

COATED WIRE

ABSTRACT

A wire comprising a wire core with a surface, the wire core having a coating layer superimposed on its surface, wherein the wire core itself consists of:

(a) pure silver consisting of (a1) silver in an amount in the range of from 99.99 to 100 wt.-% and (a2) further components in a total amount of from 0 to 100 wt.-ppm

or

(b) doped silver consisting of (b1) silver in an amount in the range of from 99.69 to 99.987 wt.-%,

(b2) at least one doping element selected from the group consisting of calcium, nickel, platinum, copper, rhodium and ruthenium, in a total amount of from 30 to 3000 wt.-ppm and (b3) further components in a total amount of from 0 to 100 wt.-ppm

or

(c) a silver alloy consisting of (c1) silver in an amount in the range of from 95.99 to 99.49 wt.-%,

(c2) palladium in an amount in the range of from 0.5 to 4 wt.-% and (c3) further components in a total amount of from 0 to 100 wt.-ppm

or

(d) a silver alloy consisting of (d1) silver in an amount in the range of from 93.99 to 99.39 wt.-%,

(d2) palladium in an amount in the range of from 0.5 to 4 wt.-%, (d3) gold in an amount in the

range of from 0.1 to 2 wt.-%, and (d4) further components in a total amount of from 0 to 100 wt.-ppm

or

(e) a doped silver alloy consisting of (e1) silver in an amount in the range of from 93.69 to

99.387 wt.-%, (e2) palladium in an amount in the range of from 0.5 to 4 wt.-%, (e3) gold in an

amount in the range of from 0.1 to 2 wt.-%, (e4) at least one doping element selected from the group consisting of calcium, nickel, platinum, copper, rhodium and ruthenium in a total amount of from 30 to 3000 wt.-ppm, and (e5) further components in a total amount of from 0 to 100 wt.-ppm,

wherein the individual amount of any further component is less than 30 wt.-ppm,

wherein the individual amount of any doping element is at least 30 wt.-ppm,

wherein all amounts in wt.-% and wt.-ppm are based on the total weight of the core, and

wherein the coating layer is a 1 to 1000 nm thick single-layer of gold or palladium or a double-layer comprised of a 1 to 100 nm thick inner layer of nickel or palladium and an adjacent 1 to 200 nm thick outer layer of gold.

FIGURE 2