

实验室用理化瓷 / *Laboratory Porcelain*

ALSINT 99.7 高纯刚玉陶瓷 / *Oxide Ceramics*

CaO-FSZ 氧化钙稳定氧化锆 / *Zirconia*



目录 / Content

实验室用理化瓷

材料	5
研钵 55	10
乳棒 56	10
蒸发皿 8, 8 A	10
蒸发皿 109, 130, 131, 888	11
焚烧盘 33, 33 C, 33 D	12
带嘴焚烧盘 5032	12
熔炼坩埚 79, 79 C, 79 MF	13
过滤坩埚 84	13
古氏坩埚 82 A, 82 R	14
滤盘 31 B	14
坩埚盖 79 D	14
呈色反应皿 61 A, 61 B	15
干燥器板 119 C	15
勺皿 17	15
漏斗 126, 127 C	16
燃烧舟 30	16
量杯 51	17
加热烧杯 42 A, 42 L	17
球磨机及盖子 42 K	18
颠勺 74	19
微孔板	19
硬瓷管	19
瓷燃烧舟 (未上釉)	19

Alsint 99.7 高纯刚玉

材料	5
Alsint99.7-舟	20
Alsint99.7-有孔 (材料) 焚烧盘	20
Alsint99.7-焚烧盘	20
Alsint99.7-管状坩埚	20
Alsint99.7-坩埚	21

氧化钙稳定氧化锆 CaO-FSZ

材料	5
CaO-FSZ-坩埚	22

Laboratory Porcelain

Materials	5
Mortars 55	10
Pestles 56	10
Evaporating basins 8, 8 A	10
Evaporating basins 109, 130, 131, 888	11
Incinerating dishes 33, 33 C, 33 D	12
Flour incinerating dishes 5032	12
Melting crucibles 79, 79 C, 79 MF	13
Filtering crucibles 84	13
Gooch crucibles 82 A, 82 R	14
Filtering discs 31 B	14
Crucible lids 79 D	14
Spot plates 61 A, 61 B	15
Desiccator plates 119 C	15
Casseroles 17	15
Funnels 126, 127 C	16
Combustion boats 30	16
Graduated beakers 51	17
Heating beakers 42 A, 42 L	17
Ball mills GSK and Balls 42 K	18
Spoon spatulas 74	19
Clay plates	19
Hard porcelain tubes	19
Porcelain combustion boats	19

Alsint 99.7 Oxide Ceramics

Materials	5
Alsint 99.7 Boats	20
Alsint 99.7 porous Incinerating dishes	20
Alsint 99.7 Incinerating dishes	20
Alsint 99.7 Tubular crucibles	20
Alsint 99.7 Crucibles	21

Zirconia CaO-FSZ

Materials	5
CaO-FSZ Crucibles	22

海登皇格 实验室用理化瓷， 实验室专家 - 始于1865

在过去的150多年间，我们已成功应对了许
多不同的挑战。

高温材料

	最高使用温度
上釉实验室用理化瓷:	1000 °C
未上釉实验室用理化瓷:	1350 °C
Alsint99.7高纯刚玉:	1800 °C
氧化钙稳定氧化锆:	2000 °C

侵蚀性试剂

实验室用理化瓷	耐化学性能:
所有的酸 (20 °C):	很好 *
所有的酸 (沸腾):	很好 *
高温, 高浓度的碱溶液	好
熔融碱盐:	不适合

* 除了氢氟酸

Alsint 99.7 高纯刚玉

对各种侵蚀性溶液，甚至是高浓度试剂，无论在室温还是沸腾时都有非常可靠的抵抗能力。但以下溶液除外：高浓度氢氟酸，沸腾的磷酸，沸腾的氢氧化钾和氢氧化钠溶液。

氧化钙稳定氧化锆 CaO-FSZ

具有最高可达2000 °C耐火度，与高纯刚玉相比，对酸、碱和其他腐蚀剂都有进一步的抵抗能力。

用于高磨损的工况

比如：研钵和乳棒，球磨机，挤压模具，轴杆护套等。

持续进步

我们一直在持续优化我们的实验室用理化瓷来满足您的需要。

采用最高的标准

我们的实验室用理化瓷产品采用DIN EN 60672-3, Group C100, Type C110标准；Alsint 99.7高纯刚玉制品采用DIN EN60672, Group C700, Type C799；从原材料到成品，我们严格管控，确保我们的产品一直保持高品质。

您可以在我们的网站上找到应用和使用指南。

<http://www.haldenwanger.de/>

Haldenwanger Laboratory Porcelain, The Laboratory Specialist – Since 1865

We have risen to many different challenges in over 150 years.

High Temperatures

	Heat resistant up to max. Temp.:
Glazed laboratory porcelain:	1000°C
Unglazed laboratory porcelain:	1350°C
Alsint 99.7:	1800°C
CaO-FSZ:	2000°C

Aggressive Reagents

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

*Except hydrofluoric acid

Alsint99.7

Reliable resistance to diverse, in some cases highly-concentrated reagents both at room temperature and boiling point, except the following: highly concentrated hydrofluoric acid; boiling phosphoric acid; boiling potassium hydroxide and sodium hydroxide solutions.

Zirconia CaO-FSZ

High refractory properties in temperatures of up to 2000 °C. In comparison with aluminum oxide improved chemical resistance to alkalis, acids and caustics.

High-wear Conditions

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

New Developments

We are constantly optimizing our laboratory porcelain to meet your needs.

Highest Standards

Our laboratory porcelain complies with DIN EN 60672-3, Group C100, Type C110; laboratory articles made of Alsint99.7 comply Our laboratory porcelain complies with DIN EN 60672, Group C700, Type C799. Stringent product controls, from raw materials to the finished product, ensure the consistently high quality of our products.

You will find applications and directions for use on our website:

<http://www.haldenwanger.de/>

实验室用理化瓷 / Laboratory Porcelain

材料 / Material	单位 / Unit	硬瓷 / Hard porcelain	Pythagoras
标准 / Type according to DIN EN 60672-3	—	C 110	C 610
应用范围 / Range of application	—	实验室用理化瓷 Laboratory porcelain	化工技术产品 Chemical technical products
吸水率 / Water absorption capacity	%	≤ 0.2	≤ 0.2
体积密度 / Bulk density	gcm ⁻³	2.4	2.6
拉伸强度 (3点) / Flexural strength 20 °C (3-point)	MPa	70-90	120
热膨胀系数 / Thermal expansion 20-1000 °C	10 ⁻⁶ K ⁻¹	5.3	6
热导率 / Thermal conductivity 200 °C	Wm ⁻¹ K ⁻¹	1.4	2
最高使用温度 / Maximum temperature exposure	未上釉 / unglazed 上釉 / glazed	1350 1000	1400 —

氧化物 Alsint 99.7 – CaO-FSZ Oxide Ceramics Alsint99.7 – CaO-FSZ

材料 / Material	单位 / Unit	Alsint 99.7*	Alsint porous	CaO-FSZ*
Al ₂ O ₃ 含量 / Al ₂ O ₃ content	%	99.7	99.5	—
碱含量 / Alkali content	%	0.05	0.05	—
ZrO ₂ +HfO ₂ 含量 / ZrO ₂ +HfO ₂ content	%	—	—	94
CaO 稳定剂含量 / CaO stabilizer content	%	—	—	5
标准 / Type according to DIN VDE 0335		C 799	—	—
吸水率 / Water absorption capacity	%	≤ 0.2	2-3.5	≤ 0.2
体积密度 / Bulk density	gcm ⁻³	3.75 – 3.94	3.5-3.6	> 5.4
拉伸强度 (3点) / Flexural strength 20 °C (3-point)	MPa	300	70-110	200
杨氏模量 / Young's modulus	GPa	300 - 380	—	—
莫氏硬度 / Hardness (Mohs' scale)	—	9	—	—
热膨胀系数 / Thermal expansion 20 -1000 °C	10 ⁻⁶ K ⁻¹	8-9	8-9	10
热导率 / Thermal conductivity 20 -100 °C	Wm ⁻¹ K ⁻¹	25	—	1.5-3.0
热震性能 / Thermal shock resistance	—	好 / good	好 / good	低 / low
平均孔径 / Average pore diameter	µm	—	1-3	—
比热容量 / Specific thermal capacity 20 -100 °C	Jkg ⁻¹ K ⁻¹	900	—	—
最高使用温度 / Maximum temperature exposure**	°C	1800	1700	2000

请注意上表的数据是基于测试样本，可能会根据成分设计不同而变化。这些数据不能被保证，仅仅可以在有限范围内被用来转换到其他形状和尺寸，它们仅仅被用作指导。比如，以Alsint99.7为原料成型的产品的机械强度数值在160 MPa至300 MPa之间，这取决于壁厚，实际的形状，表面光洁度，成型工艺和后加工。

*我们建议产品的加热速率不超过30-50 °C/小时。

**取决于载重

Please note that all values quoted 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.

*We recommend that product be heated at a rate not exceeding 30-50 °C per hour

**Depending on load

为什么选择海登皇格品牌的实验室用理化瓷？

海登皇格作为实验室用理化瓷的生产商已有150年的历史。

尽管有如此长的历史，我们一直精心维持产品的原有尺寸和形状。市场上不断出现的新的挑战也让我们有了新的发展。最好的耐火度和抗物理化学冲击能力一直是我们的代名词。

技术支持

作为一个高品质陶瓷的生产商，海登皇格不仅能够提供最好的材料，而且能够为客户提供如何选择材料和识别应用的支持。在实验室用陶瓷领域，我们的产品目录有一直到2000 °C下都可以稳定使用的产品。

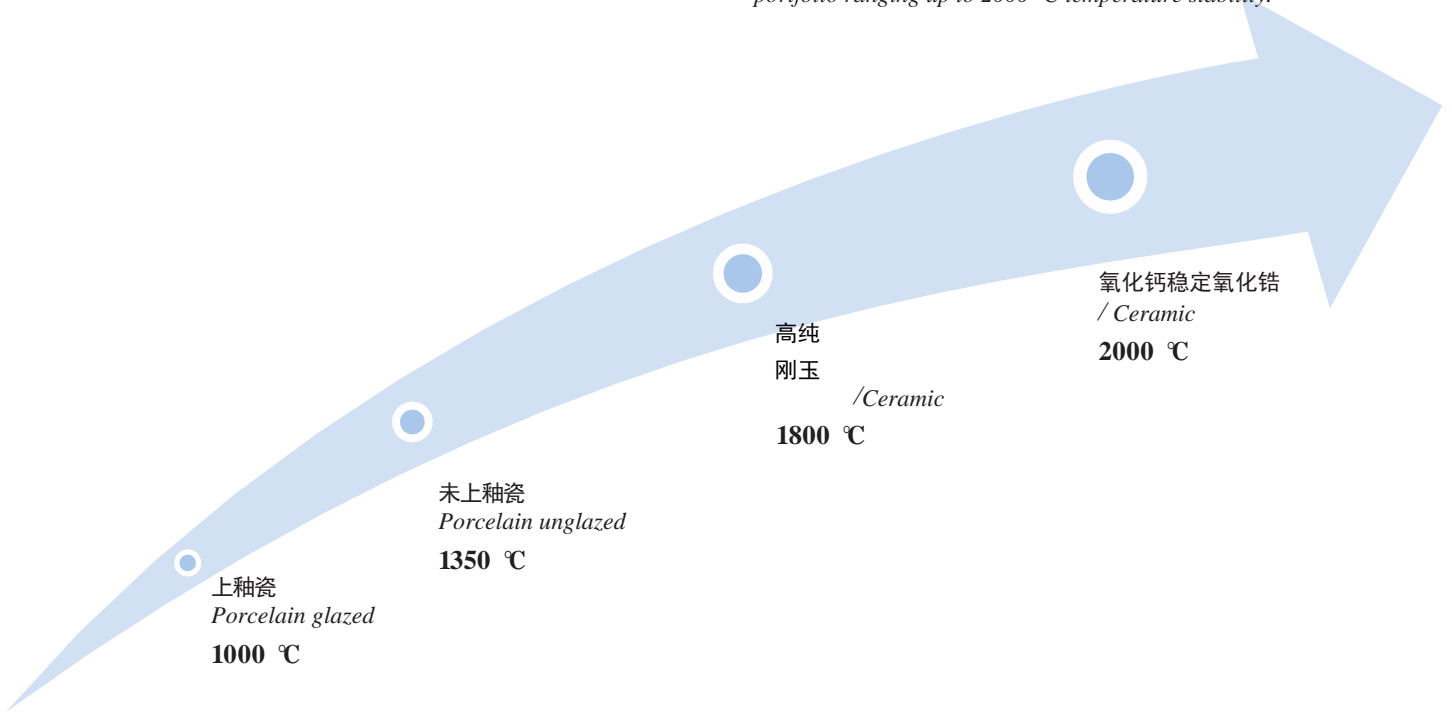
Why Should I use Haldenwanger laboratory porcelain?

Haldenwanger has been a producer of laboratory porcelain for 150 years.

Despite such a long history record, we have taken care to maintain the original size and shape of our products. New challenges of the ever growing market have led us to new development. The best refractoriness and resistance against physical and chemical attack has always been of utmost relevance to us.

Technical Support

As a producer of high performance ceramics, Haldenwanger offers not only the best materials but also technical support on materials selection and application. In the area of laboratory ceramic, we have a product portfolio ranging up to 2000 °C temperature stability.



材料 / Material	使用温度 / Application temperature	热膨胀系数*10 ⁻⁶ K ⁻¹
上釉瓷 / Porcelain glazed	1000 °C	5.3
未上釉瓷 / Porcelain unglazed	1350 °C	5.3
高纯刚玉 / Al ₂ O ₃	1800 °C	8-9
氧化钙稳定氧化锆 / ZrO ₂ -CaO-FSZ	2000 °C	10

作为VGKL（全球领先的实验室设备批发的贸易组织）的一员，我们一直都拥有最前沿的技术。此外，海登皇格也提供实验室用理化瓷的理论和使用的培训课程。

Being a member of the VGKL, a trade association of the leading wholesalers for 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.

海登皇格陶瓷产品的高性能

我们在生产的各个阶段都进行质量检测以保证我们的产品一直处于高品质，比如原材料，成型过程和成品的检测。为此，我们建立了最先进的研发中心和试验工场。我们的产品从头到尾都按照标准 DIN 12851 进行检测。

这一DIN标准对检测铝硅酸盐（材料类别C110）的实验室设备提出了实质性的严格要求，尤其，这一标准包含以下要求：

- 陶瓷体的不渗透性
- 上釉坚固（无孔，无裂纹）
- 热震性能
- 上釉后的耐火度达到 900 °C
- 退火时没有重量变化
- 对盐酸、苏打和苛性钠有化学抵抗力

具体要求

陶瓷体的不渗透性

任何一个样品上的任何地方都不能有：

- 没有釉的地方有任何形式的褪色
- 陶瓷体和釉之间可以渗透染料

上釉坚固（无孔，无裂纹）

不能有任何一个样品出现釉浆过多导致的轨线及边缘的褪色。

热震性能

不能有任何一个样品出现断裂，或者淬火后出现细裂纹的情况。

上釉后的耐火度 达到900 °C

上釉的产品在900°C下不会粘结。

退火时没有重量变化

任何一个样品在退火时的重量变化都不超过0.1mg/10g。

对盐酸、苏打和苛性钠有化学抵抗力

任何一个样品都不会有如下的重量损失：

- 超过1mg /1dm²湿内比表面积（盐酸）
- 超过10mg /1dm²湿内比表面积（稀释苏打）
- 超过60mg /1dm²湿内比表面积（苛性钠）

海登皇格的品质已被证明是最好的

下列图片显示海登皇格和竞争对手的产品在 1000 °C 使用前后的对比。

Proven Quality of Haldenwanger Ceramics

We guarantee a consistently high quality level by performing quality checks at all levels, e.g. raw materials, forming process, and final product inspection. To this end, we have established our own state-of-the-art testing and development center as well as a pilot plant. Our products are continuously tested to comply with DIN 12851 regulations.

This DIN standard comprises substantial and strict requirements for the testing of laboratory equipment made from alumo-silicate ceramics (materials class C110). In particular, this encompasses the following requirements:

- *imperiousness of the ceramic body*
- *dense glazing (no pores, no cracks)*
- *thermal shock resistance*
- *refractoriness of the glazing up to 900 °C*
- *no weight change during annealing*
- *chemical resistance against hydrochloric acid, diluted soda and caustic soda*

Requirements

Imperiousness of the ceramic body

No single area of any sample may show

- *and kind of discoloration in glaze-free areas*
- *penetration of dye between 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 changing during annealing

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

Chemical resistance against hydrochloric acid, soda and caustic soda

No single sample may show a weight loss

- *of more than 1mg per 1dm² of the wetted inner surface area (hydrochloric acid)*
- *of more than 10mg per 1dm² of the wetted inner surface area (diluted soda)*
- *of more than 60mg per 1dm² of the wetted inner surface area (caustic soda)*

Haldenwanger Quality Proven to be the Best

The following images show a Haldenwanger as well as a competitor's product before and after single usage at 1000 °C.



海登皇格的坩埚在淬火测试的前（左）后（右）对比。结果证明釉的热震稳定性非常好，即使经过多次的循环测试也是如此。

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



竞争对手的坩埚在淬火测试的前（左）后（右）对比。明显看出在一次淬火循环后出现了明显的褪色。

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

为什么对于实验室用理化瓷来说，热震性能是最重要的因素？

标准DIN 51068是这样描述热震性能，它是指材料应对温度场的快速变化时产生的热应力的能力。实验室用陶瓷的加热和冷却导致在陶瓷体内产生热应力。由于温度梯度的存在，压应力和拉应力就会形成。在极端情况下，应力超过了材料本身的强度，就会导致出现裂纹。

因此，优异的热震性能对于实验室用理化瓷的寿命是最重要的因素。

下表显示的是海登皇格和几个竞争对手的产品在1000 °C下的热震性能：

测试样品：海登皇格的坩埚79 MF/6和与其同规格的产品。

测试条件：空坩埚放在1000 °C的炉子里，放置15分钟，然后从炉子里拿出，冷却。

测试：进行5次加热冷却循环。

分析：没有破裂的坩埚比例。

Why is thermal shock resistance of utmost relevance for laboratory porcelain?

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

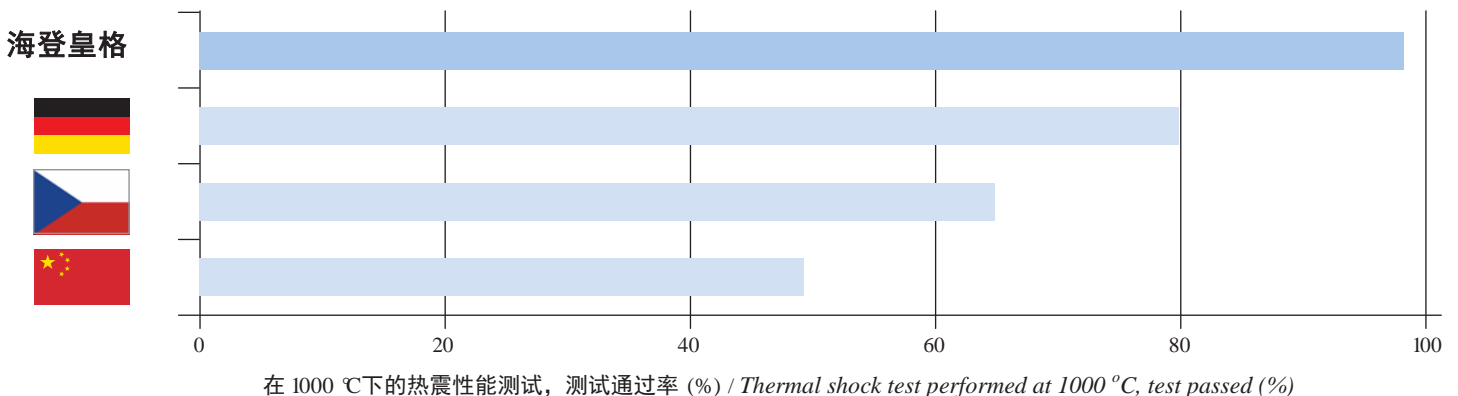
The following table shows the result of a thermal shock test performed at 1000 °C on a Haldenwanger and several competitors' products.

Test product: is equivalent to Haldenwanger crucible type 79 MF/6.

Test conditions: empty crucibles were placed in a pre-heated furnace at 1000 °C, anneal time was 15min, then removal from the furnace and cool down.

Testing: running five cycles of heating up and cooling.

Analysis: proportion of crucibles without fracture.



为了延长实验室用理化瓷的使用寿命，我们建议您按照下面的说明使用：

In order to extend the life-time expectancy of your laboratory porcelain, we recommend you follow these instructions:

正确使用实验室用理化瓷的一些提示

实验室用理化瓷的寿命是各种因素综合作用的结果，比如：加热冷却速度，填充程度（半/全填充），坩埚的填充是否均匀，坩埚的几何形状（圆曲线/锐曲线，壁厚，半径，壁厚的过渡），使用（比如清洗）。为了避免材料的损坏，用户应该遵照以下的使用指南：

最高使用温度

- 上釉瓷 1000 °C
- 未上釉瓷 1350 °C
- 高纯刚玉坩埚 1800 °C
- 氧化锆坩埚 2000 °C
- 瓷坩埚的最大升温速率 150 °C/h
- 高纯刚玉和氧化锆坩埚的最大升温速率 50 °C/h
- 在较高的应用温度下 (> 400 °C)，圆形坩埚33和33D比带锐边坩埚33C更适合。
- 选择正确的尺寸很重要，最小的填充量应该超过坩埚容量的75%（这样可以避免温度不均）
- 坩埚的填充要均匀

冷却阶段的操作

- 只能使用预热的坩埚钳
- 把热的坩埚放置在有孔的陶瓷材料上，比如重结晶碳化硅或铝硅酸盐材料。

一般来说，要避免快速的温度变化，最危险的过程是过快冷却过程中的热损失。

以上的使用说明基于我们对产品的长时间的理解。其他因素比如窑炉气氛与材质发生化学反应也会影响产品的热震性能。

客户定制陶瓷

以下页面是我司目前实验室用理化瓷产品的概况。另外，我们也提供其他各种材料、形状和尺寸的定制化的产品，而且我们也可以根据需要在釉面喷涂您的logo，序列号和条形码。

摩根海登皇格是您在高温和实验室用理化瓷领域的第一选择，我们在此领域有超过150年的历史，能够为客户提供理想的解决方案。



Hints for Using Laboratory Porcelain Correctly

Life-time expectancy of laboratory porcelain is a function of various factors such as heat-up and cooling rates, degree of filling (half/completed filled), homogeneity of the filling within the crucible, geometry of the crucibles (round/sharp curved, wall thickness, radii, wall thickness transitions), usage (e.g. during cleaning), etc. In order to avoid damage of the material, the user should respect the following guidelines:

Maximum temperature

- Glazed porcelain: 1000°C
- Unglazed porcelain: 1350°C
- Al₂O₃ crucibles: 1800°C
- CaO-FSZ crucibles: 2000°C
- Maximum heating rate of porcelain crucibles: 150°C/h
- Maximum heating rate of Al₂O₃ and CaO-FSZ crucibles: 50°C/h
- At higher application temperatures (>400 °C), the curved crucibles 33 and 33D should preferably be used over the sharp-edged type 33C
- Choosing the right size compared with the content, minimum degree of filling exceed 75% (to avoid temperature differences)
- Homogeneous filling within the crucible

Operation during cool-down phase

- only use pre-heated crucible tongs
- place hot crucibles only on porous ceramic materials such as R-SiC or alumo-silicate materials

Generally, fast temperature cycling should be avoided. Most critical is heat loss during exceedingly fast cooling.

The instructions given above are based on our long-term experience with our products. Further factors such as furnace atmosphere or chemical interactions with the material treated may also influence the thermal shock resistance of porcelain.

Custom-made Ceramics

The following page will give you an overview of the current product portfolio of our laboratory porcelain. In addition, we offer individualized products in variable material and shape /size combinations. Also, we can apply your logo, any serial number, or any bar codes on the glazing.

Morgan Advanced Materials Haldenwanger is your number one specialist in high temperature and laboratory ceramics. Having gained experience over more than 150 years, we can offer the ideal solutions.

研钵 / Mortars

货号 / Article No. 55

带嘴 / with spout



尺寸编号 Size No.	DIN	内径 / Inner Ø mm	高度 / Height mm	容量 / Capacity approx. ML	最小起订量 / Sales Unit	
					未上釉 unglazed	上釉 glazed
00	12906	50	32	20	20	10
0 a		65	40	70	20	10
1		70	45	75	20	10
2	12906	80	50	100	10	10
3		90	55	170	10	10
4	12906	115	63	300	10	5
5	12906	130	65	400	5	5
6 a	12906	150	70	700	5	5
8	12906	180	80	1000	2	1
11	12906	240	100	2600	1	1
15	12906	330	140	6000	1	1

下订单时请告知研磨面是否需要上釉

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

乳棒 / Pestles

货号 / Article No. 56



尺寸编号 Size No.	DIN	长度 / Length mm	棒头直径 / Head Ø mm	最小起订量 / Sales Unit	
				未上釉 unglazed	上釉 glazed
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
8		215	60	2	1
13	12906	262	74	1	1
15	12906	280	85	1	1

下订单时请告知研磨面是否需要上釉

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

蒸发皿 / Evaporating basins

货号 / Article No. 8

圆柱形，浅底，带嘴或不带嘴，除了外底全部上釉。

不带嘴蒸发皿也可以配盖使用（货号L42A或L42L）

Cylindrical, with shallow base, with or without spout, glazed except outside base

Without spout also usable as lid for article L42A or L42L

货号 / Article No. 8A



尺寸编号 Size No.	直径 / Diameter mm	高度 / Height mm	容量 / Capacity approx. ML
1	70	15	40
2	80	16	50
3	95	19	75
4	105	21	100
5	120	23	125
6	140	25	175
7	160	30	250
8	180	33	400
12	400	90	7000
0	65	25	50
1	75	28	80
2	80	30	100
3	90	33	150
4	108	38	200
5	120	45	350
6	140	50	600
7	160	56	800
8	175	65	1000
10	210	75	1900
11	250	100	4000
12	310	100	5500

蒸发皿 / Evaporating basins

货号 / Article No. 109

B型号, 半深, 带嘴

尺寸编号5/0-5为内外表面都上釉

尺寸编号6-10为除了外底全部上釉

Form B, semi-deep, with spout, Size No. 5/0-5 glazed inside and outside, Size No. 6-10 glazed except outside base



尺寸编号 Size No.	DIN	直径 / Diameter mm	高度 / Height mm	容量 / Capacity approx. ML	最小起订量 Sales Unit
5/0	12903	40	16	10	100
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
3		105	42	170	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	1000	5
9	12903	200	86	2200	2
10	12903	310	110	3400	2

货号 / Article No. 130

带嘴, 圆底, 内外表面都上釉

french shape, with spout and round base, glazed inside and outside



尺寸编号 Size No.	直径 / Diameter mm	高度 / Height mm	容量 / Capacity approx. ML	最小起订量 Sales Unit
3	75	40	70	10
5	97	50	190	10
6	110	52	270	10
7	125	60	350	10

货号 / Article No. 131

带嘴, 平底, 内外表面都上釉

french shape, with spout and flat base, glazed inside and outside



尺寸编号 Size No.	直径 / Diameter mm	高度 / Height mm	容量 / Capacity approx. ML	最小起订量 Sales Unit
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
7	125	52	290	10
8	150	60	400	5

货号 / Article No. 888

A型号, 身浅, 带嘴, 除了外底全部上釉

Form A, shallow, with spout, glazed except outside base



尺寸编号 Size No.	DIN	直径 / Diameter mm	高度 / Height mm	容量 / Capacity approx. ML	最小起订量 Sales Unit
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	1100	3
9	12903	240	65	1750	3
10	12903	300	60	2500	2

焚烧盘 / Incinerating dishes

货号 / Article No. 33

圆柱形, 除了外底全部上釉

Cylindrical, glazed except outside base



尺寸编号 Size No.	直径 / Diameter mm	高度 / Height mm	容量 / Capacity approx. ML	最小起订量 Sales Unit
1	40	21	15	40
2	50	25	30	30
4	60	31	60	20

货号 / Article No. 33C

圆锥, 矩形, 除了外底全部上釉 / conical, rectangular, glazed except outside base

使用温度 < 400 °C / Application temperature < 400 °C



尺寸编号 Size No.	长度 / Length mm	宽度 / Width mm	高度 / Height mm	最小起订量 Sales Unit
00	48	26	10	30
00 b	55	42	16	20
4 b	70	46	13	20
7	96	55	16	10

货号 / Article No. 33D

身浅, 除了外底全部上釉

Shallow, glazed except out base



尺寸编号 Size No.	直径 / Diameter mm	高度 / Height mm	容量 / Capacity approx. ML	最小起订量 Sales Unit
2	37	10	8	40
3	42	11	10	40
4	48	12	15	30

带嘴焚烧盘 / Flour incinerating dishes

货号 / Article No. 5032

除了外底全部上釉 / glazed except outside base



直径 / Diameter mm	高度 / Height mm	容量 / Capacity approx. ML	最小起订量 Sales Unit
56	23	30	100

熔炼坩埚 / Melting crucibles

货号 / Article No. 79

浅身, 上釉 / low shape, glazed

* 根据ASTM D 189-65 / Crucible acc. to ASTM D 189-65



尺寸编号 Size No.	DIN	上口直径 upper Ø mm	高度/Height mm	容量/Capacity approx. ML	盖子 Lid	最小起订量 Sales Unit
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
4		83	55	180	1	20

货号 / Article No. 79C

高身, 上釉 / tall shape, glazed



尺寸编号 Size No.	DIN	上口直径 upper Ø mm	高度/Height mm	容量/Capacity approx. ML	盖子 Lid	最小起订量 Sales Unit
00		26	34	11	8	100
0	12904	30	38	15	7	100
1	12904	35	44	24	7 a	100
2	12904	40	51	40	6	100
3	12904	46	58	50	5	50
4	12904	51	65	85	4	50
5	12904	60	79	140	3	25

货号 / Article No. 79MF

中等高身, 上釉 / medium-high shape, glazed



尺寸编号 Size No.	DIN	上口直径 upper Ø mm	高度/Height mm	容量/Capacity approx. ML	盖子 Lid	最小起订量 Sales Unit
9		25	20	15	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

过滤坩埚 / Filtering crucibles

货号 / Article No. 84

底部有孔 / with porous base

孔隙率 / porosity: P2≈7µm



尺寸编号 Size No.	DIN	上沿 / 底直径 Rim / Base Ø mm	高度 / Height mm	容量 / Capacity approx. ML	最小起订量 Sales Unit
P2/2	12909	35 / 24	40	25	1
P2/3		45 / 30	50	50	1

古氏坩埚 / Gooch crucibles

货号 / Article No. 82A

宽体，底部排孔，上釉 / wide shape, with perforated base, glazed



尺寸编号 Size No.	上口直径 / upper Ø mm	底直径 / Base mm	高度 / Height mm	容量 / Capacity approx. ML	最小起订量 Sales Unit
2	39	25	42	25	15
3	42	26	45	35	10

盖子79 D，滤盘31B，需要单独订货。滤孔直径大约0.5mm。

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

货号 / Article No. 82R

高身，底部排孔，上釉 / tall shape, with perforated base, glazed



尺寸编号 Size No.	上口直径 / upper Ø mm	底直径 / Base mm	高度 / Height mm	容量 / Capacity approx. ML	最小起订量 Sales Unit
3	35	24	41	25	20

盖子79 D，滤盘31B，需要单独订货。滤孔直径大约0.5mm。

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

过滤盘 / Filtering discs

货号 / Article No. 31B



直径 / Diameter mm	最小起订量 / Sales Unit
22	30
25	30

坩埚盖 / Crucible lids

货号 / Article No. 79D



尺寸编号 Size No.	DIN	内径 / Inner Ø mm	最小起订量 Sales Unit
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

呈色反应皿 / Spot plates

货号 / Article No. 61A

长方形，带凹槽，上釉

Rectangular, with well, glazed



尺寸编号 Size No.	长度 Length mm	宽度 Width mm	高度 Height mm	凹槽 / Cavities			最小起订量 / Sales Unit
				数量 Number	直径 mm	深度 Depth mm	
3	115	80	12	6	36	11	10

货号 / Article No. 61B



尺寸编号 Size No.	长度 Length mm	宽度 Width mm	高度 Height mm	凹槽 / Cavities			最小起订量 / Sales Unit
				数量 Number	直径 mm	深度 Depth mm	
2	119	85	6	12	20	3	10
3	127	97	12	12	25	6	10

干燥器板 / Desiccator plates

货号 / Article No. 119C

中间孔直径20 mm，滤孔直径约 5 mm

With central hole 20 mm in \varnothing and filter holes approx. 5 in mm \varnothing



DIN	高度 / Height mm	直径 / Diameter mm	最小起订量 / Sales Unit
12911	7.9	90	10
12911	8.9	140	10
12911	9.4	190	10
12911	10.6	235	10
12911	10.6	280	1

勺皿 / Casseroles

货号 / Article No. 17

带有瓷把手，除了边缘全部上釉

With porcelain handle, glazed except rim



尺寸编号 Size No.	DIN	直径 mm	高度 / Height mm	容量 / Capacity approx. ML	最小起订量 Sales Unit
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	1300	1
4 b	12907	215	110	2600	1

漏斗/ *Funnels*

货号/ Article No. 126



尺寸编号 Size No.	DIN	标称尺寸* Nominal Size* Ø mm	内径 Inner Ø mm	高度 Height mm	管长度 Tube Length mm	外径 Outer Ø mm	管上直径 Tube top Ø mm	管底直径 Tube bottom Ø mm	最小订货量 Sales Unit
5/0	12905	8	9	45	22	30	7	5.5	10
4/0		—	11	56	25	40	9	6	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

* 标称尺寸等值于与相应的滤纸的直径。

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

货号 / Article No. 127C



尺寸编号 Size No.	DIN	标称尺寸* Nominal Size* Ø mm	内径 Inner Ø mm	高度 Height mm	管长度 Tube Length mm	容量 Capacity approx. ML	管上直径 Tube top Ø mm	管底直径 Tube bottom Ø mm	最小订货量 Sales Unit
000		18	19	47	20	3	9	8	10
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	1250	35	25	2
5	12905	185	190	260	120	1900	35	25	1
6	12905	240	250	330	138	4300	40	26	1
6 a	12905	270	279	300	125	5800	48	29.6	1
8	12905	320	330	350	150	10600	55	36	1

燃烧舟 / *Combustion boats*

货号 / Article No. 30

上釉 / glazed



尺寸编号 Size No.	总长度 Total length mm	宽度 Width mm	高度 / Height mm	最小起订量 Sales Unit
6	85	13	8	20
7	102	13	10	20
9	130	18	14	10

量杯 / *Graduated beakers*

货号 / Article No. 51

内部有刻度，除了外底全部上釉

Graduated inside, glazed except outside base



尺寸编号 Size No.	底直径 / Base Ø mm	高度 / Height mm	容量 / Capacity approx. ML	最小起订量 Sales Unit
3 a	80	100	250	3
5 a	95	125	500	2
8	110	165	1000	2
10	140	193	2000	1

加热烧杯 / *Heating beakers*

货号 / Article No. 42A

高身，带嘴，除了外底全部上釉

Tall shape with spout, glazed except outside base



尺寸编号 Size No.	上口直径 / upper Ø mm	底直径 / Base Ø mm	高度 / Height mm	容量 / Capacity approx. ML
1	56	48	88	125
2	67	58	105	250
4	88	75	135	500
5	100	85	153	750
5 a	110	95	170	1000

货号 / Article No. 42L

浅身宽体，带嘴，除了外底全部上釉

Low wide shape with spout, glazed except outside base



尺寸编号 Size No.	上口直径 upper Ø mm	底直径 / Base Ø mm	高度 / Height mm	容量 / Capacity approx. ML
1 a	80	70	90	250
2	95	80	90	400

球磨机 / Ball mills

货号 / Article No. GSK

配有盖子，金属锁和密封环，内外表面均上釉，也可以根据要求内表面不上釉

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



编号 Mill GSK No.	底直径 / Base Ø mm	高度 / Height mm	容量 / Capacity approx. ML	最小起订量 Sales Unit
0	135	182	1000	1
0 a	150	222	1700	1
0 b	200	240	3000	1
1	225	280	5000	1
1 x	288	333	10000	1
1 a	335	360	15000	1

瓷球填充量的建议 / Vol. Recommendations for ball filling

编号 Mill GSK No.	容量 / Capacity approx. L	瓷球直径 / Balls				
		9 mm	15 mm	20 mm	30 mm	40 mm
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



每kg的瓷球数量 / Number of balls per kg

瓷球直径 / Balls	9 Ø mm	15 Ø mm	20 Ø mm	30 Ø mm	40 Ø mm	50 Ø mm
大约数量 Pcs. approx.	1080	230	95	30	12	6

瓷球 / Balls

货号 / Article No. 42K

不上釉 / unglazed

最小起订量 5kg / Sales Unit each: 5kg

散装容积密度 / Apparent ball density per liter

瓷球直径 / Balls	9 Ø mm	15 Ø mm	20 Ø mm	30 Ø mm	40 Ø mm	50 Ø mm
大约数量 kg Pcs. approx. kg	1.35	1.4	1.4	1.3	1.3	1.23

颠勺 / *Spoon spatulas*

货号 / Article No. 74



尺寸编号 Size No.	长度 / length mm	最小起订量 / Sales Unit
2	121	20
4	170	20
6	210	10
8	305	5

微孔板 / *Clay plates*

微孔 / porous



直径 / Diameter mm	最小起订量 / Sales Unit
22	30
25	30

碳和硫测定 / *C and S Determination*

硬瓷管 / *Hard porcelain tubes*

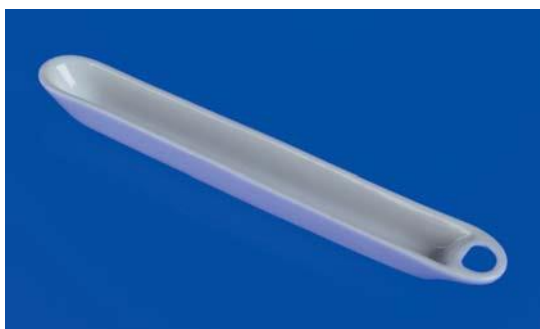
不上釉 / unglazed



外径 / Outer Ø mm	内径 / Inner Ø mm	长度 / Length mm	最小起订量 Sales Unit
22	17	500	50
22	17	600	50
26	20	500	50
26	20	600	50

瓷燃烧舟 / *Porcelain combustion boats*

不上釉 / unglazed



总长度 / Total length mm	宽度 / Width mm	高度 / Height mm	最小起订量 Sales Unit
84	14	9	500

Alsint 99.7 高纯刚玉 / Oxide Ceramics

Alsint 99.7-舟
Alsint 99.7 Boats



长度 Length mm	宽度 Width mm	高度 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 焚烧盘
Alsint porous Incinerating dishes



长度 Length mm	宽度 Width mm	高度 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-焚烧盘
Alsint 99.7 Incinerating dishes



长度 Length mm	宽度 Width mm	高度 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-管状坩埚
Alsint 99.7 Tubular crucibles



外径 Outer Ø mm	内径 Inner Ø mm	高度 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

定制设计

我们可以根据您的要求定制生产Alsint 99.7部件。只要您告诉我们具体尺寸，我们便会提供报价。Alsint 99.7是一种在高磨损工况，化工技术，电气工程和高温技术中有着很好应用的材料。

关于Alsint 99.7实验室用产品的使用的一些重要信息：

由于这一材料的高耐火度（熔点2000℃以上），以及很好的耐化学腐蚀性，以Alsint 99.7材料制成的坩埚和其他产品有着广泛的应用。但是，只有正确操作，才能充分发挥它的优异的性能。

应用举例

化工技术方面的应用：

坩埚可用于晶体生长，熔炼工艺，退火处理

高磨损工况：

球磨罐，磨球，挤压模具，轴杆护套

Custom Design

We can custom-make 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 its 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. Its outstanding properties, however, 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-坩埚

Alsint 99.7 Crucibles

圆柱形，平底 / cylindrical, flat base



尺寸编号 Size No.	外径 / Outer Ø mm	内径 / Inner Ø mm	高度 / Height mm	容量 / Capacity approx. ML	盖子 Lid
1A	20	16	30	5	79D/9
2A	30	26	40	15	79D/8
3A	35	30	50	30	79D/7
4A	40	36	60	60	79D/7a
5A	50	44	75	110	79D/5
6A	65	55	100	270	79D/3
7A	85	75	150	700	79D/1
8A	125	110	220	2200	-

圆锥形，高身 / conical, tall shape



尺寸编号 Size No.	上口外径 upper outer Ø mm	底部外径 lower outer Ø mm	高度 Height mm	容量 Capacity approx. ML	盖子 Lid
00C	25	15	30	10	-
0C	30	18	38	15	79D/8
1C	33	18	40	20	79D/7
2C	38	21	47	30	79D/7a
3C	42	25	54	45	79D/6
4C	50	27	65	80	79D/5
5C	62	32	75	150	79D/3
6C	73	35	90	250	79D/2
7C	85	35	100	350	79D/1
8C	90	47	115	500	79D/1a
9C	105	54	130	750	-
10C	120	62	150	1200	-

圆锥形，浅身宽体 / conical, low wide shape



尺寸编号 Size No.	上口外径 upper outer Ø mm	底部外径 lower outer Ø mm	高度 Height mm	容量 Capacity approx. ML	盖子 Lid
00B	30	14	24	10	79D/8
0B	41	18	37	25	79D/7a
1B	48	20	41	40	79D/5
2B	54	24	50	60	79D/4
3B	60	26	50	80	79D/4
4B	66	30	56	100	79D/3

CaO-FSZ氧化锆 / *Zirconia*

CaO-FSZ-坩埚 / *CaO-FSZ Crucibles*

圆柱形，平底

Cylindrical, flat base



尺寸编号 <i>Size No.</i>	外径 / Outer Ø mm	内径 / Inner Ø mm	高度 / Height mm	容量 / Capacity <i>approx. ML</i>
1 L	19	16	28	5
2 L	28	25	34	15
3 L	33	29	46	25
4 L	38	34	57	50
5 L	48	43	72	90
6 L	61	54	100	200
7 L	80	73	143	550

圆锥形，高身

Conical, tall shape



尺寸编号 <i>Size No.</i>	上口直径 / <i>upper</i> Ø mm	底直径 / Base Ø mm	高度 / Height mm	容量 / Capacity <i>approx. ML</i>
00 K	24	14	29	7
0 K	28	17	36	14
1 K	32	17	39	18
2 K	36	19	46	30
3 K	41	24	52	45
4 K	47	26	62	70
5 K	59	31	71	125
6 K	70	34	85	200
7 K	81	34	95	300
8 K	86	45	108	400

可以根据需求进行客户定制和特别尺寸的生产。

此目录中的所有产品都是根据标准DIN 40680 –

如有错误或疏漏，欢迎指正。

Special sizes and custom designs available on request.

All products listed in this catalogue are in accordance with DIN 40680 – subject to inadvertent modifications, errors and omissions.



Morgan Advanced Materials
Haldenwanger GmbH
Teplitzer Str. 27
84478 Waldkraiburg
Germany

T 0510-87182811-805
F 0510-87182826

wenwu.qu@morganplc.com



<http://www.haldenwanger.de>

摩根海登皇格已经获得以下国际认证: ISO 9001:2008, ISO 14001:2004, BS OHSAS 18001:2007
Morgan Advanced Materials Haldenwanger has achieved international ISO 9001:2008, ISO 14001:2004 and BS OHSAS 18001:2007 certification.

www.morganadvancedmaterials.com
www.haldenwanger.de

