

# CU-OFE <sup>(1)</sup>

Réf. ASTM n°UNS : C10100

### Indicative Chemical composition

Cu : > 99,99 %

### TYPICAL APPLICATIONS

|              |  |
|--------------|--|
| Electrical : | Special application such as glass/metal sealing in vacuum tubes, electrical equipments used in reducing atmosphere at high temperature,... |
| Mechanical : | Applications requiring a welding or heating operation in a reducing atmosphere   |

### MECHANICAL CHARACTERISTICS

| Temper H : |    | H 040 | H 065 | H 090  | H 110 |
|------------|----|-------|-------|--------|-------|
| Hardness   | HV | 40-65 | 65-95 | 90-110 | ≥ 110 |

| Temper R :                    |              | R 220   | R 240   | R 290   | R 360 |
|-------------------------------|--------------|---------|---------|---------|-------|
| Tensile Strength              | TS (MPa)     | 220-260 | 240-300 | 290-360 | ≥ 360 |
| Yield Strength <sup>(2)</sup> | YS 0,2 (MPa) | ≤ 140   | ≥ 180   | ≥ 250   | ≥ 320 |
| Elongation <sup>(3)</sup>     | E50 (%)      | ≥ 33    | ≥ 8     | ≥ 4     | ≥ 2   |

### BENDING RADIUS FOLLOWING THE THICKNESS RELATED TO TEMPER ABOVE

| Radius of Bending <sup>(4)</sup> | 90° Good Way | 0 × t | 0 × t | 0 × t   | <sup>(5)</sup> |
|----------------------------------|--------------|-------|-------|---------|----------------|
|                                  | 90° Bad Way  | 0 × t | 0 × t | 0,5 × t | <sup>(5)</sup> |

### MECHANICAL CHARACTERISTICS FOLLOWING OLD STANDARD

| Temper of old NF Standard  |              | 0       | H 11    | H 12    | H 13    | H 14    | H 14,2         |
|----------------------------|--------------|---------|---------|---------|---------|---------|----------------|
| Hardness                   | HV           | 46-65   | 60-85   | 75-105  | 90-110  | 105-125 | ≥ 110          |
| Tensile Strength           | TS (MPa)     | 200-260 | 230-280 | 260-320 | 290-350 | 310-400 | ≥ 325          |
| Yield Strength             | YS 0,2 (MPa) | ≤ 120   | ≥ 125   | ≥ 250   | ≥ 275   | ≥ 300   | ≥ 300          |
| Elongation                 | E50 (%)      | 25      | 20      | 10      | 4       | 1       | —              |
| Bend Radius <sup>(4)</sup> | 90° Good Way | 0 × t   | 0 × t   | 0 × t   | 0 × t   | 0,5 × t | <sup>(5)</sup> |
|                            | 90° Bad Way  | 0 × t   | 0 × t   | 0 × t   | 0,5 × t | 1 × t   | <sup>(5)</sup> |

### PHYSICAL CHARACTERISTICS (at 20°C) <sup>(6)</sup>

| Density (Kg/dm <sup>3</sup> ) | Electrical Conductivity (% IA CS) | Electrical Resistivity (μΩ,cm) | Thermal Conductivity (W/m,K) | Modulus of Elasticity (kN/nm <sup>2</sup> ) | Thermal Expansion (10-6/K) | Melting Temperature (°C) | Modulus of Shearing (kN/mm <sup>2</sup> ) |
|-------------------------------|-----------------------------------|--------------------------------|------------------------------|---|----------------------------|--------------------------|---|
| 8,9                           | > 100                             | < 1,72                         | 394                          | 120   | 16,8                       | 1083                     | 45  |

<sup>(1)</sup> Old french designation: Cu-c2

<sup>(2)</sup> Indicative values

<sup>(3)</sup> For thickness < 2,5 mm

<sup>(4)</sup> Bending radius is expressed as a function of thickness (t) of the strip

<sup>(5)</sup> Bending possible to be defined with Griset

<sup>(6)</sup> values for annealed temper

This document has been prepared for informational purposes and the values are indicative. Our responsibility can not be undertaken without a formal contract review. Our commercial and technical services remain at your service to study the proper matching of your needs in adequacy with physico-mechanical properties of our material.