



# EXERA® PT/IR ALLOY MEDICAL WIRE

## DATASHEET

Exera® platinum iridium alloys (Exera® Pt10Ir and Exera® Pt20Ir) are precious metal medical wires that combine excellent biocompatible properties with excellent radiopacity, moderate strength and good formability. These alloys can be provided in an annealed, stress relieved or cold worked condition depending on the post processing requirements.

For medical use, Exera® Pt10Ir and Exera® Pt20Ir medical wire is delivered with the highest surface finish (Medical class) in order to maximize the fatigue strength which is critical in implant devices such as lead wires for cochlear implants and implant electrodes. Stress relieved conditioned wire is also often required when straightness is critical to the application.

### STANDARDS

- ASTM: B684

### APPLICATIONS

Exera® Pt10Ir and Exera® Pt20Ir can be used for cochlear implants, stimulated electrode implants, sensors for continuous glucose monitors and neurological stimulation devices.

These wires can be provided in as drawn condition, annealed or coated with a suitable polymer or PTFE coating.

Note : PtW wire can be supplied

### CHEMICAL COMPOSITION (NOMINAL) %

|               | Pt | Ir |
|---------------|----|----|
| Exera® Pt10Ir | 90 | 10 |
| Exera® Pt20Ir | 80 | 20 |

### FORMS OF SUPPLY

Exera® Pt10Ir and Exera® Pt20Ir medical wire can be supplied as follows:

#### Size range :

- Round wire : 0.018 to 0.254 mm (0.0007 to 0.010 in.)

### MECHANICAL PROPERTIES

#### Round wire

| Exera® | Condition | Tensile strength R <sub>m</sub> |     | Elongation A,<br>% | Hardness |
|--------|-----------|---------------------------------|-----|--------------------|----------|
|        |           | MPa                             | ksi |                    |          |
|        |           | min                             | min | in 4D              | typical  |

## Round wire

| Exera® | Condition       | Tensile strength R <sub>m</sub> |     | Elongation A, | Hardness |
|--------|-----------------|---------------------------------|-----|---------------|----------|
|        |                 | MPa                             | ksi | %             |          |
|        |                 | min                             | min | in 4D         |          |
| Pt10lr | Annealed        | 380                             | 55  | 20            | 44 HRA   |
| Pt10lr | Cold worked     | 896                             | 130 | 2             | 55 HRA   |
| Pt10lr | Stress relieved | 586                             | 85  | 3             | 50 HRA   |
| Pt20lr | Annealed        | 690                             | 100 | 20            | 57 HRA   |
| Pt20lr | Cold worked     | 1000                            | 145 | 2             | 64 HRA   |
| Pt20lr | Stress relieved | 827                             | 120 | 3             | 60 HRA   |

## PHYSICAL PROPERTIES

| Property  | Exera® Pt10lr          | Exera® Pt20lr          |
|---|------------------------|------------------------|
| Density ( 20 °C)                                | 21.5 g/cm <sup>3</sup> | 21.7 g/cm <sup>3</sup> |
| annealed  | 202 MPa                | -                      |
| work-hardened                                   | 219 MPa                | 233 MPa                |
| Modulus of elasticity, x10 <sup>3</sup> (20°C)  |                        |                        |
| Specific heat capacity (20°C)                   | 485 J/(kg °C)          | 0.11 Btu/(lb °F)       |
| Thermal conductivity (20°C)                     | 14W/(m °C)             | 8 Btu/(lb °F)          |
| Thermal expansion, x10 <sup>-6</sup> (30-100°C) | 16.5 per °C            | 9.5 per °F             |

Disclaimer: Sandvik is not providing any products or services that are intended or may be construed to be recommending or otherwise advising on, in any manner, the design, suitability, appropriateness or effectiveness, from a medical/biological/safety perspective, of any medical material, instrument and/or medical device.