

K-Cell Series

K-CELL series as effection cells for MBE

Putting ourselves in users' place, we provide each of our K-Cells with unique design to meet different materials.

Standard-Type K-Cell (THKC Series)



Features

- Compatible type that allows installation on MBE system of other manufacturer.
- Uses materials with consideration for low impurity and degas
- High temperature degas processing by vacuum baking furnace
- Easy replacement and maintenance for consumable parts such as a thermocouple, crucible, and reflector

Specifications

- Maximum heating temperature : 1300°C
- Heater : Top heat type
- Crucible material : PBN
- Crucible capacity : 10 to 40cc

Model	Crucible size (mm×cc)	A (mm)	B (mm)	C (mm)	Mounting flange	
					without shutter	with shutter
THKC-1300	φ13×10	φ13	30	>250	>ICF70	>ICF114
THKC-1900	φ19×25	φ19	35	>280	>ICF70	>ICF114
THKC-2500	φ25×40	φ25	38	>280	>ICF70	>ICF114

High-Temperature K-Cell (THKC-1300HI / THKC-1900HI)



Features (In addition to the features of the standard-type K-Cell described above)

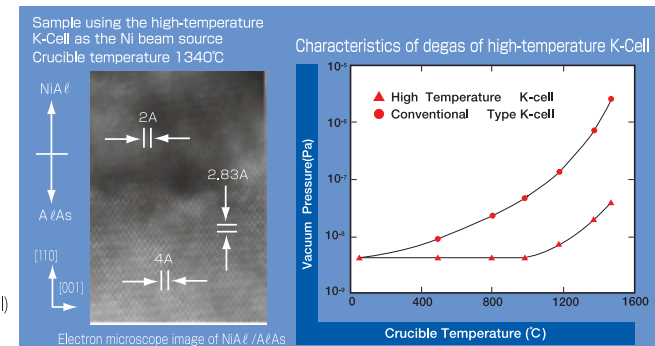
- Achieves a low degas feature.
- Maintains the vacuum of 10^{-8} Pa when heated to 1500°C with no evaporation material loaded (Measured in the ultra high vacuum chamber of EpiQuest)
- Enables accurate flux measurement due to low degas thereby achieving highly pure growth. (Excellent control of flux by EB gun)
- Can be used as an evaporation source for high melting point materials (e.g. Metal epitaxial, oxide superconductor)

Specifications

- Maximum heat- : 1500°C ing temperature
- Heater : Top heat type
- Crucible material : Alumina (4N Al_2O_3) (Others, Crucible material can be selected according to charging material)
- Crucible capacity : 10 or 25cc

Sample of data (High-Temperature K-Cell)

Data offered by courtesy of Kwansai Gakuin University. J. Appl. Phys. 69(4), 15 February 1991 2196-2200



Model	Crucible size (mm×cc)	A (mm)	B (mm)	C (mm)	Mounting flange	
					without shutter	with shutter
THKC-1300-H1	φ13×10	φ13	30	>250	>ICF70	>ICF114
THKC-1900-H1	φ19×25	φ19	35	>280	>ICF70	>ICF114

Super-mini K-Cell (KC-1300-S)



Features

This is an ultra-small K-cell that is suitable for analysis system.

Specifications

- Maximum heating : 1300°C temperature
- Crucible material : PBN
- Crucible capacity : 2cc
- Mounting flange size : ICF70

Dual K-Cell (DSGC-1400SH)



Features

A single cell port allows the user to use two kinds of materials.

Specifications

- Maximum heating tem- : 1300°C perature
- Crucible material : PBN
- Crucible capacity : 6cc
- Mounting flange size : ICF152

High Temperature K-Cell for Si (THKC-1000-HI)



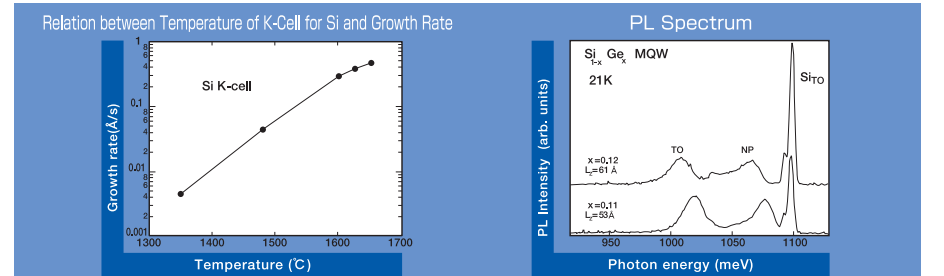
Features

THKC-1000-HI is the world-first K-cell developed for Si, which allows such high precision control of film thickness (0.005-0.5Å/s) as was conventionally impossible by an EB gun.

Specifications

- Maximum heating temperature : 1600°C
- Crucible capacity : 4cc
- Mounting flange size : >ICF70

Sample of data (High-Temperature K-Cell for Si) Data offered by courtesy of Tokyo University



ECR Radical Cell



Features

ECR Radical Cell adopts a unique mechanism to enable extremely high-density plasma production. The ion removal mechanism (magnetic field system) provided at the top of the cell allows ion removal.

Specifications

- Plasma production system : Microwave (2.45GHz) Discharge type
- Material of plasma chamber : PBN
- Ion removal unit : Magnetic field type
- Mounting flange : >ICF70
- Power supply Microwave supply : 10W to 100W

PL spectrum on h-GaN and c-GaN thin films made by means of the molecular beam epitaxial growth (MBE) method that uses ECR plasma cells, with microwave supply power being 60W and nitrogen flow rate being 1.0 sccm.

Data offered by courtesy of the Institute of Scientific and Industrial Research, Osaka University

