FACTSHEET

Environmental Profile of Aurubis Silver and Aurubis Gold

Tomorrow Metals

The contribution of silver and gold to sustainable development

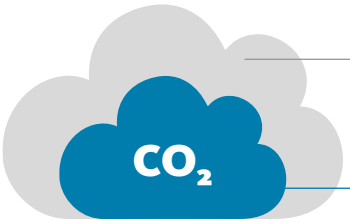
It's not just about jewelry or investments — silver and gold are used in a range of technical applications, especially for electronics such as smartphones, motherboards and connectors. Precious metals like silver and gold are also essential for green technologies including solar panels, rapid charging stations, and some types of batteries. These applications make use of the unique properties of silver and gold, most importantly their high electrical and thermal conductivity, and their corrosion resistance.

The environmental footprint of silver and gold from Aurubis

As the EU places more and more emphasis on green technologies needed to meet its climate targets, it is increasingly important to understand the life cycles of the underlying products. As a sustainably oriented multimetal company, Aurubis takes responsibility for the global challenges of climate change, environmental protection, and resource conservation. Improving the environmental performance of products, along with enhancing sustainability throughout the entire supply chain, is of great importance for Aurubis. In 2021 we introduced our label 'Tomorrow Metals' that encompasses the many measures we are taking to enhance our sustainability performance. Aurubis is at the forefront of industries committed to reducing the environmental impact of its operations: We have set the objective of achieving carbon-neutral production well before 2050. And the results of our life cycle assessment confirm that our efforts are successful: The carbon footprints of our silver and gold are both more than 50 % below the global average.[1,3] Our recycling and the efficiency of metal recovery have an important role in the results of our life cycle assessment. The recycled content of silver and gold from the Aurubis Group for calendar year 2023 was 52 % for silver and 23 % for gold.

Carbon footprint of Aurubis Silver

in kg CO_2 equivalents per kg of silver

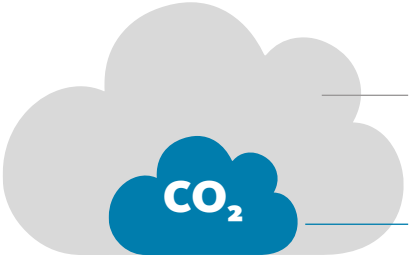


448
Global average[1]

200
Aurubis Silver[2]
(data reference 2023)

Carbon footprint of Aurubis Gold

in kg CO_2 equivalents per kg of gold



36,400
Global average[3]

15,500
Aurubis Gold[2]
(data reference 2023)

Life cycle assessment for Aurubis Silver and Aurubis Gold

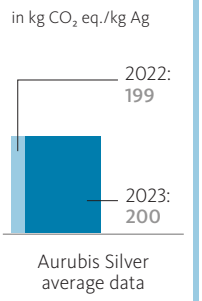
Responding to requests from end-users, along with our own sustainability goals, Aurubis conducted a life cycle assessment (LCA) of our products silver and gold. In this holistic approach, we considered all steps involved in the production of these precious metals, starting from the upstream processes to produce the raw materials, such as anode slime from copper production, to the manufacturing of the pure metals. The assessment includes impacts from all activities related to raw materials, direct emissions, transport, energy consumption, and auxiliary materials. The study was conducted in compliance with the ISO standards 14040 and 14044 for life cycle assessment.[4]

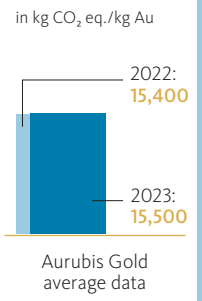
[1] Ecoinvent, 2021 database.
[2] Aurubis, supported by Sphera, Report: Life Cycle Assessment of Silver and Gold, Sept. 2024.
[3] World Gold Council, Gold and climate change: Current and future impacts, Oct. 2019.
[4] ISO 14040:2021 Environmental management — Life cycle assessment — Principles and framework.
ISO 14044:2021 Environmental management — Life cycle assessment — Requirements and guidelines.

The results

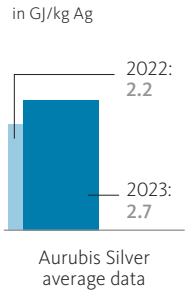
The key environmental aspects were assessed with the Environmental Footprint impact assessment method (3.0) along 16 impact categories. The main impact categories reported in this factsheet were selected because they represent a broad range of environmental impacts. Results for all 16 indicators are available upon request. However, it is important to note that 'abiotic depletion potential' and 'toxicity' are not sufficiently robust and accurate to be used for metals.

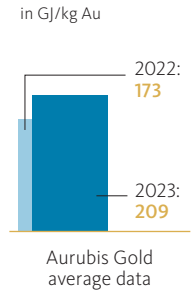
Carbon footprint (climate change), EF 3.0



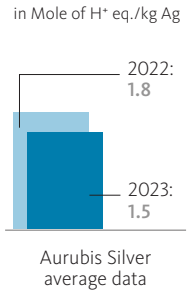


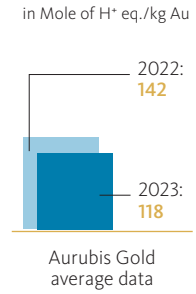
Resource use, fossils EF 3.0



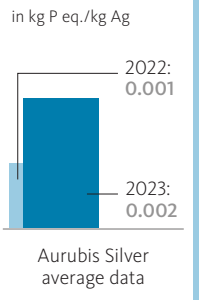


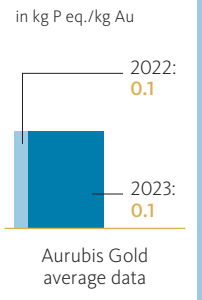
Acidification EF 3.0



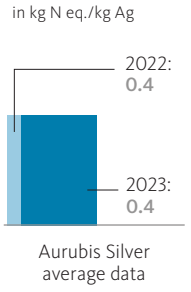


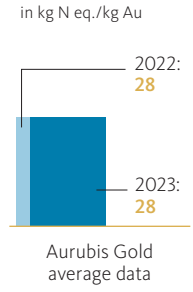
Eutrophication, freshwater EF 3.0



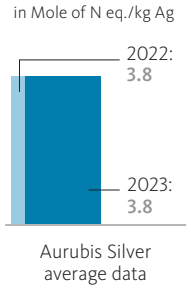


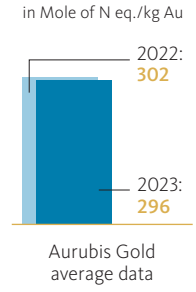
Eutrophication, marine EF 3.0



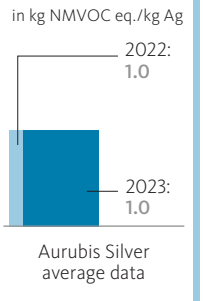


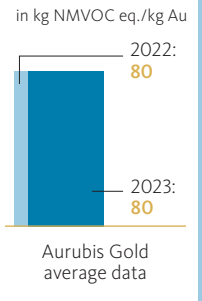
Eutrophication, terrestrial EF 3.0



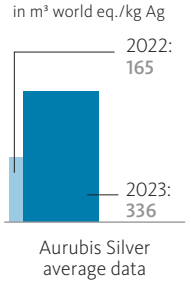


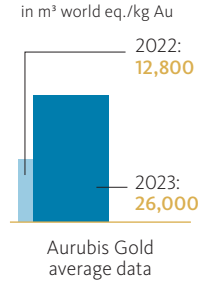
Summer smog (photochemical ozone formation) EF 3.0





Water use EF 3.0



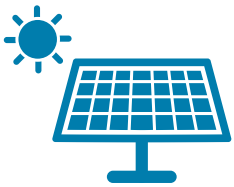


How we got there

In the LCA, our goal was to evaluate the environmental profile of Aurubis Silver and Aurubis Gold, and allow the progress and further improvement to be tracked. The carbon footprints of our silver and gold are both more than 50 % below the global average. These low footprints achieved were only possible with major investments in measures that reach ambitious environmental standards.

Emission reduction

We have made continuous efforts to reduce direct emissions of pollutants such as dust as well as greenhouse gas emissions.



Energy-efficient technologies

We invested in energy-efficient technologies for gold and silver production in the Aurubis Group, implemented measures to save energy, facilitated the switch to renewable energies, and enabled decarbonization.

Recycling

The extension of Aurubis' recycling capacities contributed to our low overall footprint on the environment. The recycled content of silver and gold from the Aurubis Group for calendar year 2023 was 52 % for silver and 23 % for gold.

Aurubis AG
Corporate Environmental Protection

Tom Stückemann
Environmental Manager
Corporate Environmental Protection
t.stueckemann@aurubis.com

Daniela Cholakova
Director Environmental Protection
Corporate Environmental Protection
d.cholakova@aurubis.com