Morgan Advanced Materials

HALDENWANGER

→ Laboratory ceramics

morgantechnicalceramics.com

Contents

All products listed in this catalogue are in accordance with DIN 40680 – subject to inadvertent modifications, errors and omissions.
Special sizes and custom designs available on request.

What is Laboratory Porcelain?

Laboratory Porcelain results from thousands of years of systematic development of porcelain itself – an impervious silicate material that is made by firing a mixture of natural minerals such as china clay, quartz and feldspar.

The properties of Haldenwanger Laboratory Porcelain correspond to the DIN EN 60672 standard, group 100, type 110. Temperature stability and resistance to physical and chemical attack are important characteristics. Consistant quality is ensured through strict control of raw materials and production. Laboratory Porcelain is a potassium aluminium silicate. Under the microscope, a transparent cut shows that Haldenwanger Laboratory Porcelain is a material in which scorched and prismatic mullite crystals ($3Al_2O_3 \cdot 2SiO_2$) are embedded in a glass matrix. As a silicate, Haldenwanger Laboratory Porcelain is very resistant to all types of acids, even at boiling temperatures, with the exception of hydrofluoric acid.

Although less resistant to warm and highly concentrated alkalis than to acids, it still performs better than glass. Molten alkali salts attack Laboratory Porcelain. Its resistance to high temperatures comes from the mullite structure of the material. Although its glass phase softens at very high temperatures, the mullite structure has a stabilising effect and prevents deformations. Therefore, unglazed Laboratory Porcelain can be used at temperatures of up to 1350°C according to the application. Glazed Laboratory Porcelain can be used at temperatures of up to 1000°C. After that, the glaze begins to soften.

Haldenwanger has been manufacturing Laboratory Porcelain for more than 150 years and development is still ongoing. New market demands in terms of form and quality mean continual custom. Many standard products must comply with a range of different national norms. Laboratory Porcelain is mainly used in industrial laboratories and research institutes worldwide as an aid in chemical analyses and preparation work.

Why should I use Haldenwanger Laboratory Porcelain?

Quality and resistance for more than 150 years

Despite our long history, we have taken care to maintain the original size and shape of our products. New challenges in an ever-growing market have led us to new developments. Ensuring the best refractoriness and resistance to physical and chemical attack has always been of the utmost importance to us.

We guarantee consistently high standards by performing quality checks at all levels, e.g. on raw materials, in the forming process and during final product inspection. To this end, we have established our own state-of-the-art testing and development centre as well as a pilot plant.

Our products are continuously tested to comply with DIN 12851 regulations. This comprehensive and strict DIN standard specifies the requirements and test procedures for laboratory equipment made of hard porcelain (C110).

→ Imperviousness of the ceramic body

No single area of any sample may show:

- any kind of discoloration in glaze-free areas
- penetration of dye between the ceramic body and glazing

→ Dense glazing (no pores, no cracks)

No single sample may show trajectories of excess glazing slurry or any discoloration along the edges.

→ Thermal shock resistance

No single sample may fail by fracture and no crazing may appear after quenching.

→ Refractoriness of the glazing up to 900°C

Glazed pieces may not stick together at 900°C.

→ No weight change during annealing

No single sample may show a weight change exceeding 0.1 mg per 10 g material.

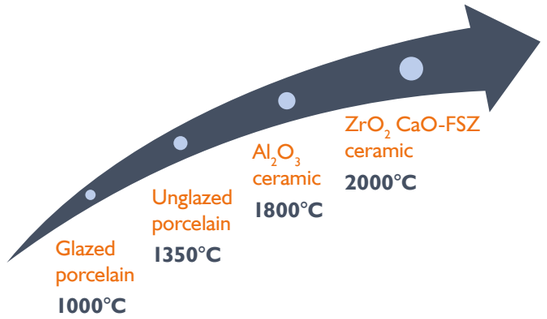
→ Chemical resistance to hydrochloric acid, soda and caustic soda

No single sample may show a weight loss of more than:

- 1 mg per dm^2 of the wetted inner surface area (hydrochloric acid)
- 10 mg per dm^2 of the wetted inner surface area (diluted soda)
- 60 mg per dm^2 of the wetted inner surface area (caustic soda)

Technical support

As a producer of high-performance ceramics, Haldenwanger offers not only the best materials but also technical support with materials selection and application. Our laboratory ceramics portfolio includes products that deliver temperature stability up to 2000°C (as for instance ZrO_2 – materials on request).



Material	Application temperature	WAK* $10^{-6}K^{-1}$
Glazed porcelain	1000°C	5.3
Unglazed porcelain	1350°C	5.3
Al_2O_3	1800°C	8–9
ZrO_2 CaO-FSZ	2000°C	10

Please note that all values quoted (page 4–5) are based on test specimens and may vary according to component design. These values cannot be guaranteed and can only be transferred to other forms and dimensions to a limited extent. They should be used for guidance only. In the field, for example, Alsint 99.7 moulded pieces demonstrate mechanical strength values between 160 and 300 MPa, depending on wall thickness, actual shape, surface finish, the shaping process and post-processing.

Being a member of the VGKL (Verband des Groß- und Außenhandels für Krankenpflege- und Laborbedarf), a trade association for leading wholesalers of laboratory equipment, we have always been at the cutting edge of technology.

In addition, Haldenwanger offers training courses in the theory and usage of Laboratory Porcelain.

Aggressive reagents

Laboratory Porcelain	Chemical resistance
All acids (20°C):	excellent*
All acids (boiling):	excellent*
Warm, highly-concentrated alkaline solutions:	good
Molten alkaline salts:	unsuitable

* Exception: hydrofluoric acid

Alsint 99.7-Oxide Ceramics	
All acids (20°C):	excellent*
All acids (boiling):	excellent*
Warm, highly-concentrated alkaline solutions:	good
Molten alkaline salts:	unsuitable

* Exception: highly concentrated hydrofluoric acid, boiling phosphoric acid, boiling potassium hydroxide and sodium hydroxide solutions

High temperatures	Heat resistant
Glazed Laboratory Porcelain:	up to max. 1000°C
Unglazed Laboratory Porcelain:	up to max. 1350°C
Alsint 99.7 Oxide Ceramics:	up to max. 1800°C

High-wear conditions

For example:

- mortar and pestle
- ball mill
- mouthpieces
- shaft-protection sleeves, etc.

New developments

We are constantly optimising our Laboratory Porcelain to meet your needs.

Highest standards

- Our Laboratory Porcelain complies with DIN EN 60672-3, Group C 100, Type C 110.
- Laboratory articles made of Alsint 99.7 Oxide Ceramics comply with DIN EN 60672, Group C 700, Type C 799.

Stringent product controls, from the raw materials to the finished product, ensure the consistently high quality of our products.

Laboratory Porcelain	Unit	Hard porcelain	Pythagoras
Type according to DIN EN 60672-3	–	C 110	C 610
Range of application	–	Laboratory Porcelain	Chemical-technical products
Water absorption capacity	%	≤ 0.2	≤ 0.2
Bulk density	g/cm^3	2.4	2.6
Flexural strength 20°C (3-Punkt)	Vol.-%	70–90	120
Thermal expansion 20–1000°C	µm	5.3	6
Thermal conductivity 200°C	MPa	1.4	2
Maximum temperature exposure	GPa	1350 unglazed/1000 glazed	1400 unglazed

Oxide Ceramics	Unit	Alsint 99.7*	Alsint porous
Al_2O_3 content	%	99.7	99.5
Alkali content	%	0.05	0.05
CaO stabiliser content	%	–	–
Type according to DIN VDE 0335	–	C 799	–
Water absorption capacity	%	≤ 0,2	2–3.5
Bulk density	g/cm^3	3.75–3.94	3.5–3.6
Flexural strength 20°C (3-Punkt)	MPa	300	70–110
Young's modulus	GPa	300–380	–
Hardness (Mohs' scale)	–	9	–
Thermal expansion 20–1000°C	$1/10^6$ K	8–9	8–9
Thermal conductivity 20–100°C	W/m K	25	–
Thermal shock resistance	–	good	good
Average pore diameter	µm	–	1–3
Specific thermal capacity 20–100°C	J/kg K	900	–
Maximum temperature exposure**	°C	1800	1700

*We recommend that products be heated at a rate not exceeding 30–50°C per hour, **dependent on load

Haldenwanger quality – the proven best!

Why is thermal shock resistance of the utmost importance for Laboratory Porcelain?

Thermal shock resistance as described in DIN 51068 is a material's response to repeated subjection to thermal stresses occurring in (rapidly) changing temperature fields. Heating up and cooling down laboratory ceramics may lead to thermal stresses within the ceramic body. Compressive and tensile stresses may form due to the temperature gradients within the material. In extreme situations, local stresses may exceed the strength level of the material, resulting in cracking. Thus, excellent thermal shock properties are most important for the longevity of Laboratory Porcelain.

Haldenwanger crucibles shown before (left) and after (right) anneal testing. The result confirms the thermal stability of the glazing, even after multiple testing cycles.

Competitor crucibles shown before (left) and after (right) anneal testing. Significant discoloration can be detected after the first anneal cycle.

Custom ceramics

The following pages will provide an overview of our current Laboratory Porcelain product range. In addition, we offer bespoke products in variable material and shape/size combinations.

Also, we can apply your logo, serial numbers and barcodes on the glazing.

Haldenwanger is your number one specialist in high-temperature and laboratory ceramics. Thanks to our more than 150 years of experience, we can offer the ideal solution.

We would be pleased to advise you – in many European languages!

Core competencies of Morgan Advanced Materials:

- **Application Engineering**
- **Materials Science**
- **Customer Focus**

Zirconium oxides

Zirconia Crucibles CaO-FSZ

We offer customised zirconia crucibles for several applications. Calcium fully stabilised zirconia possesses high refractory properties in temperatures of up to 2000°C.

Zirconia is extensively used in the chemical processing industry due to its outstanding chemical resistance to alkalis, acids and caustics.

Our crucibles stand for high purity, tight tolerances and stability in thermal processes.

Order-based production for customised dimensions; availability upon request.

Material properties	Unit	Values
ZrO_2- + HfO_2 content	%	94
CaO stabiliser content	%	5
Bulk density	g/cm³	> 5.4
Thermal expansion 20–1000°C	1/10⁶ K	10
Thermal conductivity 200°C	W/m K	1.5–3.0
Flexural strength	MPa	200
Maximum temperature exposure without load	°C	2000

Please note that all values quoted are based on test specimens and may vary according to component design. These values are not guaranteed in any way and should only be treated as indicative values. They should be used for guidance only and for no other purpose.

Pointers on the correct use of Laboratory Porcelain:
The expected lifetime of Laboratory Porcelain is a function of various factors such as heating and cooling rates, the degree of filling (half/completely filled), the homogeneity of the filling within the crucible, the geometry of the crucible (round/angular, wall thickness, radii, transitions), usage (e.g. during cleaning), etc.

In order to avoid damaging the material, please heed the following guidelines:

Maximum temperature:
- glazed porcelain 1000°C
- unglazed porcelain 1350°C
- Al_2O_3-crucibles 1800°C
- ZrO_2 CaO-FSZ-crucibles 2000°C

Maximum heating rate:
- Porcelain-crucibles 150°C/h
- Alsint-crucibles 50°C/h
- ZrO_2 CaO-FSZ-crucibles 50°C/h

At higher application temperatures (> 400°C), curved crucibles 33 and 33 D should preferably be used over the angular crucible 33 C.

Minimum degree of filling:
- choose the right size according to the content, minimum-degree of filling 75% (to avoid temperature differences)
- homogeneous filling within the crucible

Operation during cool-down phase:
- only use pre-heated crucible tongs
- place hot crucibles on porous ceramic materials only, such as R-SiC or alumo-silicate materials

Mortars

Article no. 55
with spout
T_{max} depends on the application, but should not exceed 200°C

Size no.	DIN	Inner Ø mm	Height mm	Capacity approx. ml	SU unglazed	SU glazed
00		50	32	20	20	10
0 a	12906	65	40	70	20	10
1		70	45	75	20	10
2		80	50	100	10	10
3	12906	90	55	170	10	10
4		115	63	300	10	5
5	12906	130	65	400	5	5
6 a	12906	150	70	700	5	5
8	12906	180	80	1,000	2	1
11	12906	240	100	2,600	1	1
15	12906	330	140	6,000	1	1

When ordering, please specify whether the grinding surface should be glazed or unglazed.

Pestles

Article no. 56
T_{max} depends on the application, but should not exceed 200°C

Size no.	DIN	Length Ø mm	Head Ø mm	SU unglazed	SU glazed
000		100	22	20	–
00	12906	115	24	20	10
0 a		125	28	20	10
1	12906	135	30	20	10
2	12906	150	36	10	10
3	12906	175	42	10	10
4		180	45	10	5
5		185	48	5	5
6 a	12906	210	55	5	5

When ordering, please specify whether the grinding surface should be glazed or unglazed.
The size 000 is only available unglazed!

Evaporating basins

Article no. 109
form B, semi-deep, with spout, size 4/0–5 glazed inside and outside, size 6–10 glazed except outside base
T_{max} depends on the application, but should not exceed 400°C

Size no.	DIN	Ø mm	Height mm	Capacity approx. ml	SU
4/0	12903	50	20	20	100
000	12903	63	25	40	100
00		70	26	50	100
0	12903	80	34	75	100
1		85	35	95	100
2	12903	100	40	115	50
4		110	45	220	50
5	12903	115	47	310	10
6		150	45	370	10
6 a	12903	160	64	640	5
7 b	12903	200	80	1,000	5
9	12903	250	86	2,200	2
10	12903	310	110	3,400	2

Article no. 131
french shape, with spout and flat base, glazed inside and outside
T_{max} depends on the application, but should not exceed 400°C

Size no.	Ø mm	Height mm	Capacity approx. ml	SU
2	58	24	30	20
3	75	30	60	20
4	84	36	100	10
5	97	40	150	10
6	110	50	250	10
8	150	60	400	5

Article no. 888
form A, shallow, with spout, glazed except outside base
T_{max} depends on the application, but should not exceed 400°C

Size no.	DIN	Ø mm	Height mm	Capacity approx. ml	SU
000	12903	40	9	5	30
00	12903	50	11	10	30
0	12903	63	13	20	30
2	12903	80	20	40	20
4	12903	100	22	80	20
6	12903	125	27	270	20
6 a	12903	160	35	450	10
8	12903	190	55	1,100	3
9	12903	240	65	1,750	3
10	12903	300	60	2,500	2

Incinerating dishes

Article no. 33
cylindrical, glazed except outside base
T_{max} depends on the application, but should not exceed 1000°C

Size no.	Ø mm	Height mm	Capacity approx. ml	SU
1	40	21	15	40
2	50	25	30	30
4	60	31	60	20

Article no. 33 C
conical, rectangular, glazed except outside base
T_{max} depends on the application, but should not exceed 400°C

Size no.	Length mm	Width mm	Height mm	SU
00	48	26	10	30
00 b	55	42	16	20
4 b	70	46	13	20
7	96	55	16	10

Article no. 33 D
shallow, glazed except outside base
T_{max} depends on the application, but should not exceed 1000°C

Size no.	Ø mm	Height mm	Capacity approx. ml	SU
2	37	10	8	40
3	42	11	10	40
4	48	12	15	30

Flour incinerating dishes

Article no. 5032
according to Prof. Mohs, glazed except outside base
T_{max} depends on the application, but should not exceed 1000°C

Size no.	Ø mm	Height mm	Capacity approx. ml	SU
1	56	23	30	100

Melting crucibles

Article no. 79
low shape, glazed, minimum filling level 75%
T_{max} depends on the application, but should not exceed 1000°C

Size no.	DIN	Upper Ø mm	Height mm	Capacity approx. ml	Lid	SU
000 a	12904	30	20	8	7	100
00	12904	35	23	11	7 a	100
0	12904	40	26	20	6	100
1	12904	45	29	25	5	100
2 *	12904	50	32	40	4	100
2 a	12904	60	38	65	3	100
3	12904	70	47	95	2	50

* Conradson crucible acc. to ASTM D 189-65

Article no. 79 C
tall shape, glazed, minimum filling level 75%
T_{max} depends on the application, but should not exceed 1000°C

Size no.	DIN	Upper Ø mm	Height mm	Capacity approx. ml	Lid	SU
00		26	34	11	8	100
0	12904	30	38	15	7	100
1	12904	35	44	24	7/7 a	100
2	12904	40	51	40	6/7 a	100
3	12904	46	58	50	5	50
4	12904	51	65	85	4	50
5	12904	60	79	140	3	25

Article no. 79 MF
medium-high shape, glazed, minimum filling level 75%
T_{max} depends on the application, but should not exceed 1000°C

Size no.	DIN	Upper Ø mm	Height mm	Capacity approx. ml	Lid	SU
9		25	20	5	9	100
8		30	25	10	7	100
7	12904	35	28	13	7 a	100
7 a	12904	40	32	20	6	100
6	12904	45	36	38	5	100
6 a	12904	50	40	50	4	100
5		52	43	60	4	100
4	12904	60	50	90	3	100
3		63	55	110	3/2	50
2	12904	70	60	150	2	50
1		82	65	230	1	20
1 a		89	75	300	1 a	10

Gooch crucibles

Article no. 82 A
wide shape, with perforated base, glazed
T_{max} depends on the application, but should not exceed 600°C

Size no.	Upper Ø mm	Base mm	Height mm	Capacity approx. ml	Lid	SU
2	39	25	42	25	7a	15
3	42	26	45	35	6	10

Lid 79 D, filtering discs 31 B have to be ordered separately.
Filter holes approx. 0.5 mm in Ø

Article no. 82 R
tall shape, with perforated base, glazed
T_{max} depends on the application, but should not exceed 600°C

Size no.	Upper Ø mm	Base mm	Height mm	Capacity approx. ml	Lid	SU
3	35	24	41	25	7	20

Lid 79 D, filtering discs 31 B have to be ordered separately.
Filter holes approx. 0.5 mm in Ø

Crucible lids

Article no. 79 D
T_{max} depends on the application, but should not exceed 600°C

Size no.	DIN	Inner Ø mm	SU
9		28	50
8		33	50
7	12904	37	50
7 a	12904	45	50
6	12904	49	50
5		54	50
4		64	25
3		70	25
2	12904	76	25
1		89	20
1 a		94	10

Filtering discs

Discontinued item – Availability only on request

Article no. 31 B
according to Dr Witt
T_{max} depends on the application, but should not exceed 600°C

Ø mm	SU
22	30
25	30

Funnels

Article no. 126
according to Dr Hirsch
T_{max} depends on the application, but should not exceed 200°C

Size no.	DIN	Nominal size* Ø mm	Inner Ø mm	Height mm	Tube length mm	Outer Ø mm	Tube top Ø mm	Tube bottom Ø mm	SU
5/0	12905	8	9	45	22	30	7	5.5	10
4/0 a		–	13	61	27	45	12	7	10
000	12905	16	15	74	33	52	11.5	8	10
00	12905	25	27	102	42	72	16	11	10

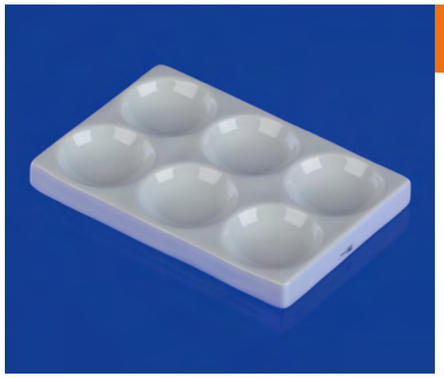
Article no. 127 C
according to Dr Büchner
T_{max} depends on the application, but should not exceed 200°C

* The nominal size is equivalent to the diameter of suitable filter paper.

Size no.	DIN	Nominal size* Ø mm	Inner Ø mm	Height mm	Tube length mm	Capacity approx. ml	Tube top Ø mm	Tube bottom Ø mm	SU
00		27	29	60	30	10	10.5	8.5	10
0		40	42	76	37	25	12.5	10	10
0 a	12905	45	48	100	41	50	16	14	10
1	12905	55	59	129	53	75	19	16.5	10
2	12905	70	74	150	75	135	21	15.5	10
2 a	12905	90	95	165	75	290	24	20	10
3	12905	110	114	201	90	580	31	23	3
4	12905	125	130	232	106	795	31.2	25.5	2
4 a	12905	150	155	235	110	1,250	35	25	2
5	12905	185	190	260	120	1,900	35	25	1
6	12905	240	250	330	138	4,300	40	26	1
6 a	12905	270	279	300	125	5,800	48	29.6	1
8	12905	320	330	350	150	10,600	55	36	1

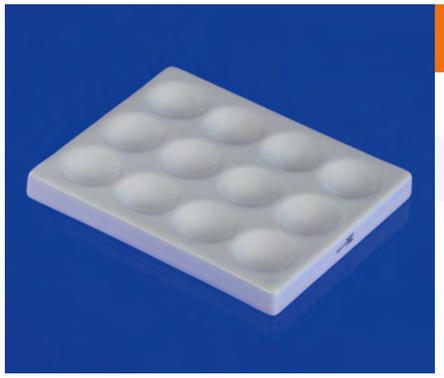
Spot plates

Article no. 61 A
rectangular, with 6 wells, glazed
T_{max} depends on the application, but should not exceed 400°C



Size no.				Cavities			SU
	Length mm	Width mm	Height mm	Number	Ø mm	Depth mm	
3	115	80	12	6	36	11	10

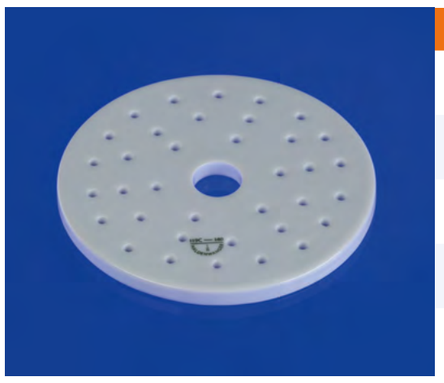
Article no. 61 B
rectangular, with 12 wells, glazed
T_{max} depends on the application, but should not exceed 400°C



Size no.				Cavities			SU
	Length mm	Width mm	Height mm	Number	Ø mm	Depth mm	
2	119	85	6	12	20	3	10
3	127	97	12	12	25	6	10

Desiccator plates

Article no. 119 C
with central hole 20 mm in Ø and filter holes approx. 5 mm in Ø
T_{max} depends on the application, but should not exceed 600°C



Size no.	DIN	Height mm	Ø mm	SU
90	12911	7.9	90	10
140	12911	8.9	140	10
190	12911	9.4	190	10
235	12911	10.6	235	10
280	12911	10.6	280	1

Casseroles

Article no. 17
with porcelain handle, glazed except rim
T_{max} depends on the application, but should not exceed 400°C

Size no.	DIN	Ø mm	Height mm	Capacity approx. ml	SU
4/0	12907	63	36	80	10
000	12907	80	46	140	10
0	12907	102	58	290	10
2	12907	127	70	500	4
4	12907	160	97	1,300	1

Combustion boats

Article no. 30
glazed
T_{max} depends on the application, but should not exceed 1000°C

Size no.	Length mm	Width mm	Height mm	SU
6	85	13	8	20
7	102	13	10	20
9	130	18	14	10

Graduated beakers

Article no. 51
graduated inside, glazed except outside base
T_{max} depends on the application, but should not exceed 400°C

Size no.	Base Ø mm	Height mm	Capacity approx. ml	SU
8	110	165	1,000	2
10	140	193	2,000	1

Ball mills

Article no. GSK

T_{max} depends on the application, but should not exceed 200°C

GSK mill no.	Base Ø mm	Height mm	Capacity approx. ml	SU
0	135	182	1,000	1
0 a	150	222	1,500	1
0 b	200	240	3,000	1
1	225	280	5,000	1
1 x	288	333	10,000	1
1 a	335	360	15,000	1

With lid, metal lock and sealing ring, glazed inside and outside.
Unglazed inside available upon request.

Sealing rings, inner rubber rings and metal locks as spare parts can also be purchased for each type of ball mill.

Spoon spatulas

Article no. 74

T_{max} depends on the application, but should not exceed 400°C

Size no.	Length mm	SU
2	121	20
4	170	20
6	210	10
8	305	5

Clay plates porous

T_{max} depends on the application, but should not exceed 600°C

Ø mm	SU
180	20
220	20

Volume recommendations for ball fillings

Unglazed balls

Article no. 42 K

GSK mill no.	Capacity approx. l	Ball Ø mm 9	15	20	30	40	50	Sales unit per 5 kg
0	1	0.10 kg	0.2 kg	0.2 kg	–	–	–	
0 a	1.5	0.15 kg	0.3 kg	0.3 kg	–	–	–	
0 b	3	0.30 kg	0.6 kg	0.6 kg	–	–	–	
1	5	0.50 kg	1.0 kg	1.0 kg	–	–	–	
1 x	10	0.50 kg	1.5 kg	1.5 kg	1.5 kg	–	–	
1 a	15	1.00 kg	1.5 kg	1.5 kg	1.5 kg	2 kg	2 kg	
Number of balls per kg approx.		1,080	230	95	30	12	6	
Ball density per litre approx.		1.35	1.4	1.4	1.3	1.3	1.23	

C and S determination

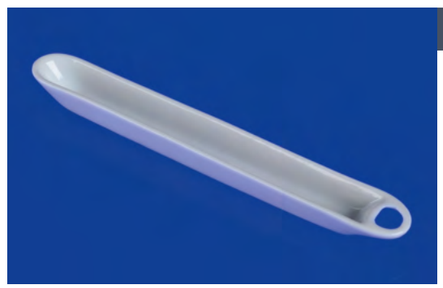
Hard porcelain tubes unglazed

T_{max} depends on the application, but should not exceed 1400°C

Outer Ø mm	Inner Ø mm	Length mm	SU
22	17	500	50
22	17	600	50
26	20	500	50
26	20	600	50

Combustion boats unglazed

T_{max} depends on the application, but should not exceed 1000°C



Length mm	Width mm	Height mm	SU
84	14	9	500

Oxide Ceramics

Alsint 99.7-combustion boats

Length mm	Width mm	Height mm
19	5	4
45	11	7
52	7.5	6
75	11	7
87	17	9
115	16	9
120	30	15
160	40	21
200	15	15

Alsint porous incinerating dishes

Length mm	Width mm	Height mm
420	200	50
350	240	40
350	230	58
280	210	100
220	170	100
210	170	300
100	100	110

Alsint 99.7-incinerating dishes

Length mm	Width mm	Height mm
40	10.5	8.5
50	20	20
50	25	20
50	38	36
75	50	25
100	32	28
100	45	19
105	15	15
150	65	19
150	65	35
160	80	30
160	135	90
190	138	75
250	65	30

Alsint 99.7-tubular crucibles

Outer Ø mm	Inner Ø mm	Height mm
14	10	100
16	12	100
20	15	100
22	17	100
24	19	100
30	25	100
34	28	100
38	32	100
44	38	100
48	40	100
55	45	100
60	50	100
38	32	200
44	38	200

Custom design

We can custom made Alsint 99.7 components to your requirements. Simply send us your detailed specifications and we will provide you with an obligation-free quote. Alsint 99.7 is the material of choice for use under high-wear conditions, in chemical-technical and electrical engineering applications and in high-temperature technology.

Important information concerning the use of Alsint 99.7 laboratory equipment

Due to their high refractoriness (melting point above 2000°C) and chemical resistance to a wide range of substances, crucibles and other devices made of Alsint 99.7 are used in multiple applications. However, these outstanding properties are only fully maintained with proper handling.

Applications

Chemical-technical applications:

- Crucibles for crystal growing
- Crucibles for fusion processes
- Crucibles for annealing

High-wear conditions:

- Ball mill pots
- Milling balls
- Mouthpieces
- Shaft-protection sleeves

Alsint 99.7-crucibles

cylindrical, flat base, minimum filling level 75%

Size no.	Outer Ø mm	Inner Ø mm	Height mm	Capacity approx. ml	Lid
1 A	20	16	30	5	79 D/9
2 A	30	26	40	15	79 D/8
3 A	35	30	50	30	79 D/7
4 A	40	36	60	60	79 D/7a
5 A	50	44	75	110	79 D/5
6 A	65	55	100	270	79 D/3
7 A	85	75	150	700	79 D/1
8 A	125	110	220	2,200	–

conical, low wide shape, minimum filling level 75%

Size no.	Upper outer Ø mm	Lower outer Ø mm	Height mm	Capacity approx. ml	Lid
00 B	30	14	24	10	79 D/8
0 B	41	18	37	25	79 D/7a
1 B	48	20	41	40	79 D/5
2 B	54	24	50	60	79 D/4
3 B	60	26	50	80	79 D/4
4 B	66	30	56	100	79 D/3

conical, tall shape, minimum filling level 75%

Size no.	Upper outer Ø mm	Lower outer Ø mm	Height mm	Capacity approx. ml	Lid
00 C	25	15	30	10	–
0 C	30	18	38	15	79 D/8
1 C	33	18	40	20	79 D/7
2 C	38	21	47	30	79 D/7a
3 C	42	25	54	45	79 D/6
4 C	50	27	65	80	79 D/5
5 C	62	32	75	150	79 D/3
6 C	73	35	90	250	79 D/2
7 C	85	35	100	350	79 D/1
8 C	90	47	115	500	79 D/1a
9 C	105	54	130	750	–
10 C	120	62	150	1,200	–

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Morgan Advanced Materials Haldenwanger has developed from its foundation in 1865 to become one of the world's leading manufacturers of high-tech ceramics. We offer you an extensive range of products made of oxide and non-oxide materials, which are primarily used in demanding thermal, chemical or even mechanical applications. Thanks to our wealth of expertise in ceramics, we serve you not only as a supplier, but also as a reliable partner in developing **solutions for your challenges.**

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