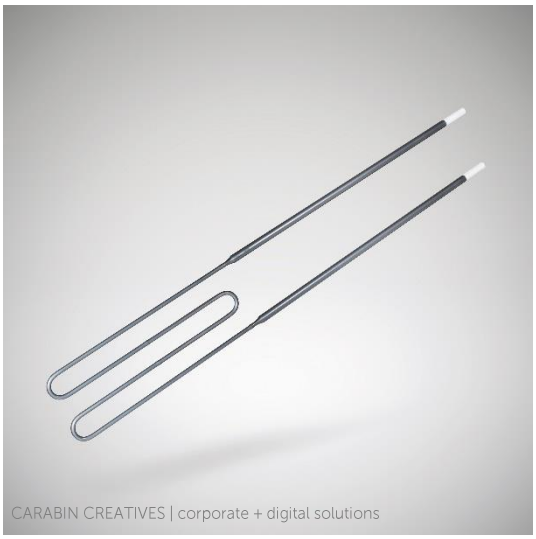
MolyCom® HOT ALONE WON'T **DO THE TRICK**

Molybdenum disilicide ($MoSi_2$) electric heating elements up to 1.850 °C (3362 °F) element temperature

MolyCom®-Ultra and **MolyCom®-Hyper** electric heating elements are metallic-ceramic materials mainly composed of molybdenum disilicide ($MoSi_2$). Above an application temperature of 1.000 °C the surface forms a protective high-temperature layer of pure quartz, providing the **MolyCom®** heating elements with excellent resistance to oxidation.



The elements can be used up to a surface temperature of maximum 1.850 °C in oxidizing atmospheres. MolyCom® are manufactured according to established industry standards. Their long service life and easy replacement contribute to high furnace utilization and low maintenance costs. The surface of the element forms a self-regenerating protective layer in an oxidizing atmosphere, making them suitable for aggressive environments. For specific process atmospheres, we also offer heating elements with a thicker SiO_2 layer.

Both new and used elements can be used together in series. The elements can also be combined with other molybdenum disilicide elements as an alternative or replacement, as the wear of the element only slightly affects performance.

Whether it's industrial standards, high-purity demands, or special resistance to oxidation – SCHUPP® Ceramics provides high-temperature technology tailored to your specific requirements. **MolyCom®-Ultra 1700, 1800, 1850, and 1900** are particularly durable and meet industrial standards.

MolyCom®-Hyper heating elements are composed of high-purity raw materials. Trace elements are reduced to a minimum (1/10th compared to competitors), making them ideal for high-purity, sophisticated applications. As a result, these heating elements exhibit excellent low-temperature oxidation (or 'pest') resistance and long service life. **MolyCom®-Hyper 1800, MolyCom®-Hyper 1900, and MolyCom®-Hyper 1800SC** (Super Clean) enable sintering of zirconia without discoloration, even above 1.600 °C. MolyCom®-Hyper 1800AP (Anti Pest) is a specialized element that offers a resistance to oxidation in the temperature range from 200 °C to 700 °C.

YOUR BENEFITS WITH MOLYCOM® AT A GLANCE

- ✓ MolyCom®-Ultra – Industrial Standard
- ✓ MolyCom®-Hyper – HIGH-PURITY
- ✓ Up to 1.850 °C element temperature, up to 1.800 °C furnace/kiln temperature
- ✓ High surface load and long service life
- ✓ U-, L-, W-shaped elements and other geometries
- ✓ Diameters from 3/6 mm to 12/24 mm and lengths from 25 mm to 2000 mm

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MATERIAL PROPERTIES OF MOLYCOM®-ULTRA 1700 / -ULTRA 1800 / -ULTRA 1850 / -ULTRA 1900

	MolyCom®-Ultra 1700	MolyCom®-Ultra 1800	MolyCom®-Ultra 1850	MolyCom®-Ultra 1900
Density	5.8 kg/dm³	5.8 kg/dm³	≥ 6.5 kg/dm³	7.0 kg/dm³
Bending strength at 20 °C (68 °F)	350 – 450 N/mm²	350 – 450 N/mm²	350 – 450 N/mm²	360 N/mm²
Porosity	< 1 %	< 1 %	< 1 %	< 1 %
Max. element temperature (under air)	1.700 °C (3092 °F)	1.780 °C (3236 °F)	1.820 °C (3308 °F)	1.850 °C (3362 °F)
Max. furnace/kiln temperature (under air)	1.550 °C (2822 °F)	1.650 °C (3002 °F)	1.750 °C (3128 °F)	1.800 °C (3272 °F)

MATERIAL PROPERTIES OF MOLYCOM®-HYPER 1800 / -HYPER 1800SC / -HYPER 1800AP / -HYPER 1900

	MolyCom®-Hyper 1800	MolyCom®-Hyper 1800SC[1)]	MolyCom®-Hyper 1800AP[2)]	MolyCom®-Hyper 1900
Density	5.7 kg/dm³	5.7 kg/dm³	5.7 kg/dm³	7,2 kg/dm³
Bending strength at 20 °C (68 °F)	350 – 450 N/mm²	350 – 450 N/mm²	350 – 450 N/mm²	400 – 500 N/mm²
Porosity	< 1 %	< 1 %	< 1 %	< 1 %
Max. element temperature (under air)	1.800 °C (3272 °F)	1.800 °C (3272 °F)	1.800 °C (3272 °F)	1.850 °C (3362 °F)
Max. furnace/kiln temperature (under air)*	1.750 °C (3182 °F)	1.750 °C (3182 °F)	1.750 °C (3182 °F)	1.800 °C (3272 °F)

* Depending on furnace size and type. | [1)]SC - Super Clean / [2)]AP- Anti Pest

IMPURITIES OF MOLYCOM®-HYPER 1800

[ppm]	Al	Fe	Mg	Ca	Ti	Na	K	Cr	Ni	Mn	Cu
Competitor	3500	1200	740	560	114	104	95	53	43	13	< 10
MolyCom®-Hyper	< 10	590	< 10	< 10	< 10	< 10	< 10	20	11	< 10	< 10

MAXIMUM RECOMMENDED ELEMENT TEMPERATURES IN VARIOUS ATMOSPHERES

	MolyCom®-Ultra 1700	MolyCom®-Ultra 1800	MolyCom®-Ultra 1850	MolyCom®-Ultra 1900
Air	1.700 °C (3092 °F)	1.780 °C (3236 °F)	1.820 °C (3308 °F)	1.850 °C (3362 °F)
Nitrogen (N_2)	1.600 °C (2912 °F)	1.700 °C (3092 °F)	1.750 °C (3182 °F)	1.700 °C (3092 °F)
Argon (Ar); Helium (He)	1.600 °C (2912 °F)	1.700 °C (3092 °F)	1.750 °C (3182 °F)	1.700 °C (3092 °F)
Hydrogen (H_2), dry	1.150 °C (2102 °F)	1.150 °C (2102 °F)	1.150 °C (2102 °F)	1.150 °C (2102 °F)

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AVAILABLE SIZES OF MOLYCOM®-ULTRA AND MOLYCOM®-HYPER

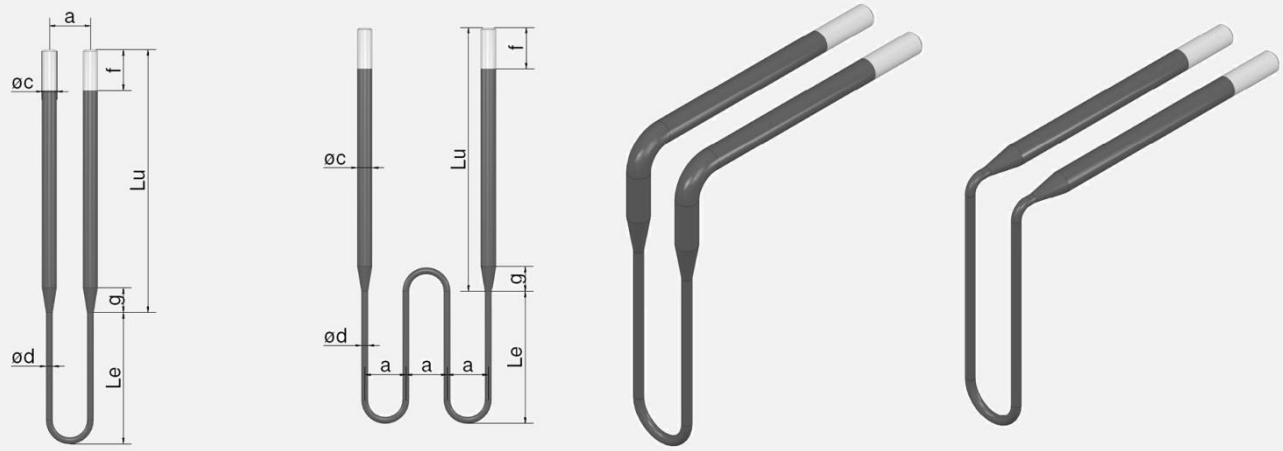
Size of element [mm]	Ø d	Ø c	Lu	Le	a	f	g
3/6*	3	6	60 – 400	25 – 500	25	25	15
4/9*	4	9	60 – 400	25 – 500	25	25	15
6/12*	6	12	70 – 1000	40 – 1400	50	45	25
9/18	9	18	70 – 1000	50 – 2000	60	75	30
12/24	12	24	100 – 1000	60 – 2000	80	100	40

MolyCom®-Ultra and -Hyper heating elements are manufactured by the Powder-Metallurgy-Technology. They are made in U-, W- and L-shapes, diameters 3/6 mm, 4/9 mm, 6/12 mm, 9/18 mm, 12/24 mm and in total length up to about 2000 mm and more. MolyCom® products are precisely manufactured and hot bended.

* Also available as MolyCom®-Hyper 1800, MolyCom®-Hyper 1900, MolyCom®-Hyper 1800SC and MolyCom®-Hyper 1800AP with a maximum length of Le with 650 mm and Lu with 500 mm.

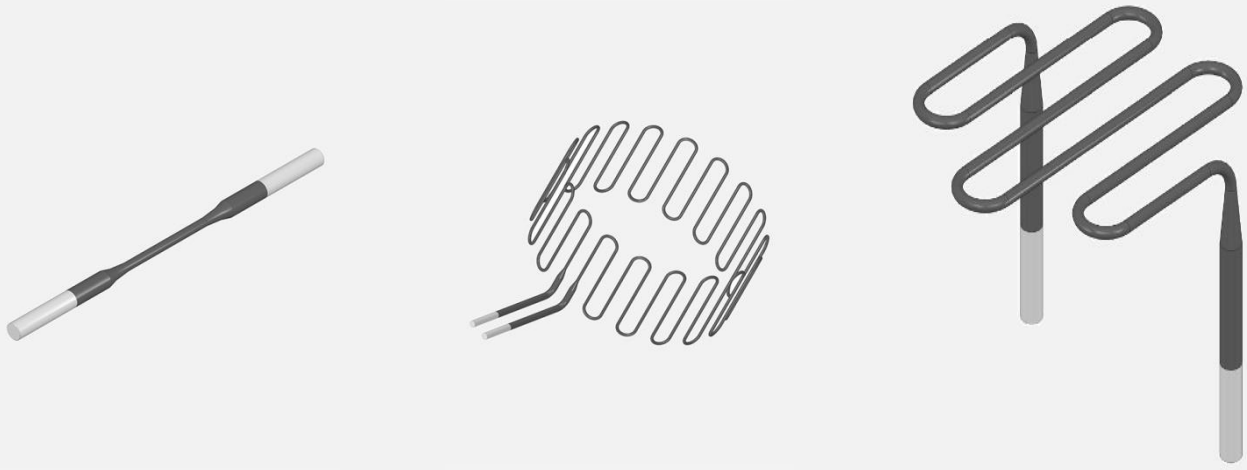
AVAILABLE STANDARD TYPES OF HEATING ELEMENTS

U-Shape	W-Shape and Multi-Shank	L-Shape (bent 90° at Lu)	L-Shape (bent 90° at Le)



AVAILABLE SPECIAL TYPES OF HEATING ELEMENTS

Rod-Type	Panorama-Shape	Meander-Shape



Other types upon request.

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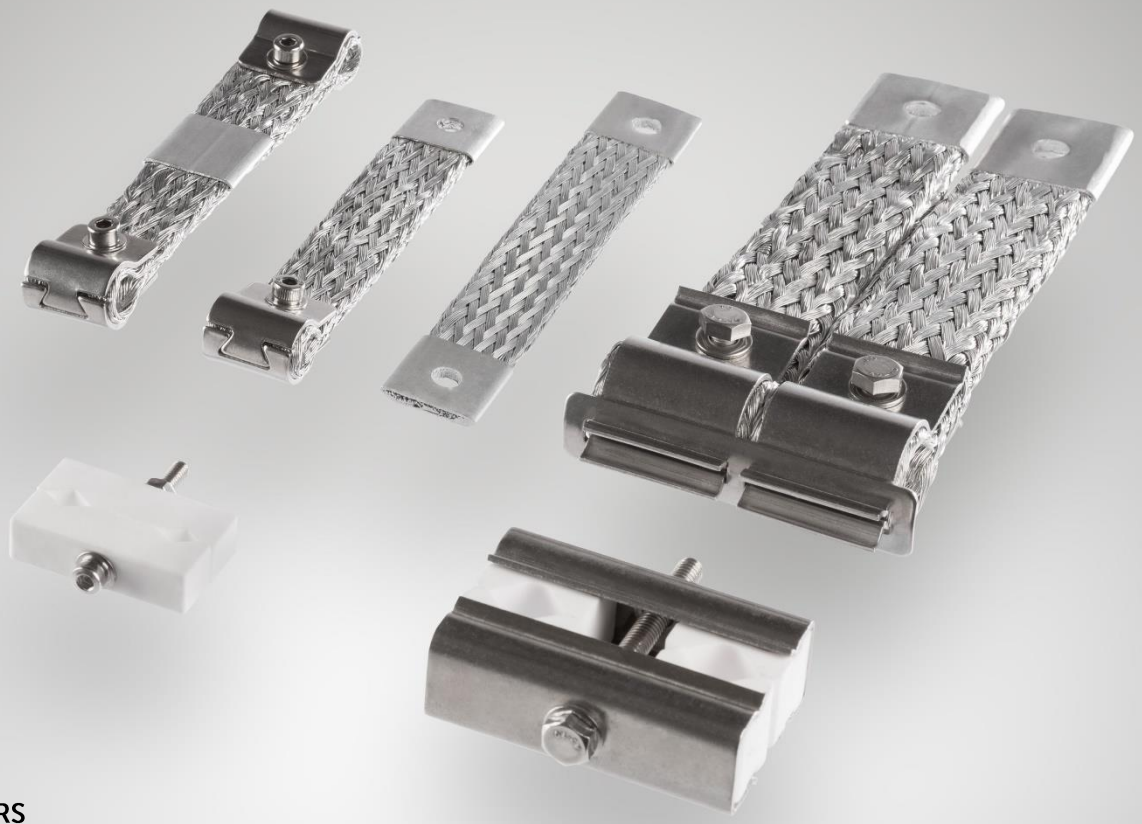
AVAILABLE ACCESSORIES FOR MOLYCOM® HEATING ELEMENTS

CONTACT STRAPS

- ✓ Power-to-Power
- ✓ Power-to-Element
- ✓ Element-to-Element



HOLDERS

- ✓ Single-shank holders
- ✓ Two-shank holders

All necessary accessories like contact straps, single- and two-shank holders, air nozzles and passage bricks are available.

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