Heat Exchanger Material
Facts & Figures

Aurubis Heat Exchanger Material

2,800 • different heat exchanger designs are included in the Aurubis Technical Center’s database.

50 • years is how long the Aurubis Technical Center has been in operation.

31 • is the number of times that the amount of radiator strip annually supplied by Aurubis could be wound around the world.

> 290 °C
> 554 °F

is the extremely high inlet temperature that CuproBraze® charge air coolers (CACs) can withstand.
Production of Heat Exchanger Material

Raw materials
Concentrates and recycling materials are the raw materials from which copper is produced.

Products
The copper is processed into products. Some products are already the result of copper production.

Slitting Centers
Service centers located near our customers cut strips to the desired dimensions.

Sales and distribution
An international sales and distribution network markets our products.

THE GROUP
Aurubis Group
Aurubis Heat Exchanger Material

THE PRODUCTS
Alloys
Dimensions
Mechanical properties: Tempers

SPECIALTY PRODUCTS
Brazed plate and finned tube heat exchangers
CuproBraze® technology

Technical Center
Outstanding service
Contact
Aurubis is the world’s leading supplier of thin gauge copper and copper alloy strip for the heat exchanger industry, serving engine cooling customers around the world. Customers benefit from the high quality, productivity, process efficiency and innovation Aurubis provides. They trust Aurubis’ proprietary processes and technology, and appreciate that the majority of thin strip manufacturing equipment and processes have been developed and built by Aurubis itself.

Aurubis Group
Our Copper for your Life

As a fully integrated global copper company, Aurubis is a leader in smelting, fabricating, refining and recycling copper. With about 6,400 employees at production sites in Europe and the US and sales offices all over the world, the Aurubis Group has a leading global position in the copper industry. Aurubis stands for innovative processes, cutting-edge technology, exemplary environmental protection, customer value and high profitability.

Long-term customer relationships stand for reliability and confidence. The different types of heat exchanger designs that are produced by Aurubis using copper and brass alloys are nearly unlimited: radiators, charge air coolers (CACs), brazed plate heat exchangers, heaters and AC systems. At its two production sites for heat exchanger material in Buffalo (USA) and Zutphen (Netherlands), Aurubis manufactures a large selection of fin copper, tube brass and brazing foil of high uniform quality, with tight dimensional tolerances and precise mechanical properties.

The Aurubis Technical Center continuously works on the further development of materials and manufacturing processes for its customers’ applications. See page 16 for additional information.
COPPER AND LOW-ALLOYED COPPER

<table>
<thead>
<tr>
<th>ISO</th>
<th>UNS</th>
<th>EN</th>
<th>JIS</th>
<th>Main applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cu-HCP (SE-Cu-57)</td>
<td>C10300</td>
<td>CW021A</td>
<td>C103</td>
<td>SM0013</td>
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<tr>
<td>CuXLP / Cu-PHC (SE-Cu-58)</td>
<td>C10300</td>
<td>CW020A</td>
<td>C103</td>
<td>SM0011</td>
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<tr>
<td>Cu-DHP (SF-Cu)</td>
<td>C12200</td>
<td>CW024A</td>
<td>C122</td>
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<tr>
<td>CuTe0.02Sn0.02</td>
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<td>SM0700</td>
<td>SM0701</td>
<td>Fins; brazed plate heat exchangers</td>
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<tr>
<td>CuSn0.04</td>
<td>C14415</td>
<td>CW117C</td>
<td>C14415</td>
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COPPER AND LOW-ALLOYED COPPER Main applications

<table>
<thead>
<tr>
<th>ISO</th>
<th>UNS</th>
<th>EN</th>
<th>JIS</th>
<th>Main applications</th>
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</thead>
<tbody>
<tr>
<td>Cu-zn15</td>
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<td>CW502L</td>
<td>C2300</td>
<td>SM1085</td>
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<tr>
<td>Cu-zn30</td>
<td>C26000</td>
<td>CW505L</td>
<td>C2600</td>
<td>SM1070</td>
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<tr>
<td>Cu-zn30As</td>
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<td>CW707L</td>
<td>C2680</td>
<td>SM2870</td>
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<tr>
<td>Cu-zn33</td>
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<td>CW506L</td>
<td>C2680</td>
<td>SM1067</td>
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<tr>
<td>Cu-zn35</td>
<td>C26800</td>
<td>CW506L</td>
<td>C2680</td>
<td>SM1065</td>
</tr>
<tr>
<td>Cu-zn35P</td>
<td>C26800</td>
<td>CW506L</td>
<td>C2680</td>
<td>SM2865</td>
</tr>
<tr>
<td>Cu-zn36</td>
<td>C27000</td>
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<td>SM1064</td>
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<tr>
<td>Cu-zn37</td>
<td>C27200</td>
<td>CW508L</td>
<td>C2720</td>
<td>SM1063</td>
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</table>

Brass Main applications

<table>
<thead>
<tr>
<th>ISO</th>
<th>UNS</th>
<th>EN</th>
<th>JIS</th>
<th>Main applications</th>
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<tbody>
<tr>
<td>CuZn15Fe0.8</td>
<td>C66420</td>
<td>SM2385</td>
<td>SM2385</td>
<td>Tubes</td>
</tr>
<tr>
<td>Cu64ZnNi3</td>
<td>C74400</td>
<td>SM2464</td>
<td>SM2464</td>
<td>Tanks and headers</td>
</tr>
<tr>
<td>CuCr0.2</td>
<td>C66420</td>
<td>SM2385</td>
<td>SM2385</td>
<td>Fins</td>
</tr>
</tbody>
</table>

Alloys Dimensions

**THICKNESS**

<table>
<thead>
<tr>
<th>Product</th>
<th>Thickness range (mm)</th>
<th>Thickness tolerance (mm)</th>
<th>Thickness range (inches)</th>
<th>Thickness tolerance (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fin material1</td>
<td>0.035 – 0.050</td>
<td>± 0.002</td>
<td>0.0014 – 0.020</td>
<td>± 0.0011</td>
</tr>
<tr>
<td></td>
<td>&gt; 0.050 – 0.100</td>
<td>± 0.003</td>
<td>&gt; 0.0020 – 0.0039</td>
<td>± 0.0011</td>
</tr>
<tr>
<td></td>
<td>&gt; 0.100 – 0.150</td>
<td>± 0.005</td>
<td>&gt; 0.0059 – 0.0059</td>
<td>± 0.0022</td>
</tr>
<tr>
<td>Tube strip</td>
<td>&gt; 0.300 – 0.500</td>
<td>± 0.005</td>
<td>&gt; 0.00118 – 0.0197</td>
<td>± 0.0002</td>
</tr>
<tr>
<td></td>
<td>&gt; 0.300 – 0.500</td>
<td>± 2 %</td>
<td></td>
<td>± 2 %</td>
</tr>
<tr>
<td>Tank and header strip</td>
<td>0.300 – 1.600</td>
<td>± 2 %</td>
<td>0.0118 – 0.0630</td>
<td>± 2 %</td>
</tr>
<tr>
<td>Brazing foil**</td>
<td>0.035 – 0.050</td>
<td>± 0.002</td>
<td>0.0014 – 0.0020</td>
<td>± 0.0001</td>
</tr>
<tr>
<td></td>
<td>&gt; 0.050 – 0.100</td>
<td>± 0.003</td>
<td>&gt; 0.0020 – 0.0039</td>
<td>± 0.0001</td>
</tr>
<tr>
<td></td>
<td>&gt; 0.100 – 0.150</td>
<td>± 0.005</td>
<td>&gt; 0.0059 – 0.0059</td>
<td>± 0.0022</td>
</tr>
<tr>
<td></td>
<td>&gt; 0.150 – 0.200</td>
<td>± 0.007</td>
<td>&gt; 0.0059 – 0.0079</td>
<td>± 0.0003</td>
</tr>
</tbody>
</table>

**WIDTH**

<table>
<thead>
<tr>
<th>Product</th>
<th>Width range (mm)</th>
<th>Width tolerance (mm)</th>
<th>Width range (inches)</th>
<th>Width tolerance (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fin material1</td>
<td>20 – 100</td>
<td>± 0.075</td>
<td>0.7874 – 3.9370</td>
<td>± 0.0030</td>
</tr>
<tr>
<td></td>
<td>&gt; 100 – 200</td>
<td>± 0.100</td>
<td>&gt; 3.9370 – 7.840</td>
<td>± 0.0040</td>
</tr>
<tr>
<td></td>
<td>&gt; 200 – 300</td>
<td>± 0.150</td>
<td>&gt; 7.840 – 13.7795</td>
<td>± 0.0059</td>
</tr>
<tr>
<td>Tube strip</td>
<td>6 – 50</td>
<td>± 0.050</td>
<td>0.2362 – 1.9685</td>
<td>± 0.020</td>
</tr>
<tr>
<td>Tank and header strip</td>
<td>&gt; 200</td>
<td>± 0.100</td>
<td>&gt; 7.840 – 10.984</td>
<td>± 0.0040</td>
</tr>
<tr>
<td></td>
<td>&gt; 350 – 620</td>
<td>± 0.200</td>
<td>&gt; 13.7795 – 24.4094</td>
<td>± 0.0079</td>
</tr>
<tr>
<td>Brazing foil**</td>
<td>5 – 100</td>
<td>± 0.075</td>
<td>0.1968 – 3.9370</td>
<td>± 0.0030</td>
</tr>
<tr>
<td></td>
<td>&gt; 100 – 200</td>
<td>± 0.100</td>
<td>&gt; 3.9370 – 7.840</td>
<td>± 0.0040</td>
</tr>
<tr>
<td></td>
<td>&gt; 200 – 600</td>
<td>± 0.150</td>
<td>&gt; 7.840 – 23.6220</td>
<td>± 0.0059</td>
</tr>
</tbody>
</table>

Aurubis provides alloys specially developed to meet the requirements of the heat exchanger industry.

**THE BENCHMARK FOR EDGE QUALITY**

Leading manufacturers for high frequency (HF) welded tube mills require Aurubis strip to commission their equipment.

**PROPERTIES**

**Cu**

- Melting point: 1083°C
- Density: 8.96 g/cm³
- Electrical conductivity: 100% IACS

**CuZn15**

- Composition: Cu 95.5%, Zn 4.5%
- Properties: High corrosion resistance, good formability

**CuZn30**

- Composition: Cu 92%, Zn 8%
- Properties: High strength, good wear resistance

**CuZn36**

- Composition: Cu 95%, Zn 5%
- Properties: Excellent corrosion resistance

**CuZn37**

- Composition: Cu 95%, Zn 5%
- Properties: High strength, good formability

**CuCr0.2**

- Composition: Cu 99.8%, Cr 0.2%
- Properties: High hardness, good wear resistance

**CuSn0.04**

- Composition: Cu 99.4%, Sn 0.6%
- Properties: Good corrosion resistance, high ductility

**CuSn0.09**

- Composition: Cu 99.9%, Sn 0.1%
- Properties: Excellent formability, good corrosion resistance

**CuSn0.15**

- Composition: Cu 99.5%, Sn 0.5%
- Properties: High strength, good formability

**CuSn0.2**

- Composition: Cu 99.8%, Sn 0.2%
- Properties: Good corrosion resistance, high ductility

**Probraze ALLOYS**

- Composition: CuZn15Fe0.8
- Properties: High strength, good formability

- Composition: Cu64ZnNi3
- Properties: High hardness, good wear resistance

- Composition: CuCr0.2
- Properties: Excellent formability, high hardness

- Composition: CuZn15Fe0.8
- Properties: Good corrosion resistance, high ductility

- Composition: Cu64ZnNi3
- Properties: Excellent formability, high hardness

- Composition: CuCr0.2
- Properties: High corrosion resistance, good formability
# Mechanical properties

## Optimize your production process

Uniform mechanical properties have a strong influence on further processing. Choose the properties for optimizing your production process together with our experts.

### TEMPERATURES: AURUBIS STANDARDS FOR FIN MATERIAL, TUBE STRIP AND TANK AND HEADER STRIP

Copper and brass strip for heat exchanger applications from Aurubis can be produced for all known international standards. Due to our extensive experience in the production of heat exchanger materials, we have been developing internal tempers specifically for those types of applications.

### FIN MATERIAL IN ALLOYS CuTe0.02Sn0.02 AND CuSn0.04

<table>
<thead>
<tr>
<th>Temper</th>
<th>Tensile strength (MPa)</th>
<th>Hardness (HV*)</th>
</tr>
</thead>
<tbody>
<tr>
<td>79</td>
<td>220 – 275</td>
<td>53 – 65</td>
</tr>
<tr>
<td>81</td>
<td>230 – 290</td>
<td>63 – 75</td>
</tr>
<tr>
<td>82</td>
<td>240 – 300</td>
<td>67 – 85</td>
</tr>
<tr>
<td>83</td>
<td>255 – 315</td>
<td>80 – 100</td>
</tr>
<tr>
<td>845</td>
<td>260 – 330</td>
<td>85 – 110</td>
</tr>
<tr>
<td>867</td>
<td>280 – 360</td>
<td>95 – 120</td>
</tr>
<tr>
<td>889</td>
<td>330 – 410</td>
<td>105 – 130</td>
</tr>
<tr>
<td>901</td>
<td>355 – 435</td>
<td>115 – 140</td>
</tr>
<tr>
<td>923</td>
<td>390 – 475</td>
<td>125 – 150</td>
</tr>
<tr>
<td>95</td>
<td>520 – 590</td>
<td>140 – 160</td>
</tr>
</tbody>
</table>

* For reference only. Other tempers available on request.

### FIN MATERIAL IN CuproBraze® ALLOY CuCr0.2

<table>
<thead>
<tr>
<th>Temper</th>
<th>Tensile strength (MPa)</th>
<th>Hardness (HV*)</th>
</tr>
</thead>
<tbody>
<tr>
<td>47B</td>
<td>330 – 410</td>
<td>110 – 130</td>
</tr>
<tr>
<td>79B</td>
<td>255 – 315</td>
<td>65 – 85</td>
</tr>
</tbody>
</table>

### TUBE STRIP IN ALLOYS CuZn30, CuZn30As, CuZn35 AND CuZn35P

#### PREFERRED TEMPER FOR ANNEALED-TO-TEMPER CONDITION

<table>
<thead>
<tr>
<th>Temper</th>
<th>Tensile strength (MPa)</th>
<th>Hardness (HV)</th>
<th>Grain size (µm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>77</td>
<td>380 – 460</td>
<td>96 – 124</td>
<td>Max. 10</td>
</tr>
<tr>
<td>79</td>
<td>410 – 480</td>
<td>115 – 145</td>
<td>Max. 10</td>
</tr>
</tbody>
</table>

#### PREFERRED TEMPER FOR ROLLED-TO-TEMPER CONDITION

<table>
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<tr>
<th>Temper</th>
<th>Tensile strength (MPa)</th>
<th>Hardness (HV)</th>
<th>Grain size (µm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>86B</td>
<td>390 – 480</td>
<td>118 – 148</td>
<td>Max. 15</td>
</tr>
</tbody>
</table>

### TUBE STRIP IN CuproBraze® ALLOY CuZn15Fe0.8

#### ANNEALED-TO-TEMPER CONDITION

<table>
<thead>
<tr>
<th>Temper</th>
<th>Tensile strength (MPa)</th>
<th>Hardness (HV)</th>
<th>Grain size (µm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>79B</td>
<td>386 – 455</td>
<td>115 – 145</td>
<td>Max. 10</td>
</tr>
</tbody>
</table>

### TUBE STRIP IN ALLOY CuZn15

#### ANNEALED-TO-TEMPER CONDITION

<table>
<thead>
<tr>
<th>Temper</th>
<th>Tensile strength (MPa)</th>
<th>Hardness (HV)</th>
<th>Grain size (µm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>851</td>
<td>300 – 370</td>
<td>80 – 100</td>
<td>Max. 15</td>
</tr>
</tbody>
</table>

Other tempers available on request.
**TANKS MADE OF CuZn30, CuZn33 AND CuZn35**
The material hardness is in the range of HV 55 – 75.

### ANNEALED-TO-TEMPER CONDITION

<table>
<thead>
<tr>
<th>Temper</th>
<th>Thickness range (mm)</th>
<th>Thickness range (inches)</th>
<th>Grain size (µm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TB4</td>
<td>0.425 – 0.570</td>
<td>0.0167 – 0.0224</td>
<td>50 – 75</td>
</tr>
<tr>
<td>TB5</td>
<td>0.571 – 0.670</td>
<td>0.0225 – 0.0264</td>
<td>55 – 80</td>
</tr>
<tr>
<td>TB6</td>
<td>0.671 – 0.750</td>
<td>0.0264 – 0.0295</td>
<td>60 – 85</td>
</tr>
<tr>
<td>TB7</td>
<td>0.751 – 0.850</td>
<td>0.0296 – 0.0335</td>
<td>65 – 90</td>
</tr>
<tr>
<td>TB8</td>
<td>0.851 – 1.050</td>
<td>0.0335 – 0.0413</td>
<td>70 – 100</td>
</tr>
<tr>
<td>TB0</td>
<td>1.051 – 1.600</td>
<td>0.0414 – 0.0630</td>
<td>75 – 110</td>
</tr>
</tbody>
</table>

**HEADERS IN ALLOYS CuZn30, CuZn33 AND CuZn35**
The material hardness is in the range of HV 60 – 85.

### ANNEALED-TO-TEMPER CONDITION

<table>
<thead>
<tr>
<th>Temper</th>
<th>Thickness range (mm)</th>
<th>Thickness range (inches)</th>
<th>Grain size (µm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP4</td>
<td>0.425 – 0.630</td>
<td>0.0167 – 0.0248</td>
<td>35 – 55</td>
</tr>
<tr>
<td>HP6</td>
<td>0.631 – 0.850</td>
<td>0.0248 – 0.0335</td>
<td>40 – 65</td>
</tr>
<tr>
<td>HP8</td>
<td>0.851 – 1.050</td>
<td>0.0335 – 0.0374</td>
<td>45 – 75</td>
</tr>
<tr>
<td>HP9</td>
<td>0.951 – 1.250</td>
<td>0.0374 – 0.0492</td>
<td>50 – 80</td>
</tr>
<tr>
<td>HP0</td>
<td>1.251 – 1.600</td>
<td>0.0493 – 0.0630</td>
<td>50 – 90</td>
</tr>
</tbody>
</table>

Other tempers available on request.

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**QUALITY ASSURANCE**
The production operations of heat exchanger material at Aurubis are certified to the highest standards: ISO/TS 16949, DIN EN ISO 9001 and environmental management standard DIN EN ISO 14001.

**SLITTING CENTERS**
Aurubis has established a network of slitting and distribution centers in Europe (Italy, Slovakia, Netherlands, United Kingdom) and Asia and cooperates with partners worldwide.

**CORROSION RESISTANCE**
The ability to withstand harsh conditions can be further improved by Aurubis’ state-of-the-art surface coatings. We offer in-house surface coatings (hot-dip tinning and electropolating) as well as additional surface coatings via service partners.

Aurubis offers a wide range of Cu+ alloys in thin gauges with antimicrobial properties for use in air conditioning (AC).

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**TIGHT TOLERANCES**
Aurubis’ capability to produce thin gauge copper strip in combination with the tightest tolerances offers customers substantial savings potential without compromising the product’s mechanical performance.

**FORMABILITY**
Uniform mechanical properties have a strong influence on further processing. Mechanical properties tailored to customers’ requirements ensure excellent formability and process optimization.

**COPPER FROM AURUBIS IS THE PREFERRED CHOICE FOR BRAZED PLATE AND FINNED TUBE HEAT EXCHANGERS DUE TO ITS:**
- Excellent thermal conductivity
- High corrosion resistance
- High pressure resistance
- Smooth brazability

**APPLICATIONS:**
- HVACR (heating, ventilation, air conditioning and refrigeration)
- Oil cooling
- Others

Aurubis offers high-performance foil and strip of the finest quality and with the tightest tolerances for industrial heat exchangers.
CuproBraze®
Perfect heat transfer

CuproBraze® technology is a manufacturing process for brazing copper/brass heat exchangers, utilizing anneal-resistant alloys developed by Aurubis.

It is an environmentally friendly technology, eliminating any fluxing stage for brazing and free of lead and other toxic chemicals.

Stronger joints combined with an increased durability, heat transfer rate and corrosion resistance – CuproBraze® ideally combines the benefits of brazed aluminum and soft-soldered brass technologies and fulfills all current and near-future requirements.

CuproBraze® is the production method of choice for off-road vehicles that must withstand an extremely challenging environment with harsh conditions, e.g. high and low temperatures, humidity and vibration loads that call for superior heat transfer together with efficient use of space and that require high durability, strength, fatigue resistance and excellent corrosion resistance.

AREAS OF APPLICATION:
» Industrial heat exchangers
» Radiators
» Heaters
» Charge air coolers (CACs)
» Oil coolers
» CPU coolers
» Inverter coolers in hybrid vehicles
» Climate control systems / cooling systems

CuproBraze® TECHNOLOGY IS PERFECT FOR HEAT TRANSFER SYSTEMS IN VEHICLES AND EQUIPMENT SUCH AS:
» On / off-highway trucks
» Mining vehicles
» Construction and agricultural equipment
» Gensets
» Industrial engines
» Locomotives
» Other off-road diesel engines
CuproBraze® — Efficient, durable, sustainable

**Thermal Performance and Size Reduction**
CuproBraze® offers a great deal of cooling capacity and high heat transfer efficiency in a compact size. For example, charge air coolers (CACs) do not need a pre-cooler. The pressure drop advantage due to thinner fin and tube materials means an improved thermal performance and/or smaller core size. Decreased air pressure drops compared to aluminum allow for a smaller fan to be used, meaning less energy consumption and consequently less fuel usage.

**Durability**
Brazed copper/brass charge air coolers (CACs) have stronger, tougher joints and can withstand inlet temperatures of more than 290 °C (554 °F) while retaining their strength and avoiding metal fatigue. CuproBraze® allows for more durable products and the use of thinner materials and space-saving designs at the same time. The relative strength advantage becomes more pronounced with increasing operating temperatures. For example, brass tube is three times stronger than aluminum tube at room temperature, but more than four times stronger at 260 °C (500 °F).

<table>
<thead>
<tr>
<th>PROPERTY / MATERIAL</th>
<th>DENSITY (g/cm³)</th>
<th>THERMAL CONDUCTIVITY (W/m°C)</th>
<th>TENSILE STRENGTH AT ROOM TEMPERATURE (MPa)</th>
<th>TENSILE STRENGTH AT ELEVATED TEMPERATURE 260 °C (500 °F) (MPa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cu fin</td>
<td>8.95</td>
<td>377</td>
<td>330</td>
<td>270</td>
</tr>
<tr>
<td>Brass tube</td>
<td>8.53</td>
<td>(120)</td>
<td>435</td>
<td>290</td>
</tr>
<tr>
<td>Aluminum fin</td>
<td>2.75</td>
<td>222</td>
<td>40</td>
<td>31</td>
</tr>
<tr>
<td>Aluminum tube</td>
<td>2.75</td>
<td>(160)</td>
<td>145</td>
<td>69</td>
</tr>
</tbody>
</table>

**Excellent Corrosion Resistance**
Based on the results from four different types of accelerated and globally recognized corrosion tests, the external corrosion resistance of CuproBraze® radiators is clearly better than that of brazed aluminum radiators and copper/brass radiators, particularly in marine conditions. High-performance coatings can be used to improve the strength and resistance against humidity, sand erosion and stone impingement on copper.

The internal surfaces of CuproBraze® heat exchangers are less sensitive to bad coolant and pitting corrosion than aluminum.

**Maintainability**
In order to minimize unplanned downtime for expensive equipment, CuproBraze® can be easily repaired with soft-soldered or common silver-bearing brazing alloys. This is a crucial parameter for commercial vehicles and gensets operating at remote locations without a functional service network.

**Environment and Emissions**
Gradually tightening emission regulations for the off-road segment, e.g. nitrogen oxides (NOx) and particulate matter (PM), in addition to the associated use of turbocharging technology call for highly efficient and durable charge air coolers (CACs) with increased heat resistance. Aurubis delivers the superior material to fulfill the corresponding demand for higher pressure and increased process temperatures. Copper and brass are 100% recyclable.

Aurubis is the world leader in copper and brass strip for heat exchanger applications, utilizing soft solder and CuproBraze® technology.
Technical Center
Your partner in the field of thermal management

To ensure its customers’ competitiveness, Aurubis is the only supplier offering a comprehensive range of training programs, theoretical instructions and customer workshops in the field of thermal management.

At its Technical Center, Aurubis has uniquely combined a brazing and technical center to continuously work on heat exchanger designs for optimal performance. We produce full-scale prototypes using these facilities.

One of the proprietary developments by the Aurubis Technical Center is the Compact Core, or splitter fin design. It enables the use of 25 micron (0.025 mm, 0.001 inch) copper strip in the fins of a heat exchanger core and does not only provide a way to reduce the weight of the cores but also to reduce the pressure drop and material cost.

THE AURUBIS TECHNICAL CENTER OFFERS CUSTOMERS VARIOUS SERVICES, E.G.:

- Wind tunnel tests
- Heat exchanger design
- Prototype heat exchangers
- Pressure pulsation tests
- Corrosion tests
- Furnace profile tracking
- New processes
- Modernization
- Problem solving
- Training programs
- Cost-cutting programs
- Plant project support

The application engineering makes Aurubis your preferred supplier.

At our Technical Center, radiators, heaters, charge air coolers (CACs) and oil coolers designed by our customers and their competitors undergo performance testing in the calorimetric test rig. With the help of our database, which includes around 2,800 tested heat exchangers, results can be compared and customer products can be benchmarked.

In a theoretical calculation application, design parameters can be changed to show the impacts on heat exchanger performance. The utilization of virtual engineering for product development enables customers to save time, material and process costs. The creation of prototypes and wind tunnel testing ensure that the re-design goals are reached.

Comparison of customer’s product and Aurubis prototype:
Wind tunnel testing enables highly accurate performance evaluation

The geometry and microstructure of the joint determine the heat flow and durability.
Aurubis is the only copper and brass supplier for the heat exchanger industry that offers comprehensive technical service and design support, assisting customers in achieving modern and cost-effective designs.

Outstanding service

COMMERCIAL SERVICES
» Leading actor on the global copper market for decades
» Integrated, strong and financially healthy long-term copper supply
» Worldwide availability due to the international sales network: Operating globally – acting locally
» Hedging advice and support
» As a leader in the recycling industry, we assist our customers in increasing economic efficiency using recycling concepts

TECHNICAL SERVICES
» Customer advisory service on all aspects of processing semi-finished products at their production site, from dimensions to surface quality
» Aurubis values precision. We achieve the tightest dimensional and property tolerances by using computer-controlled equipment designed and built in-house
» Aurubis assists customers by developing prototypes using full-scale production equipment
» The technical parameters of the strip, coil weight and inner and outer diameters are tailor-made to follow the customers’ individual production processes and the requirements of their equipment

LOGISTICS
» Our global, flexible logistics framework makes it possible for us to respond to individual requirements
» We work with our customers to optimize the supply chain
» Our production units on two continents combined with our local service centers give us a global reach
» Maximum reliability of supply and flexibility thanks to integrated copper supply

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