CARBOLITE®
a VERDER company



CHAMBER FURNACE, CERAMIC FIBRE INSULATION

HTK KE

www.carbolite.com/products/vacuum-furnace/chamber-furnaces/htk-ke/

HTK KE

CHAMBER FURNACE, CERAMIC FIBRE INSULATION

Chamber furnaces of type HTK KE furnaces are insulated with ceramic fibre.



The rectangular design with a front door allows for easy loading and unloading. The HTK range is available in up to six different sizes. The smallest designs with a capacity of 8 litres and 25 litres are typically employed by laboratories for research and development. The 80 litre, 220 litre, 400 litre or 600 litre furnaces are predominantly used as pilot manufacturing systems or large scale production.

The furnaces can be used under a defined Oxygen mixture or 100 % pure Oxygen. The heating elements are CrFeAl, allowing temperatures of up to 1350 °C, or $MoSi_2$ that allow temperatures up to 1800 °C. Inert gas atmospheres are possible; however, poor atmospheric quality must be accepted. Due to the porous nature of the insulation, vacuum operation is limited to a rough vacuum range for short durations.

HTK KE

APPLICATION EXAMPLES

Ceramic Injection Moulding (CIM), debinding in air, sintering in air

HTK KE

STANDARD FEATURES

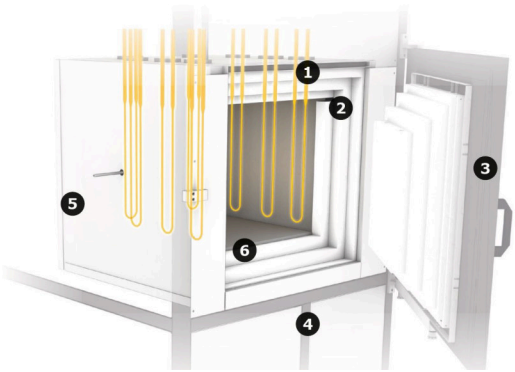
- Hydrogen partial pressure operation if requested
- Precisely controlled vacuum pumping speeds appropriate for powders
- Operation under air or with 100 % Oxygen in the HTK KE
- Data recording for quality management

HTK KE

VIEW INSIDE OF THE HTK KE

1. Frame
2. Water cooled vessel
3. Heating cassette
4. Groove for the sealing
5. Front door
6. Graphite insulation

Inside the chamber, heating elements are positioned at the bottom, left, right, and top sides of the furnace chamber allowing for improved temperature uniformity. For larger volumes, the back wall and front are equipped with heating elements to maintain excellent temperature uniformity. The HTK W, HTK MO, HTK GR and HTK KE furnaces are surrounded by a water cooled vessel; thus classifying, the HTK systems as a cold wall furnace. The cooling water is guided through the double walled vessel.



View inside HTK KE

HTK KE

TECHNICAL DATA

DIMENSIONS AND CAPACITY

Model	Insulation material	External H × W × D (mm)	Transport weight (kg)	Volume (l)	Usable without retort H × W × D (mm)	Usable with retort H × W × D (mm)
HTK 8 KE/13-1G	Ceramic fibre	2100 × 1300 × 1100	1200	8	200 × 200 × 200	180 × 180 × 200
HTK 25 KE/13-1G	Ceramic fibre	2200 × 1900 × 1800	1700	25	250 × 250 × 400	230 × 230 × 400
HTK 80 KE/13-1G	Ceramic fibre	2300 × 2100 × 2200	2000	80	400 × 400 × 500	380 × 380 × 400
HTK 220 KE/13-1G	Ceramic fibre	2500 × 2300 × 2600	3000	220	600 × 600 × 600	560 × 560 × 560
HTK 400 KE/13-1G	Ceramic fibre	2500 × 2300 × 2600	3800	400	650 × 700 × 900	630 × 680 × 900
HTK 600 KE/13-1G	Ceramic fibre	2500 × 2500 × 2900	4500	600	650 × 750 × 1200	630 × 730 × 1200

TEMPERATURE AND CYCLE

Model	Tmax vacuum (°C)	Tmax atmospheric pressure (°C)	ΔT, 500–1500 °C (K), DIN 17052	Max. heat-up rate (K/min)	Cooling time (h)
HTK 8 KE/13-1G	1100	1350	± 10	10	6
HTK 25 KE/13-1G	1100	1350	± 10	10	6
HTK 80 KE/13-1G	1100	1350	± 10	10	8
HTK 220 KE/13-1G	1100	1350	± 10	10	10
HTK 400 KE/13-1G	1100	1350	± 10	10	12
HTK 600 KE/13-1G	1100	1350	± 10	10	12–16

HTK KE

TECHNICAL DATA

ELECTRICAL SUPPLY

Model	Power (kW)	Voltage (V)	Current (A)	Series fuse (A)
HTK 8 KE/13-1G	8	400	20	3 × 63
HTK 25 KE/13-1G	16	400	40	3 × 63
HTK 80 KE/13-1G	45	400	3 × 65	3 × 80
HTK 220 KE/13-1G	80	400	3 × 120	3 × 160
HTK 400 KE/13-1G	120	400	3 × 180	3 × 250
HTK 600 KE/13-1G	200	400	3 × 290	3 × 315

VACUUM, COOLING AND GAS

Model	Leakage rate, clean, cold & empty (mbar l/s)	Vacuum range depending on pumping unit	Flow (l/min)	Max. inlet temperature (°C)	Nitrogen or Argon flow (l/h)	Controller
HTK 8 KE/13-1G	$5{\times}10^{-3}$	rough or fine vacuum	15	23	200–2000	on request
HTK 25 KE/13-1G	$5{\times}10^{-3}$	rough or fine vacuum	20	23	200–2000	on request
HTK 80 KE/13-1G	$5{\times}10^{-3}$	rough or fine vacuum	40	23	200–2000	on request
HTK 220 KE/13-1G	$5{\times}10^{-3}$	rough or fine vacuum	60	23	1000–10000	on request
HTK 400 KE/13-1G	$5{\times}10^{-3}$	rough or fine vacuum	100	23	1000–10000	on request
HTK 600 KE/13-1G	$5{\times}10^{-3}$	rough or fine vacuum	175	23	1000–10000	on request

Other gases on request.

CHAMBER FURNACE, CERAMIC FIBRE INSULATION

HTK KE

CONTACT US →

www.carbolite.com/contact-services/contact-form/?prefilltext=contact_form.request&product=G-3-UCF-B

REQUEST A QUOTE →

www.carbolite.com/contact-services/contact-form/?prefilltext=contact_form.quote_request&product=G-3-UCF-B

PRODUCT DATA SHEET →

www.carbolite.com/files/450737/p -shee tk-ke.pdf



CARBOLITE®
a VERDER company

www.carbolite.com/products/vacuum-furnace/chamber-furnaces/htk-ke/

© Carbolite Gero – www.carbolite.com / Content may be subject to modifications or corrections