



AgosiRefining

At Agosi, your material is in good hands

Our recycling management returns your scrap material to the cycle of your precious metals.

We process the material for you cost-effectively using state-of-the-art processes. You receive the value in the form you prefer: as fine metal or semi-finished products, as credit on your precious metals weight account, or as the equivalent in cash transferred to your bank account.

Agosi thereby completes the cycle with a fully comprehensive service package: we offer all services for the entire cycle of precious metals - a reliable single source.



Information given about our products, plants, equipment and processes is based on extensive research and experience in technical applications. This information is accurate to the best of our knowledge but is provided, whether given orally or in writing, without any liability on our part over and above that relating to each individual contract and we reserve the right to make technical modifications in the course of product development. Furthermore, our technical applications support service is available for further consultation and co-operation in solving any problems regarding production or technical applications.

This does not, however, release the clients from their obligation to check our specifications and recommendations before using them for their own purposes. This applies in particular to international deliveries, also with respect to third party proprietary rights as well as to any applications and procedures which have not been clearly specified by us in writing. In the event of claims our liability is limited to that laid down in our current Terms and Conditions of Delivery, Processing and Payment.

Agosi AG is part of Umicore, Brussels, a global materials technology group. It focuses on application areas where its expertise in materials science, chemistry and metallurgy makes a real difference. Umicore's overriding goal of sustainable value creation is based on an ambition to develop, produce and recycle materials in a way that fulfils its mission: materials for a better life. Its social commitment and innovative environmental approach have earned Umicore worldwide recognition; the corporation is among „World's Most Ethical Companies“ (Ethisphere 2012). www.umicore.com

With its subsidiaries in Austria and Thailand, North- and South America, Agosi represents the core of the Umicore Business Unit Jewelry & Industrial Metals. It provides a closed-loop concept of precious metals services, products and refining for the precious metals consuming industries. Its Pforzheim site is RJC-CoC certified and can offer responsibly produced CoC-products. Agosi is also accredited according to the Responsible Gold and Responsible Silver Guidance by the London Bullion Market Association (LBMA). Certificates are available online www.agosi.de

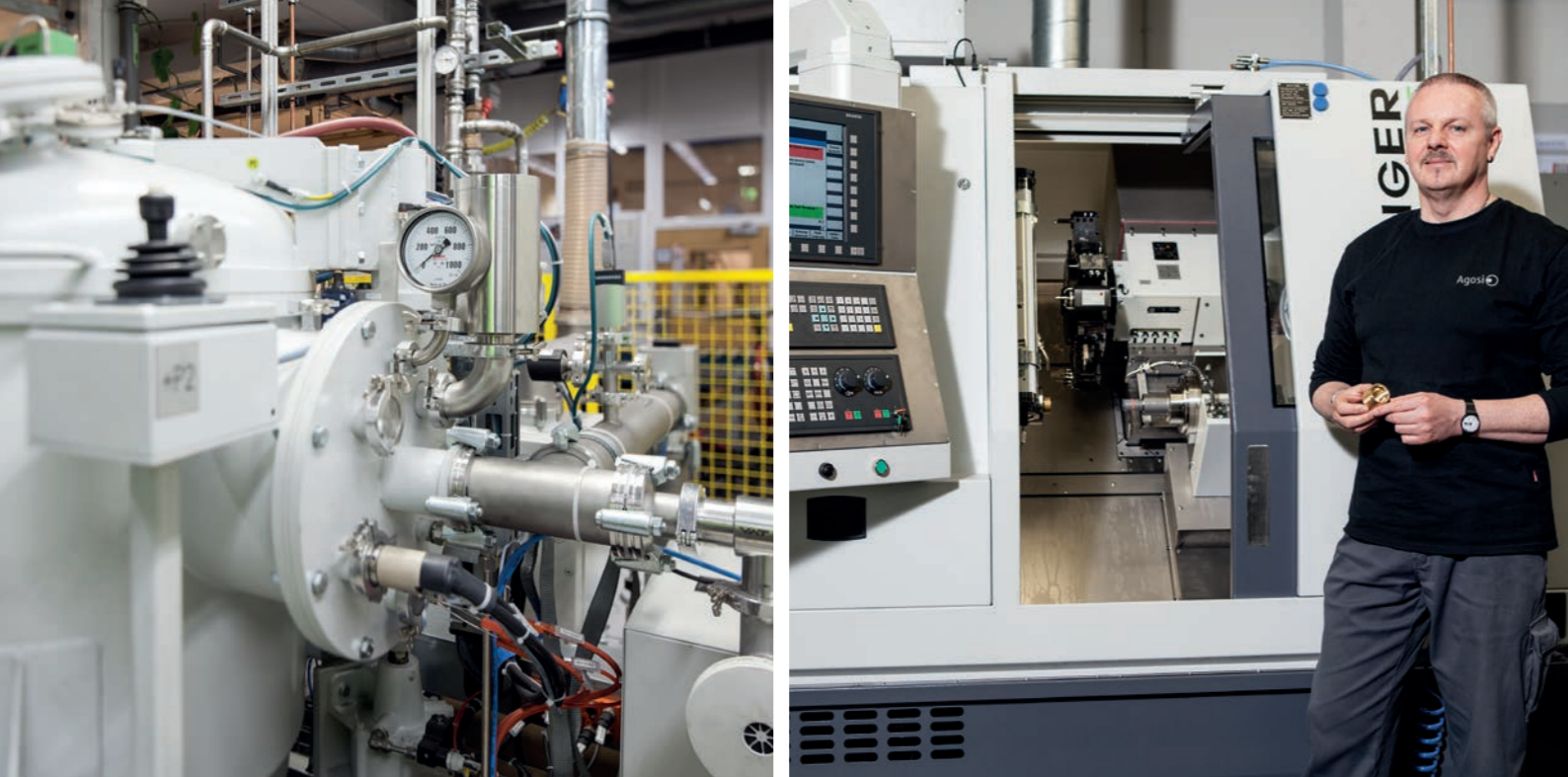
The current General Terms and Conditions apply.

Printed on 100% recycled paper



AgosiLifestyle

Alloys and semi-finished products for the jewellery and watch industry



Listen. Understand. Find solutions.

We like to be in close, personal contact with our customers so that we can get a clear picture of where our products are being used. This puts us in a position to offer a wide range of products, both in standard and in special designs. Our products are always manufactured to conform to your requirements.

Agosi sheets, tubes and wires are manufactured with the same degree of diligence as a CNC precision turned part from our production facility. As our customers use our semi-finished products for a variety of applications, the alloys must remain consistent in quality and it is our constant quality control and material analysis that guarantee the reliability of the functional properties.

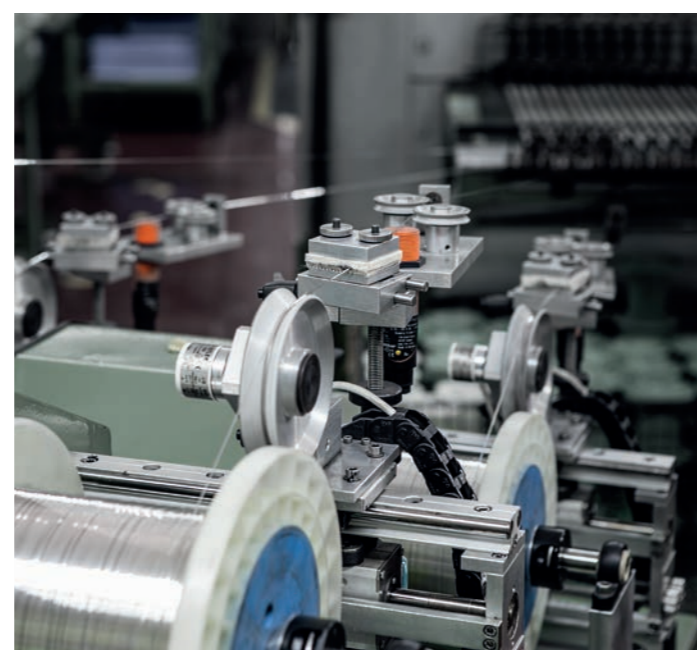
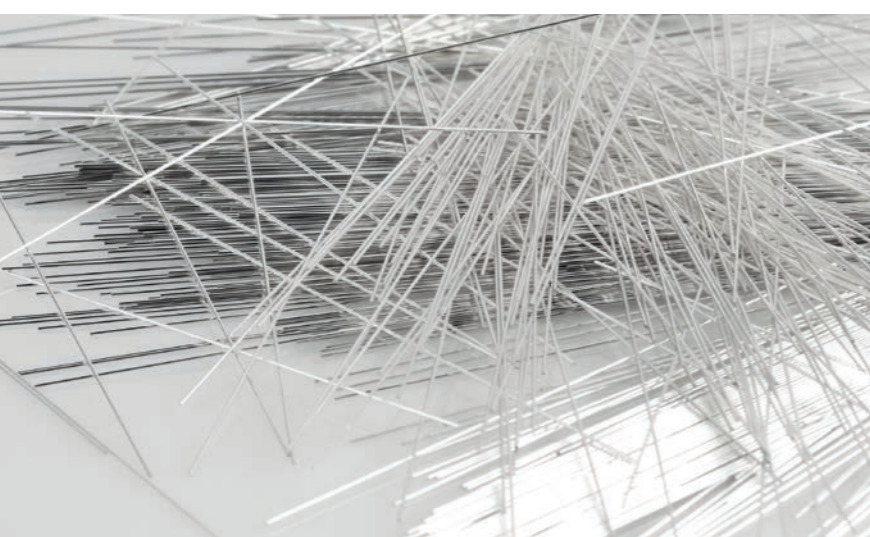
Agosi's CoC-gold is conflict-free

There is a special focus on fine gold, especially in the conflict-stricken countries around the globe as its mining can be damaging to the environment.

As we deal with precious metals from secondary sources and as a member of the Responsible Jewellery Council, London, Agosi is committed to working responsibly with these materials, paying equal attention to ethical and environmental aspects. Agosi is the first precious metals refinery in Germany to be given RJC Certification, having successfully completed the stringent certification process. In addition, the „CoC Chain of Custody“ Certificate attests to a conflict-free supply chain for CoC-gold - it verifies that Agosi CoC-gold does not come from conflict regions.

Use this brochure as a source for new ideas. Our competent team will be happy to help you with your projects and your questions.

Contact:
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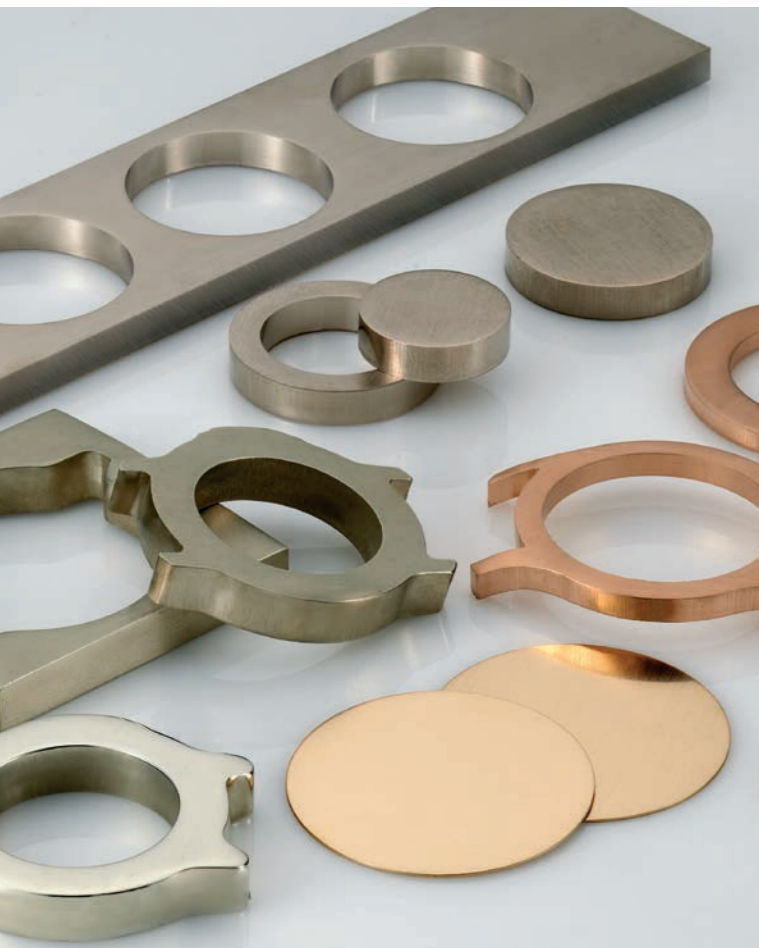


AgosiSheets AgosiStrips AgosiPlates AgosiStampingParts

The basis for brilliant results

Sheets and strips with excellent deep drawing characteristics for simple and efficient processing into high-quality end products, available with a brush finish or, by special request, with bright-rolled surfaces. Required hardness and dimension tolerances are monitored by our laboratories. Be it sheets, strips or plates - only the best quality ensures efficient processing further down the line.

- » In-house tool design based on your drawings for stamped parts
- » Latest stamping technology for a clean cut and the closest of tolerances
- » Highest product purity and quality and a wide range of standard materials



Material

MATERIAL/ALLOY	colour	density g/cm ³	hardness HV 5 recrystallised, annealed
333/75	deep yellow	10.9	105
375/27 S	red	11.3	100
376/60	deep yellow	11.0	110
585/40	red	13.1	130
585/90 S	deep yellow	13.0	130
585/100 S	rosé	13.2	140
585/200 S	yellow	13.6	175
585/260 S	yellow	13.7	160
585/300	light yellow	14.0	140
585/340	greenish yellow	13.8	120
585/415 S	pale yellow	14.3	40
750/5 S	red	15.1	160
750/20 S	red	15.0	150
750/40	red (5N)	15.2	160
750/90	rosé (4N)	15.3	140
750/130	deep yellow (3N)	15.4	140
750/150	light yellow (2N)	15.6	130
917/ - S	rosé	17.6	90
917/53 S	yellow	17.9	55
375 S3 S	white 1,5% Pd	12.3	105
585 S	white 10% Pd	14.5	90
585 S2	white 14% Pd	14.4	130
585 M	white 19% Pd	14.5	160
750 S	white 10% Pd	16.0	100
750 A S	white 10% Pd	15.7	160
750 U	white 12.5% Pd	16.0	130
750 CHC	white 13% Pd	15.7	160
750 S2	white 14% Pd	16.0	120
750 M	white 16% Pd	15.9	140
750 M1	white 21% Pd	16.4	95
750 H1 S*	white 10% Ni	14.8	230
750 H8	white 5% Ni	14.8	130
PdAg 950/20	grey	11.8	100
PtRu 600	grey	13.7	180
PtW 950	grey	21.3	150
PtRu 950	grey	20.7	130
PtPlus 953	grey	19.9	160
PtCu 953	grey	20.1	110
PtCo 950	grey	20.1	130
Ag 925	white	10.4	70
Ag 935	white	10.4	70
Ag 950 S	white	10.4	70
Ag 970 S	white	10.4	55
fine silver Ag 4N		10.5	35
fine silver Ag 3N7		10.5	35
fine gold Au 99.99%		19.3	28
platinum Pt 3N5		21.5	48
palladium Pd 3N5		12.0	50

S = special alloy

* = alloy contains nickel and does not conform to standard DIN EN 1811:2011 on leaving factory

Further alloys on request.

Surface finish depends on product form ordered: bright-rolled, rolled or brush finish.

Product

PRODUCTS	thickness mm	width mm	length mm	tolerances
strips Au-, Pt-, Pd materials	0.1 - 2.0	3.0 - 100.0	continuous	DIN EN 1652
strips Ag-materials	0.5 - 2.5 0.1 - 2.0	max. 350 max. 100		DIN EN 1652
pre-rolled strips Ag-materials	2.0 - 4.0	max. 350		on request
cut sheet sections	0.1 - ca. 15.0	according to customer specification	according to customer specification	DIN EN 1652
plates Ag 935 and Ag 925	0.3 - 3.0	500 oversize dimensions on request	1000	DIN EN 1652
cut plate sections Ag 935 and Ag 925	0.3 - 3.0	< 500	< 1000	DIN EN 1652
pre-rolled sheets	1.5 - 8.0	360 (ca.)	1000	width ± 5 mm

Oversize dimensions and further materials on request.

Your benefits

- » trouble-free processing into high-quality end products
- » prompt delivery of a comprehensive range of cut sheet sections and standard sheets from stock
- » very little polishing required thanks to minimal peak-to-valley height (on bright rolled surfaces)
- » maintaining exact tolerances guarantees accurate dimensions
- » "endless" strips add to the efficiency of your processing machinery

AgosiWires | Rods | Profiles

Keep a high profile - with high-class end products

Whether annealed or hardened, round or D-section, or in a variety of other cross-sections - our wires, rods and profiles are an important prerequisite for high-quality end products.

Material

MATERIAL/ALLOY	colour	density g/cm ³	hardness HV 5 recrystallised, annealed
333/75	deep yellow	10.9	105
375/27	red	11.3	100
376/60	deep yellow	11.0	110
585/40	red	13.1	130
585/90	deep yellow	13.0	130
585/100	rosé	13.2	140
585/200	yellow	13.6	175
585/260	yellow	13.7	160
585/300	light yellow	14.0	140
585/340	greenish yellow	13.8	120
585/415	pale yellow	14.3	40
750/5	red	15.1	160
750/20	red	15.0	150
750/40	red (5N)	15.2	160
750/90	rosé (4N)	15.3	140
750/130	deep yellow (3N)	15.4	140
750/150	light yellow (2N)	15.6	130
917/-	rosé	17.6	90
917/53	yellow	17.9	55
375 S3	white 1,5% Pd	12.3	105
585 S	white 10% Pd	14.5	90
585 S2	white 14% Pd	14.4	130
585 M	white 19% Pd	14.5	160
590 H1	white 10% Ni	12.8	150
750 S	white 10% Pd	16.0	100
750 A	white 10% Pd	15.7	160
750 U	white 12.5% Pd	16.0	130
750 CHC	white 13% Pd	15.7	160
750 S2	white 14% Pd	16.0	120
750 M	white 16% Pd	15.9	140
750 M1	white 21% Pd	16.4	95
750 H1	white 10% Ni	14.8	230
750 H8	white 5% Ni	14.8	130
PdAg 950/20	grey	11.8	100
PtRu 600	grey	13.7	180
PtIr 800/200	grey	21.7	190
PtW 950	grey	21.3	150
PtRu 950	grey	20.7	130
PtPlus 953	grey	19.9	160
PtCu 953	grey	20.1	110
PtCo 950	grey	20.1	130

S = special alloy
 * = alloy contains nickel and does not conform to standard DIN EN 1811:2011 on leaving factory
 Further alloys on request / Quality, centricity, straightness as agreed

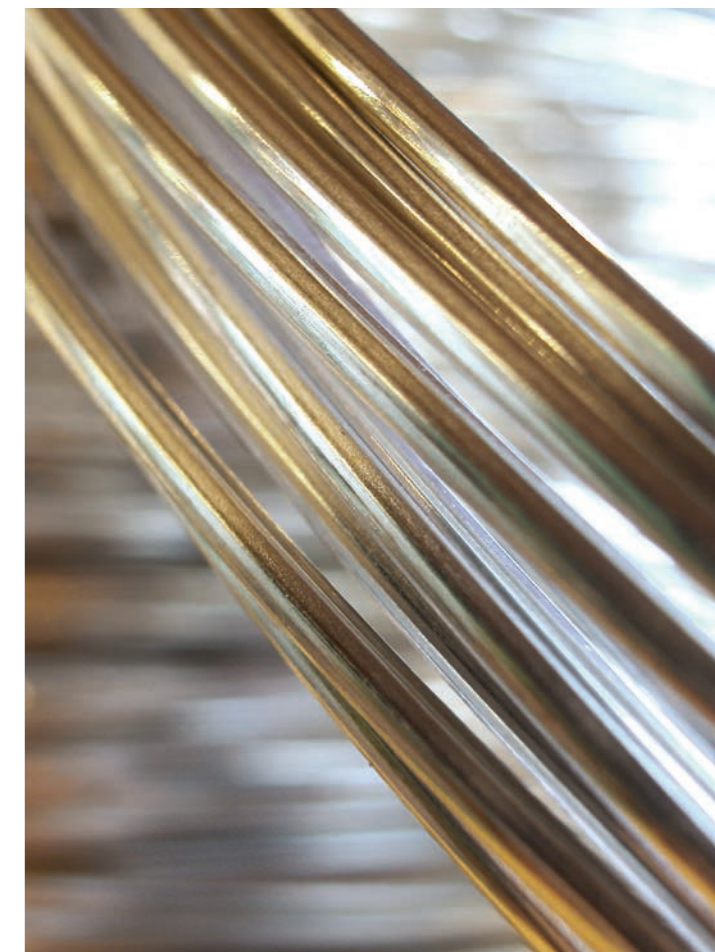
MATERIAL/ALLOY	colour	density g/cm ³	hardness HV 5 recrystallised, annealed
Ag 925	white	10.4	70
Ag 935	white	10.4	70
Ag 950	white	10.4	70
Ag 970	white	10.4	55
fine silver Ag 4N		10.5	35
fine silver Ag 3N7		10.5	35
fine gold Au 99.99%		19.3	28
platinum Pt 3N5		21.5	48
palladium Pd 3N5		12.0	50

S = special alloy
 Further alloys on request / Quality, centricity, straightness as agreed

Product

PRODUCT	diameter/dimension mm	tolerances mm	on request	delivery form
wires, round	0.1 - 0.5 > 0.5 - 3.0 > 3.0 - 6.0	+0/-0.03 +0/-0.04 +0/-0.05	ø 0.05 - 0.1 and > 6 (up to max. 40 mm)	0.05 - 0.8 mm on spools 0.81 - 6.0 mm in rings > 6.0 mm as rods annealed or hardened
rods, round	0.5 - 3.0 > 3.0 - 6.0 > 6.0 - 10.0 > 10.0 - 18.0 > 18.0 - 20.0 > 20.0 - 30.0	+0 / -0.04 +0 / -0.05 +0 / -0.06 +0 / -0.07 +0 / -0.08 ± 0.2	ø > 30	drawn straight length standard 2 m hardened l-max 1.5 m
profiles acc. to customer specifications	1.0 - 3.0 > 3.0 - 6.0	+0 / -0.04 +0 / -0.05	dimensions < 1 mm and > 6 mm	proportion width/height = 2 to 1, other proportions on request annealed
wires, square	width 1.0 - 3.0 > 3.0 - 6.0 > 6.0 - 10.0 > 10.0 - 18.0 height 0.2 - 3.0 > 3.0 - 6.0 > 6.0 - 10.0 > 10.0 - 18.0	± 0.02 ± 0.03 ± 0.05 ± 0.1 ± 0.02 ± 0.03 ± 0.05 ± 0.1	dimensions > 18 mm and height < 1/2 width	on spools, annealed straightened as rod height ≥ 1/2 width, hard
rolled wire	2.0 / 3.0 4.0 / 5.0 / 6.0 8.0		diameter > 8 mm and intermediate diameters	in rings, annealed

Wires in special cross-sections on request.
 Billets/continuous cast material: all dimensions and properties on request.



AgosiTubes

Precision pays

Our product range would not be complete without high-quality tubes. The precision and care exercised during their manufacture ensure that they are the right choice wherever accuracy and reliability are required. Whether drawn or hammered, seamless tubes with precision measurements and exemplary characteristics are ideal for each application, for industrial production as well as in the goldsmith's workshop.

Material

MATERIAL/ALLOY	colour	density g/cm ³	hardness HV 5 recrystallised, annealed
333/75	deep yellow	10.9	105
375/27 S	red	11.3	100
376/60	deep yellow	11.0	110
585/40	red	13.1	130
585/90 S	deep yellow	13.0	130
585/100 S	rosé	13.2	140
585/200 S	yellow	13.6	175
585/260	yellow	13.7	160
585/300 S	light yellow	14.0	140
585/340 S	greenish yellow	13.8	120
585/415 S	pale yellow	14.3	40
750/5 S	red	15.1	160
750/20	red	15.0	150
750/40	red (5N)	15.2	160
750/90 S	rosé (4N)	15.3	140
750/130	yellow (3N)	15.4	140
750/150	light yellow (2N)	15.6	130
917/53 S	yellow	17.9	55
375 S3 S	white 1.5% Pd	12.3	105
585 S S	white 10% Pd	14.5	90
585 S2	white 14% Pd	14.4	130
585 M	white 19% Pd	14.5	160
590 H1 S*	white 10% Ni	12.8	150
750 S	white 10% Pd	16.0	100
750 U	white 12.5% Pd	16.0	130
750 CHC	white 13% Pd	15.7	160
750 M	white 16% Pd	15.9	140
750 M1	white 21% Pd	16.4	95
750 H1 S*	white 10% Ni	14.8	230
750 H8 S	white 5% Ni	14.8	130
PdAg 950/20	grey	11.8	100
PtRu 600	grey	13.7	180
PtW 950	grey	21.3	150
PtRu 950	grey	20.7	130
PtPlus 953	grey	19.9	160
PtCo 950 S	grey	20.1	130
PtCu 953 S	grey	20.1	110
Ag 925 S	white	10.4	70
Ag 935	white	10.4	70
Ag 950	white	10.4	70
Ag 970	white	10.4	55
fine silver Ag 4N		10.5	35
fine silver Ag 3N7		10.5	35

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Further alloys on request.

Product

PRODUCT	Aø outer diameter	Aø tolerance	wall thickness	tolerances
round tubes, seamless	0.9 - 6.0	±0.05 mm	0.175 - 0.5 mm	**±0.03 mm
			0.5 - 1.0 mm	**±0.05 mm
			>1.0 - 2.0 mm	**±0.07 mm
	6.0 - 10.0	± 0.06 mm	0.2 - 0.5 mm	**±0.05 mm
			0.5 - 1.0 mm	**±0.07 mm
			>1.0 - 2.0 mm	**±0.10 mm
	10.0 - 18.0	± 0.08 mm	0.3 - 1.0 mm	**±0.03 mm
			>1.0 - 2.0 mm	**±0.05 mm
			>2.0 - 4.0 mm	**±0.07 mm
	18.0 - 20.0	± 0.10 mm	0.3 - 1.0 mm	±0.05 mm
			>1.0 - 2.0 mm	±0.07 mm
			>2.0 - 4.0 mm	±0.10 mm
	**20.0 - 40.0	± 0.10 mm	2.0 - 6.0 mm	**±0.10 mm

** Where the inner diameter = 2 x wall thickness, the tolerance for the wall thickness changes to approx. ± 0.05 mm depending on wall thickness

Tubes with ratio 2 x wall thickness > inner diameter available following agreement

*** Material with inner diameter > 20 mm available following agreement

	standard	on request
Delivery hardness	hard	± 20HV
Straightness	Ag: drawn straight Au: drawn straight	< 1 mm/m
Material length	0.5 m / 1 m ± 10%	± 5 mm
Weight	< 0.5 kg on request / tolerance ±10%	

Your benefits

- » particularly suitable for CNC manufacturing
- » best processing characteristics
- » optimum inner and outer surfaces require little polishing
- » individual cross-sections and special alloys on request

AgosiTurnedParts | AgosiMilledParts

Where quality counts

Our highly qualified employees use the latest lathes and milling machines to develop and produce precision parts based on customer drawings, fulfilling the very highest quality demands.

Our range of machinery includes

- » CNC lathe from 1-220 mm
- » fixed headstock automatic lathes
- » sliding headstock automatic lathe
- » 3- and 5-axis milling machines

Materials

See tables:

AgosiSheets|Wires|Tubes

Your benefits

- » high level of accuracy
- » close tolerances
- » improved surface quality
- » savings in material

Our production facilities are designed for small-batch and large-scale production and process all common alloys.

Areas of application: jewellery and watch industry, writing utensil industry.

