



**LEONI Histral®**

The cadmiumfree alternative



**The Quality Connection**

**LEONI**

# Expertise with Tradition.

World-wide there are just a few large manufacturers that could be called a technological and quality leader in the manufacture of highly developed electrical conductors – LEONI is one of them.

Our roots in wire drawing trace back to the Middle Ages. Since the beginning of the 20th century we have grown to become one of the leading suppliers in this field. LEONI has had an enduring influence on electroplating with tin, silver and nickel and particularly on multiwire drawing technology.

Today LEONI offers an extensive range of wires and stranded conductors for the cable industry and for component manufacturers.

## LEONI Quality Management

LEONI's quality management closely supports the company's strategy as partner with global presence for its customers.

Through a globally harmonised quality management system, we are able to ensure that our products and services conform to uniform quality standards.

LEONI's quality philosophy focuses its attention on the following topics:

- **Customer satisfaction**
- **Process stability**
- **Continuous improvement**

**LEONI – Quality all along the line.**

## PRODUCT RANGE

- Plain, tinned, silver plated, gold plated as well as nickel plated copper wires and stranded conductors
- Hook-up wires
- Resistance wires
- Copper flexibles
- Braided tubes
- Tinsel conductors

# LEONI – The „Global Player“

Proximity to the customer is a key element of our corporate philosophy. This is the reason why you will find LEONI close to you wherever you are. Please don't hesitate to make use of our strong distribution network.



## Our manufacturing sites in Germany, England, China and the USA:

### LEONI Draht GmbH

Treuchtlinger Strasse 20  
91781 Weissenburg  
Germany  
Phone +49 9141-918-240  
Fax +49 9141-918-101  
special-conductors@leoni.com

### LEONI Draht GmbH

Windorfer Strasse 1  
93444 Bad Koetzting  
Germany  
Phone +49 9941-404-0  
Fax +49 9941-404-40  
special-conductors@leoni.com

### LEONI Wire (Changzhou) Ltd.

No. 209 Huashan Road  
National Hi-Tech District  
Changzhou 213022  
Jiangsu, P.R. China  
Phone +86 519-510-3456  
Fax +86 519-510-4313  
lcwsales@leoni.com

### LEONI Temco Ltd.

Whimsey Industrial Estate  
Cinderford, Glos. GL14 3HZ  
England, UK  
Phone +44 1594-820-100  
Fax +44 1594-823-691  
general@leonitemco.com

### LEONI Wire Inc.

301 Griffith Road  
Chicopee, MA 01022  
USA  
Phone +1 413-593-6618  
Fax +1 413-593-6639  
info@leoniwire.com



# LEONI Histral® – The cadmiumfree alternative.

“LEONI succeeded in creating an alloy that is absolutely cadmium-free, and which is clearly superior to conventional copper cadmium in every aspect, both in terms of its electrical and its mechanical properties.”

*LEONI Histral® (LEONI High strength alloy).*

## EU prohibits the use of cadmium.

It has been known for a long time that heavy metals are toxic and damaging to our health. The European Union has thus come to the obvious conclusion and has imposed a comprehensive ban.

Since July 2003, the EU End-of-Life Vehicle Directive (“Directive 2000/53/EC of the European Parliament and of the Council of 18 September 2000 on end-of-life vehicles”) stipulates that vehicles with a gross weight of up to 3.5 tons may no longer contain any heavy metals. These include lead, mercury, chromium VI and cadmium.

A further directive (“Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment”) extends the ban on heavy metal to electrical and electronic equipment with effect from 1 July 2006. Such equipment includes particularly major and small household appliances, consumer electronics equipment, lighting fixtures, electrical tools and electric toys.

**The use of cadmium and alloys with cadmium content, i.e. also of copper cadmium, will thus finally be prohibited in this areas.**

## LEONI Histral®

LEONI as a leading manufacturer of copper wires and strands is one step ahead every time. We want to supply best technology. Therefore we developed a cadmium-free alternative which performs high mechanical and electrical properties in accordance with our environmental responsibility. So we help our customers to solve technical problems and avoid any environmental conflicts as well.

LEONI Histral® is a copper based alloy with the following components

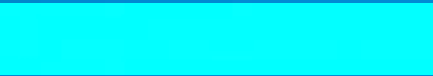
- Silver (Ag)
- Titanium (Ti)
- Silicon (Si)
- Iron (Fe)
- Chromium (Cr)
- Phosphor (P)

LEONI Histral® is also free of hazardous substances and thus fulfills the requirements of the EU-end-of-life-vehicle directive and of the EU directive concerning use of certain hazardous substances in electrical and electronic equipment. Besides excellent high tensile strength and long flexlife, the product’s very good temperature resistance is another of its outstanding features.

**LEONI Histral meets all requirements of ASTM B 624.**



# Histral®



LEONI Histral® is a registered trademark of LEONI Draht GmbH.

#### Supply range

LEONI Histral® is currently available as:

- Single wires
- Strands
- Braids
- Tinsel

**These products are manufactured in hard and soft condition, bare, silver and nickel plated.**

**Constructions and dimensions on request.**

# LEONI Histral® in application.

## LEONI Histral® key applications:

- aerospace (civilian and military)
- defense
- speciality electronics
- medical engineering
- mass transit
- automotive
- automation and robotics

and other high performance applications ...



# The product properties speak for themselves.

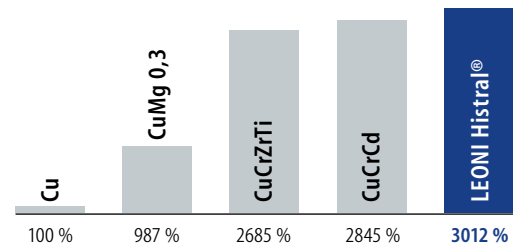
LEONI Histral® achieves all requirements of the ASTM B 624 and exceeds the quality needs of the ASTM B 470-02 by far✘.

## Key advantages:

- **High tensile strength**
  - in soft condition **Rm > 415 N/mm<sup>2</sup>**
  - Elongation > 7%**
  - in hard condition **Rm > 700 N/mm<sup>2</sup>**
- **High Conductivity**
  - in soft condition **> 80 % IACS**
  - in hard condition **> 70 % IACS**
- **Good solderability**
- **High temperature resistance**  
(retains tensile strength up to 400 °C)
- **Good corrosion resistance**

## Flexlife in comparison with copper (in %)

reference construction: 19x0.127 mm  
Test standard: ASTM B 470-02



LEONI Histral® combines high conductivity with optimal flexlife behaviour. These characteristics enable long term usage in moved cables too.

✘ *This has been proved using the two expertises E 4.076 and E 4.337 of an independent, accredited and renowned test laboratory (LGA Nuremberg).*

**LEONI Draht GmbH**  
Business Unit Special Conductors

Treuchtlinger Strasse 20  
91781 Weissenburg  
Germany  
Phone +49 (0)9141-918-205  
Fax +49 (0)9141-918-101  
E-mail [special-conductors@leoni.com](mailto:special-conductors@leoni.com)  
[www.leoni-special-conductors.com](http://www.leoni-special-conductors.com)