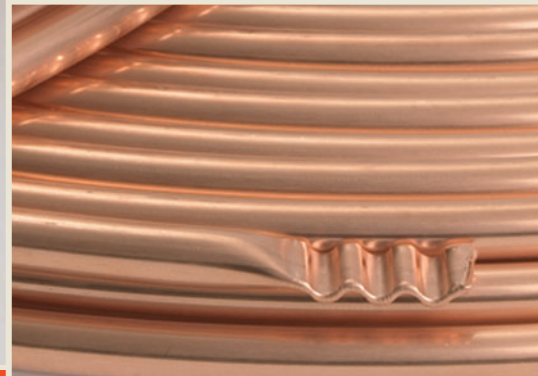
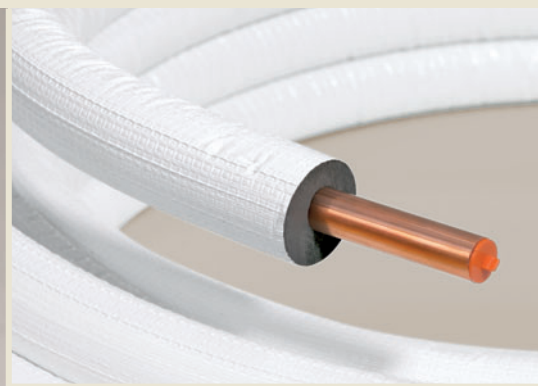


Copper tubes for ACR, climatisation and medical applications





Quality assurance

Wieland ensures consistently high product quality and performance through an exemplary quality management system.

Production is located in Vöhringen, Germany. Production and quality assurance are certified according to EN ISO 9001, with the location being validated according to the environmental standards EN 14001 and EMAS. Continuous quality control is ensured by an in-house laboratory accredited in accordance with EN 17025. Numerous quality inspection certificates and product approvals of renowned organisations attest to the high quality of Wieland branded copper tubes.

Wieland branded copper tubes for air conditioning and refrigeration are manufactured in accordance with the requirements of DIN EN 12735-1 and DIN EN 13348 and made of the standardised material Cu-DHP (oxygen-free pure copper).

Wieland worldwide

The Wieland Group with headquarters in Ulm, Germany, is one of the world's leading manufacturers of semi-finished and special products in copper and copper alloys. The Wieland Group comprises more than 30 manufacturing companies, slitting centres and trading subsidiaries in many European countries as well as in Asia, Singapore, South Africa and the USA.



Copper tube for medical gas supply

The seamless drawn **cupromed®** copper tube is suitable for the transportation of technical gases and refrigerants as well as medical gases and for vacuum.

cupromed® meets the requirements for air-conditioning and refrigeration tube according to EN 12735-1 as well as the requirements of EN 737-3 and EN 793 regarding tube for medical gas supply units. **cupromed®** meets the requirements of the Pressure Equipment 97/23C.

The **cupromed®** copper tube has a clean and dry inner surface and exceeds the requirements according to EN 13348.

The ends of **cupromed®** copper tubes are closed in order to ensure the cleanliness of the inner surface during storage and transportation.

Material: Cu-DHP (SF-Cu), Wieland-K20
 Design: EN 13348 and EN 12735-1
 Pressure Equipment
 Directive: compliant

cupromed® copper tube in coils

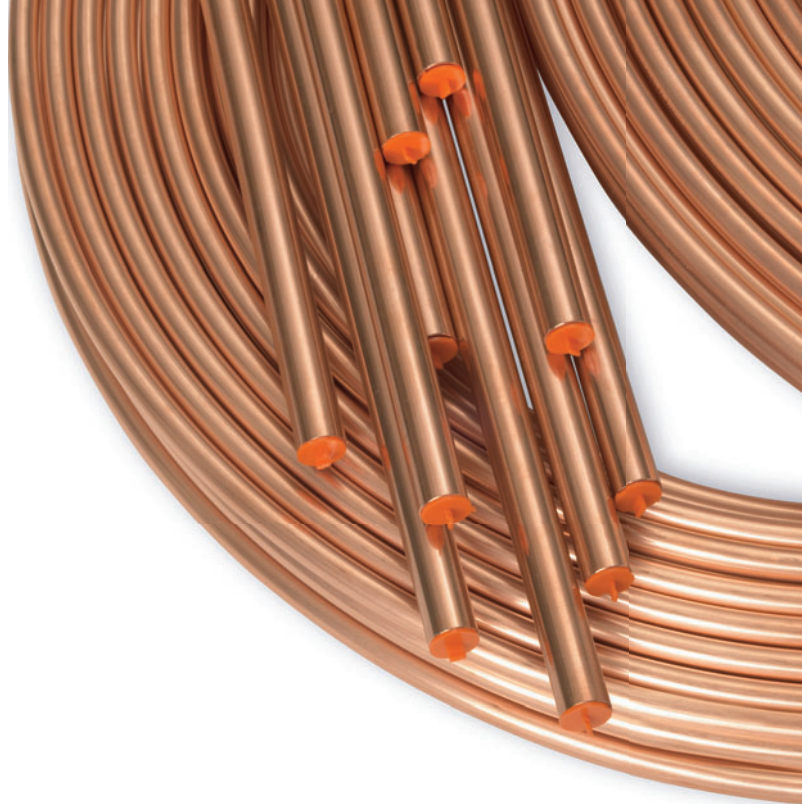


Temper: soft R220
 Ends: closed with caps
 Packing: in foil
 Dimensions: on request

cupromed® copper tube in straight lengths



Temper: hard as drawn R290 from stock
 Ends: closed with plastic plugs/caps
 Packing: in lengths of 5 m in cardboard boxes or upon agreement



The dimensions available from stock are shown in the following table. Other dimensions and tempers are available on request.

cupromed® standard dimensions from stock			
Dimension	Weight nominal	Operating pressure*	Straight lengths
mm	kg/m	bar	m/cardboard box**
8 x 1	0.196	143	100
10 x 1	0.252	111	75
12 x 1	0.308	91	50
15 x 1	0.391	71	50
16 x 1	0.419	66	50
18 x 1	0.475	59	50
22 x 1	0.587	48	50
28 x 1	0.755	37	50
28 x 1.5	1.110	57	50
35 x 1.5	1.410	45	25
42 x 1.5	1.700	37	25
54 x 2	2.910	38	20
64 x 2	3.467	32	5
76.1 x 2	4.144	27	5
88.9 x 2	4.859	23	5
108 x 2.5	7.374	24	5

* maximum operating pressure with fourfold safety

** packing unit for dimensions up to 54 mm

cuprofrío® copper tube for refrigeration

cuprofrío®, the seamless drawn Wieland refrigeration tube is mainly used to transport technical gases and liquids in chillers, air-conditioning and refrigeration units as well as heat exchangers. An outstanding characteristic of cuprofrío® is its clean and dry inner surface.

The tube ends are closed to maintain the defined condition of the inner surface also during storage and transportation.

cuprofrío® tube meets the requirements of EN 12735-1 for copper tube used in air-conditioning and refrigeration. cuprofrío® also meets the requirements of the Pressure Equipment Directive 97/23/EC.

Wieland-Werke AG has concluded a separate warranty agreement with VDKF (Verband Deutscher Kälte-Klima-Fachleute e.V. – Association of Refrigeration and Air Conditioning Contractors) covering property damage and bodily injury.

Material: Cu-DHP (SF-Cu), Wieland-K20
 Design: EN 12735-1
 Pressure Equipment
 Directive: compliant
 Environmental declaration: according to ISO 14025

The dimensions available from stock are shown in the following table. Other dimensions and tempers are available on request.

cuprofrío® standard dimensions from stock				
Dimension	Weight nominal	Operating pressure*	Coils	Straight lengths
mm	kg/m	bar	m/cardboard box**	m/cardboard box**
6 x 1	0.140	200	2 x 35	200
8 x 1	0.196	143	2 x 35	100
10 x 1	0.252	111	35	75
12 x 1	0.308	91	35	50
15 x 1	0.391	71	25	50
16 x 1	0.419	66	25	50
18 x 1	0.475	59	25	50
22 x 1	0.587	48	25	50
28 x 1	0.755	37	–	50
28 x 1.5	1.110	57	–	25
35 x 1.5	1.410	45	–	25
42 x 1.5	1.700	37	–	25
54 x 2	2.910	38	–	20
64 x 2	3.467	32	–	5
76.1 x 2	4.144	27	–	5
88.9 x 2	4.859	23	–	5
108 x 2.5	7.374	24	–	5

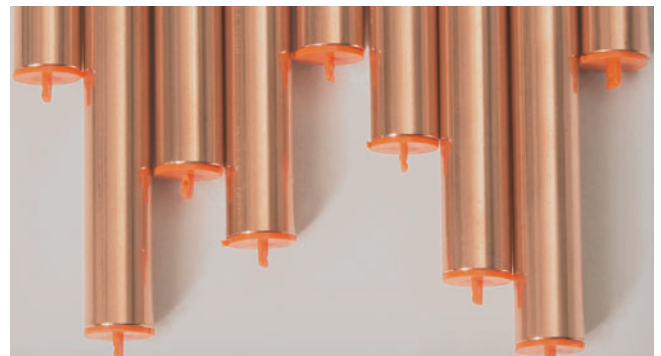
* maximum operating pressure with fourfold safety
 ** packing unit for dimensions up to 54 mm

cuprofrío® refrigeration tube in coils



Temper: soft R220
 from stock
 Ends: pressed
 Packing: in cardboard boxes

cuprofrío® refrigeration tube in straight lengths



Temper: hard as drawn R290
 from stock
 Ends: closed with plastic plugs/caps
 Packing: in lengths of 5 m
 in cardboard boxes or upon agreement

ASTM and inch dimensions according to BS available from 1/4" to 11".

Factory thermally-insulated refrigeration tube

This tube consists of a seamless drawn Wieland cuprofrío® refrigeration tube with a heat-insulating sheath. **cuprofrío®.plus** is used for the transportation of technical gases and liquids such as the refrigerants R407C or R410A.

cuprofrío®.plus is very easy to unwind and to bend. This is possible because a heat-insulating sheath is already applied during production.

The cuprofrío® tube meets and exceeds the requirements of EN 12735-1 for copper tube for air conditioning and refrigeration. Wieland-Werke AG has concluded a separate warranty agreement with VDKF (Verband Deutscher Kälte-Klima-Fachleute e.V. – Association of Refrigeration and Air Conditioning Contractors) covering property damage and bodily injury. **cuprofrío®.plus** meets the requirements of the Pressure Equipment Directive 97/23/EC.

The sheathing consists of an elastomer-modified thermoplastic specially developed for air conditioning and refrigeration. The highly tear-resistant material proves its worth on building sites, for example when tubes are being fed through wall apertures.

Additional advantages of this material are low thermal conductivity and extremely high water vapour diffusion resistance, which, in combination with the insulating layer thickness, prevent the formation of condensation water on the tube

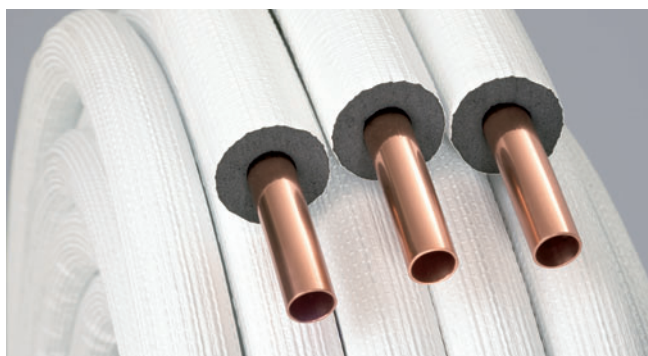
surface. Together with modern refrigerants this ensures safe long-term operation.

The sheathing provides double UV protection resulting in a high level of colour fastness and stabilising material properties even in tube sections exposed to direct sunlight.

An outstanding characteristic of **cuprofrío®.plus** is its bright, clean and dry inner surface. The tube ends are closed in order to keep the surface clean from storage and transportation through to installation.

Material of core tube:	Cu-DHP, Wieland-K20, R220 soft
Tube design:	EN 12735-1
Pressure Equipment Directive:	compliant
Thermal insulation:	elastomer-modified polyethylene HFC/CFC-free
Thermal conductivity:	0.034 W/mK (0 °C)
Operating temperature range:	-80 °C to +95 °C
Protective foil:	UV-stabilised polyethylene
Environmental declaration:	according to ISO 14025
Building material class:	EN 13501-1-E

The dimensions available from stock are shown in the table. Other dimensions and tempers are available on request.



cuprofrío®.plus standard dimension from stock (metric)				
Dimension	Weight nominal	Operating pressure*	Coils	Insulating layer thickness
mm	kg/m	bar	m/coil	mm
6 x 1	0.140	200	25	6
10 x 1	0.252	111	25	9
12 x 1	0.308	91	25	9
16 x 1	0.419	66	25	9
18 x 1	0.475	59	25	9
22 x 1	0.587	48	25	9

* maximum operating pressure with fourfold safety

cuprofrío®.plus standard dimension from stock (inch)				
Dimension	Weight nominal	Operating pressure*	Coils	Insulating layer thickness
mm	kg/m	bar	m/coil	mm
1/4" x 0.8	0.125	144	50	6
3/8" x 0.8	0.197	92	50	9
1/2" x 0.8	0.267	67	50	9
5/8" x 1	0.417	67	25	9
3/4" x 1	0.506	55	25	9
7/8" x 1.2	0.707	57	25	9

* maximum operating pressure with fourfold safety

The branded copper tube for geothermal energy

The seamless drawn **cuprogeo**® tube is used for geothermal energy production. **cuprogeo**® is designed for the use of refrigerants and gases for direct evaporation. The advantage of this application is that high performance can be achieved with suitable heat pumps.

In addition, **cuprogeo**® can be used for the transportation of technical gases and liquids in chillers, air-conditioning and refrigeration units as well as heat exchangers if a solid outer sheathing is required.

An outstanding characteristic of cuprogeo® is its clean and dry inner surface.

The tube ends are closed to maintain the defined condition of the inner surface during storage and transportation.

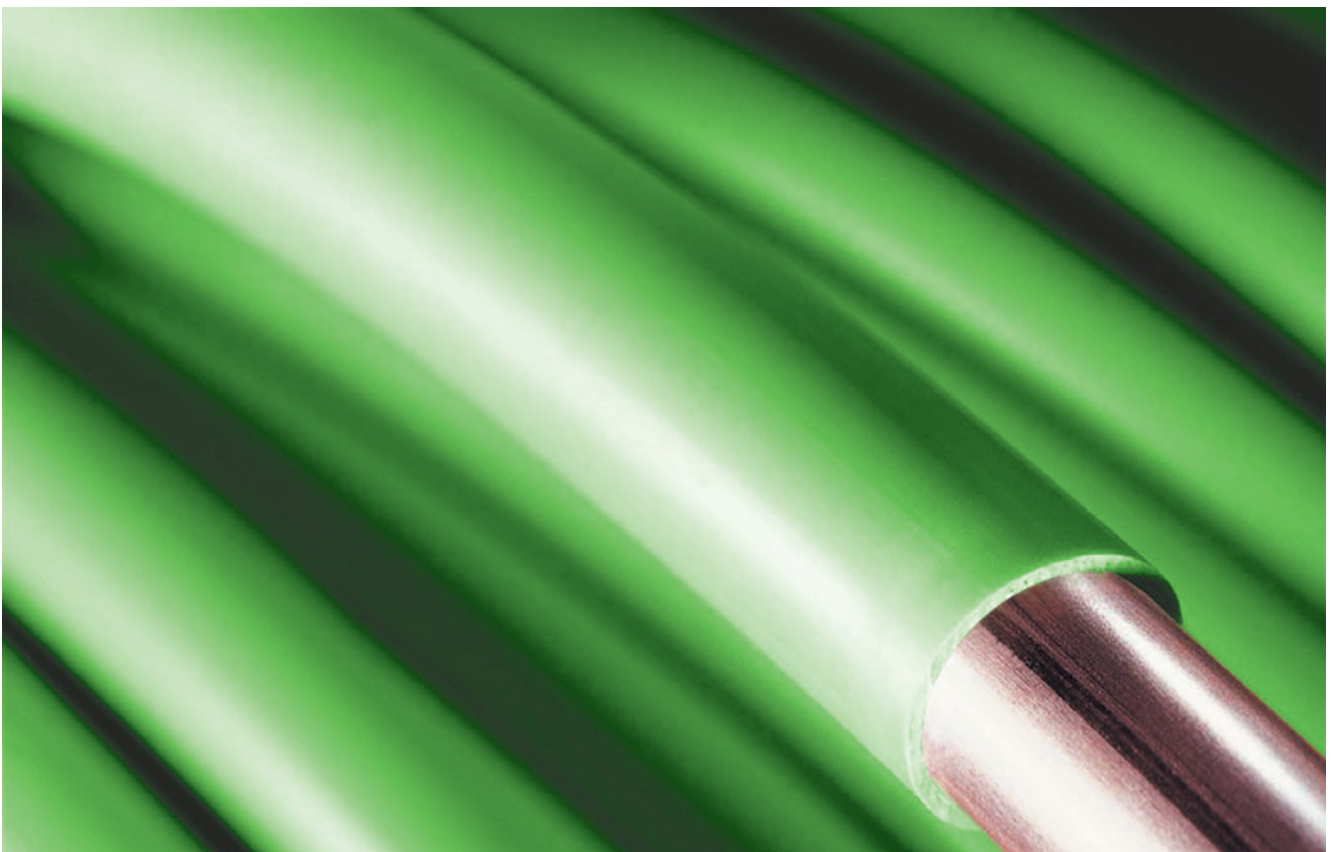
cuprogeo® tube meets the requirements of EN 12735-1 for copper tube for use in air-conditioning and refrigeration and for transportation of technical gases. **cuprogeo**® complies with the Pressure Equipment Directive 97/23/EC.

Material of core tube: pure copper Cu-DHP, Wieland-K20
 Thermal conductivity: $\lambda \geq 344$ W/mK
 Tube design: EN 12735-1
 Pressure Equipment
 Directive: compliant
 Temper: soft R220
 Ends: closed with plastic plugs/caps
 Sheathing: polyethylene
 Thermal conductivity: $\lambda = 0.35$ W/mK
 Packing: Coils on pallet, pallet shrink-wrapped

Alternative dimensions and coil lengths are available on request.

cuprogeo®				
Dimension	Weight nominal	Operating pressure*	Coil length	Outside diameter including sheathing
mm	kg/m	bar	m	
10 x 0.7	0.182	75	upon agreement	12 mm
10 x 1	0.252	111	upon agreement	12 mm
12 x 0.7	0.221	61	upon agreement	14 mm
12 x 1	0.309	91	upon agreement	14 mm
16 x 1	0.419	66	upon agreement	18 mm

* maximum operating pressure with fourfold safety



Use of Wieland branded copper tubes

Air conditioning and refrigeration	Symbol	Product
Refrigerants		cuprofrio® cuprofrio®.plus cuprogeo®
Halogenated fluorochlorocarbon		
Halogenated fluorocarbon, e.g. R134a, R404A, 407C, 410A, R507		
Flammable refrigerants	C _n H _n	
Others		
Carbon dioxide*	CO ₂	
Ammonia	NH ₃	currently not permitted!
Industrial and laboratory gases***		
Noble gases		cuprofrio® cupromed® cuprogeo®
Helium	He	
Neon	Ne	
Argon	Ar	
Krypton	Kr	
Xenon	Xe	
Radon	Rn	
Inert gases		
Nitrogen	N ₂	
Carbon dioxide*	CO ₂	
Sulphur hexafluoride	SF ₆	

* The gas must be absolutely dry, as is the case, for example, in compressed air cylinders.

** Formation of the highly explosive copper acetylide possible!
Rules to be observed: "Betriebssicherheitsverordnung - BetrSichV" (Ordinance on Industrial Safety and Health) and "Technische Regeln für Acetylenanlagen und Kalziumkarbidlager - TRAC" (Technical Regulations for acetylene plants and calcium carbide stores)

*** Applications for domestic fuel supply (natural gas, fuel oil, etc.) do not fall under the application "industrial and laboratory gases".

Industrial and laboratory gases***	Symbol	Product
Fuel gases		cuprofrio® cupromed® cuprogeo®
Hydrogen	H ₂	
Methane	CH ₄	
Liquid gases	C _n H _n	
Coke oven gas		
Acetylene**	C ₂ H ₂	Copper not permitted!
Medical engineering		
Oxygen	O ₂	cupromed®
Nitrogen	N ₂	
Carbon dioxide*	CO ₂	
Nitrous oxide	N ₂ O	
Argon	Ar	
Helium	He	
Xenon	Xe	
Compressed air for medical purposes		
Vacuum		

Wieland-Werke AG

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