FACTSHEET

Environmental Profile of Aurubis BARS + PROFILES

Tomorrow Metals

Copper's contribution to sustainable development

Copper is a key material enabling important technological developments, such as generating and transmitting renewable energy and enhancing the energy efficiency of motors and transformers. These developments are essential to reach the objectives of the European Green Deal, particularly for a clean energy transition.

Aurubis BARS + PROFILES have excellent properties and high electrical conductivity for applications in a variety of sectors. Aurubis BARS + PROFILES provide copper solutions for electrical power systems as well as generators, substations, distribution systems, switchgear and conductor systems.

The environmental footprint of Aurubis BARS + PROFILES

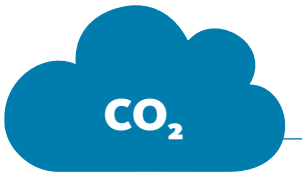
As the EU places more and more emphasis on green technologies needed to meet its climate targets, it is increasingly important to understand the life cycles of the underlying products.

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'. It 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 their operations: We have set the objective of achieving carbon-neutral production well before 2050.

The environmental impacts of Aurubis' products are calculated via the Environmental Footprint impact assessment method (3.0) to align with best scientific and industry reporting practices.

Carbon footprint of Aurubis BARS + PROFILES

in kg CO_2 equivalents per t of product



1,736

Aurubis BARS + PROFILES (data reference 2023)

Note: The Environmental Footprint method (3.0) is the most advanced impact assessment method adopted by the European Commission

Life cycle assessment for Aurubis BARS + PROFILES

Responding to requests from end-users, along with our own sustainability goals, Aurubis conducted a life cycle assessment (LCA) of our copper bars and profiles. In this holistic approach, we considered all steps involved in the production — starting from the extraction of the copper ore (cradle) through the manufacturing of the copper cathode, its processing into FOXROD, and further into bars and profiles (gate). The assessment includes impacts from all activities related to raw materials, direct emissions, transport, energy consumption, and auxiliary materials. The study was conducted in conformance with the ISO standards 14040 and 14044 for life cycle assessment.[1] Aurubis FOXROD (oxygen-free copper rod) from our own production is used as a preliminary product for Aurubis BARS + PROFILES. This rod is processed into bars and profiles with the help of a continuous extrusion process.

[1] ISO 14040:2021 Environmental management — Life cycle assessment — Principles and framework.
ISO 14044:2021 Environmental management — Life cycle assessment — Requirements and guidelines.

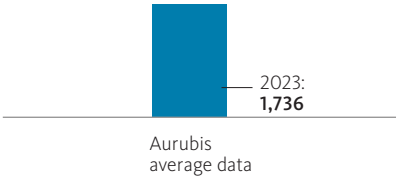
The results

The results of the environmental footprint of Aurubis BARS + PROFILES are directly related to the footprint of copper cathodes used. 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.

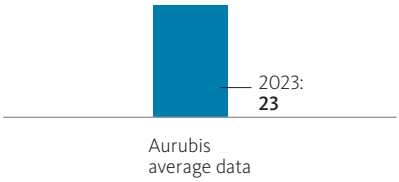
Carbon footprint (climate change), EF 3.0

in kg CO_2 eq./t oxygen-free rod



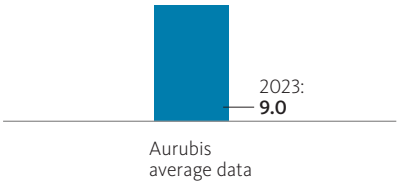
Resource use, fossils EF 3.0

in GJ/t oxygen-free rod



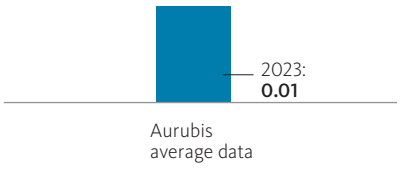
Acidification EF 3.0

in Mole of H+ eq./t oxygen-free rod



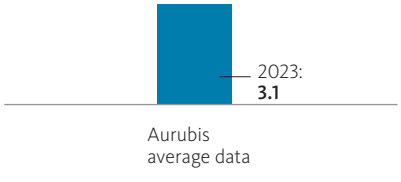
Eutrophication, freshwater EF 3.0

in kg P eq./t oxygen-free rod



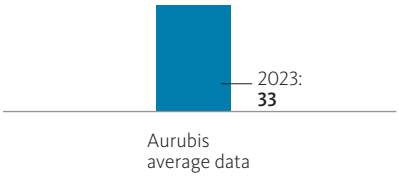
Eutrophication, marine EF 3.0

in kg N eq./t oxygen-free rod



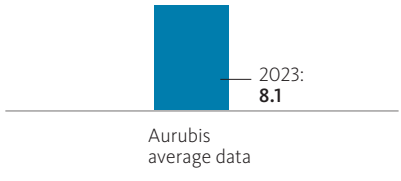
Eutrophication, terrestrial EF 3.0

in Mole of N eq./t oxygen-free rod



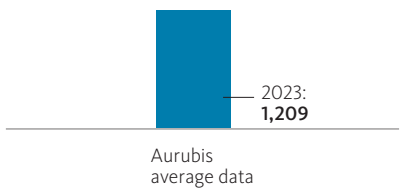
Summer smog (photochemical ozone formation) EF 3.0

in kg NMVOC eq./t oxygen-free rod



Water use EF 3.0

in m³ world equiv./t oxygen-free rod

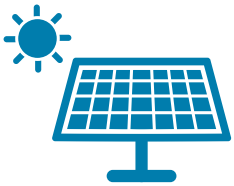


How we got there: Improvements by constantly implementing environmental and climate measures

In the LCA, our goal was to evaluate the environmental profile of Aurubis BARS + PROFILES and allow tracking of the progress and further improvement. Aurubis BARS + PROFILES are produced from Aurubis FOXROD. The LCA results strongly depend on the environmental profile of the upstream copper cathode. The carbon footprint of the copper cathode has decreased by 40 % since 2013 and is more than 60 % below the global average for all copper smelters and refiners. The results achieved were only possible with major investments in measures that reach ambitious environmental standards.

Emission reduction

Operations 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 at all sites across the Aurubis Group, implemented measures to save energy, facilitated the switch to renewable energies, and enabled decarbonization.

Recycling

Bars and profiles are manufactured from oxygen-free rod produced from cathodes because of the very high purity specifications needed to deliver high electrical conductivity. The extension of Aurubis' recycling capacities contributed to the improvements of our overall footprint on the environment. The recycled content of Aurubis BARS + PROFILES for calendar year 2023 was 63 %.

Aurubis BARS + PROFILES make a direct contribution to electricity distribution

Aurubis BARS + PROFILES provide copper solutions for use in generators. Electricity is distributed via switchgear and substations as well as conductor and distribution systems.

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