

Antimicrobial
Copper



Antimicrobial
copper alloys



Company portrait

Semi-finished products are the indispensable link between raw material and finished product. The Wieland Group has specialised in producing top quality semi-finished products in copper and copper alloys. This claim and the ongoing endeavours for further improvements are internationally renowned. Today, the Wieland Group with about 6,500 employees worldwide has assumed a leading position in the international market and is one of the world's leading manufacturers of semi-finished and special products in copper and copper alloys. These include strip, sheet, tube, rod, wire and sections as well as slide bearings, finned tubes, heat exchangers and ready-to-mount components.

Wieland's roots go back almost 200 years. The founder Philipp Jakob Wieland took over his uncle's art and bell foundry in Ulm in 1820 and by 1828 he was producing brass sheet and wire. In 1865 the Vöhringen plant started production. Over the years further branches were opened in Germany and abroad. Today, the Wieland Group comprises manufacturing companies, slitting centres, trading subsidiaries and sales offices in many European countries as well as in the USA, South Africa, Singapore and China. Through systematic investment in our facilities, such as our hot rolling mill or the new hydraulic extrusion press, we are continuously striving to improve the products for our customers.



Wieland-Werke AG, Ulm plant, Germany



Wieland-Werke AG, Vöhringen plant, Germany



Antimicrobial effectiveness

The spread of nosocomial infections is on the increase even though hygiene measures are constantly being improved. Bacteria are not only transmitted through direct person-to-person contact but also indirectly via contact surfaces such as door handles. Besides standard disinfection measures, the use of antimicrobial copper-base alloys can help to minimise the risk of infections significantly.

The antimicrobial effect of copper has been known for thousands of years. Within two hours, this leads to a reduction in bacterial count by 99.9 %. Copper is a natural trace element that is needed by any organism in a small amount. Bacterial cells are therefore not able to develop resistance against copper as is the case with different antibiotics.

Antimicrobial Copper



All our antimicrobial materials are co-branded with “Antimicrobial Copper – Cu +” The use of the Antimicrobial Copper brand and Cu+ mark by an organisation indicates that the International Copper Association has granted permission to do so based upon adherence to strict usage rules. These rules guide that organisation’s understanding of the underlying technology and the way they promote, advise and deploy it in line with existing research, regulatory and legislative requirements.





Antimicrobial materials

Under the Antimicrobial Copper brand, Wieland offers different copper alloys which are characterised by their antimicrobial effectiveness.

Antimicrobial alloys of Wieland are available in a wide range of colours, from classic brass to silver and red-brown colours.

Material	Wieland designation	Standard designation	Colour	Standard
Special brass	S23	CuZn23Al3Co	gold	EPA listed
	SW1/SW3	CuZn21Si3	golden brown	EPA listed
Nickel silver	N12/N22	CuNi12Zn24	silver	EPA listed
Bronze	B06/B16	CuSn6	bronze	EPA listed
Nickel-free alloy	FX9	CuZn15Mn15Al	silver	EPA listed
Copper-nickel alloy	L49	CuNi9Sn2	red brown	EPA listed

Further alloys and dimensions on request

Formats and sizes

We supply different semi-finished products depending on the technical requirements. In addition to hot-stamping or machining rods we offer tubes and sections. For stamping and deep-drawing operations a wide range of strip materials is available. Our product range is complemented by cast materials.

Material	Strip	Sheet	Rounded rods	Polygonal rods	Sections	Tubes	Ingots	Dimensions in mm						
								Strip thickness	Strip width	Diameter/width a/fl		Wall thickness		
S23	•	•						from 0.10	from 3.00	on request				
SW1			•	•	•	•				2	70			
			•	•						6	100			
					•					15	155	2	10	
SW3							•			70 x 40 x 260				
N12	•	•						from 0.10	from 3.00					
N22			•	•						2	42			
					•					2,5	20			
						•				10	50	0.2	5	
B06			•	•						2	100			
					•					2.5	100			
						•				6	90	0.1	9	
B16	•	•						from 0.10	from 3.00					
FX9	•	•						from 0.10	from 3.00					
			•	•	•	•				on request				
L49	•	•						from 0.10	from 3.00					

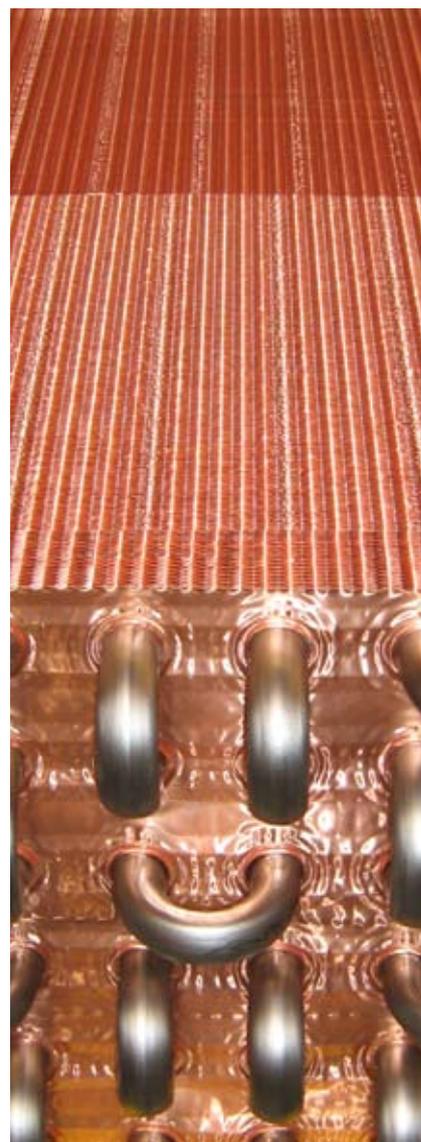
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What are the advantages of antimicrobial materials?

All of our „Cu+“-alloys are registered by the U.S. Environmental Protection Agency (EPA) as antimicrobial materials. The antimicrobial effect has been proven in laboratory tests, e.g. tests according to ISO 22196/JIS Z 2801, as well as in different clinical trials.

Our antimicrobial products meet very high quality requirements and are particularly suitable for use in public facilities, not only in the healthcare but also in the education and administration sectors, as well as in public transportation. The application fields are as diverse as the frequently touched surfaces such as door handles, light switches, bed frames, side tables, fittings and heat exchangers.

Antimicrobial alloys of Wieland are designed to meet the special requirements of frequently touched surfaces. Their comparatively high strength makes them resistant to scratches and other signs of wear. The composition of these alloys is optimised in terms of tarnishing and compatibility with common detergents and disinfectants.

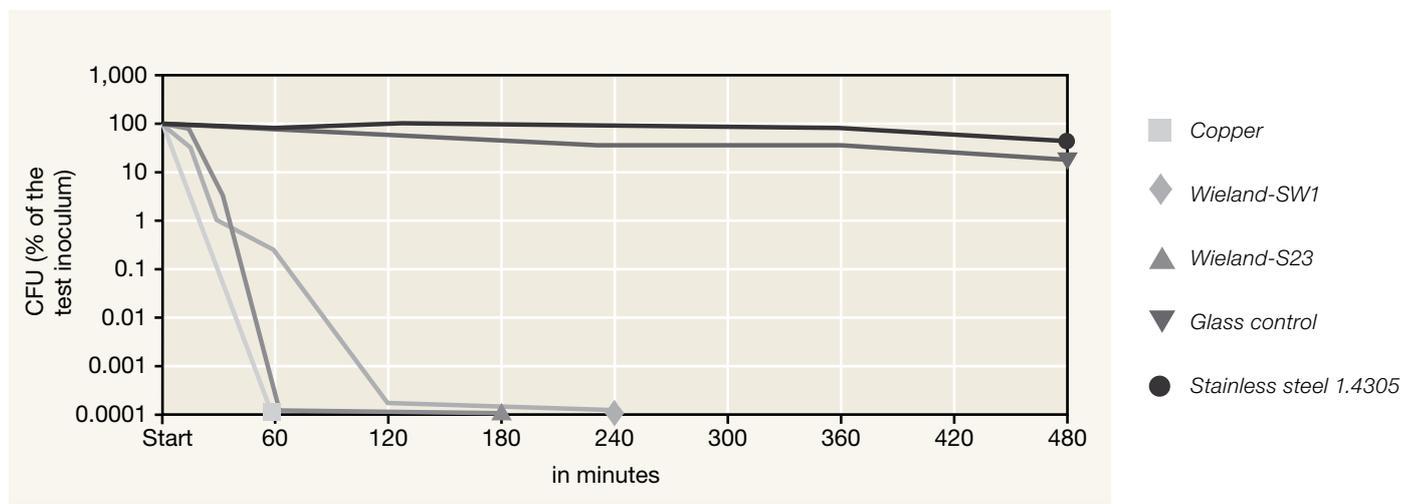


Door set made of Wieland-FX9



Light switch made of Wieland-L49

Heat exchanger device made of copper



Laboratory results from the JIS Z 2801 test – effect of different materials on the number of colony-forming units (CFU); the test was carried out with *Staphylococcus aureus* ATCC 6538

Technical Service

Our Technical Marketing experts are available to discuss any aspect of your production from the planning stage in order to find the optimum solution in partnership with you. Their know-how and expertise allow them to provide you with detailed information about product properties, further processing and delivery options.

Our Technical Marketing is available at any time for advice and to answer your questions.

Research and Development

Ongoing research and development is the foundation on which high-quality, future-oriented products are created within the Wieland Group. The objective of the development work, over and above high quality, is to provide customers with innovative products which allow cost-effective manufacture hand in hand with the efficient use of resources. Another aspect of Wieland's R&D activities is the development of materials which conform to current environment and health requirements.

A stringent, comprehensive control system ensures constant and consistent product quality. Another way in which Wieland satisfies ever-rising quality demands is by developing and building high precision measuring and testing equipment.

Moreover, Wieland is the only company in the industry with a testing and certification laboratory accredited to DIN EN ISO/IEC 17025 (2005).

Availability

Through a worldwide network of trading partners and subsidiaries Wieland offers its products market- and customer-oriented. Our products are available ex works and also via a large number of trading companies. These companies hold our materials in the most common dimensions in the trade in stock worldwide.

You can find a trading partner in your vicinity on the following page.



Reliability

Our supply of raw material is secured through long-term metal contracts.

Wieland stands for reliability and maximum security of supply.

Recycling and Conversion

Recycling is the raw material concept of the future.

The importance of recycling will further increase on a global scale. In the coming years and decades, the material cycles will be increasingly closed, with copper and copper-alloy scrap becoming the raw material for new high-quality semi-finished products. Recycling not only saves raw material resources but also energy.

We offer our customers the possibility to do conversion business with us or our trading partners. Our sales team can advise you at any time.

Contact us to learn about the advantages and the possibility of conversion business.

Wieland – Worldwide Availability



Europe

Wieland-Werke AG
 Fudickar Sauerländer Metallhandel GmbH
 Schwarzwälder Metallhandel GmbH
 Almeta Metallhandel AG
 Manner Metal A/S
 Cimsa Cintas Metálicas S.A.
 Wieland SAS
 Nemco Metals International Ltd.
 Wieland Polska Sp. z o. o.
 Wieland Buntmetall s.r.o.
 ABM Kuprál Kft.

Ulm
 Hagen-Hohenlimburg
 Trossingen
 Bellach
 Hvidovre
 Barcelona
 Croissy-Beaubourg
 Northampton
 Warsaw
 Prag
 Budapest

Germany
 Germany
 Germany
 Switzerland
 Denmark
 Spain
 France
 Great Britain
 Poland
 Czech Republic
 Hungary

North America

Wieland Metals, Inc.

Wheeling

USA

Asia

Wieland Metals Singapore (Pte.) Ltd.
 Wieland Metals Shanghai Ltd.

Singapore
 Shanghai

Singapore
 China

Wieland-Werke AG **www.wieland.com**

Graf-Arco-Str. 36, 89079 Ulm, Germany, Phone +49 731 944 0, Fax +49 731 944 2772, info@wieland.com

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