de
Date of verification	1/10/2026

The review confirmed that the LCA complies with the applicable standards and is scientifically and technically valid.

9. Disclaimer

This declaration has not been issued under a program operator and has not been verified in accordance with a PCR because none is available. The information is provided for transparency and B2B communication purposes.

10. Annexes

A. LCA Report

B. Benchmarking information: ila-lead.org/wp-content/uploads/2025/05/EUNA-Lead-LCA-Report_Primary-Route.pdf

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