MoSi₂ heating elements
Molybdenum disilicide heater

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MoSi$_2$ Heater

**Standard grade**

JX heating elements have a high purity glassy silica layer, and this layer works as an oxidation protection layer with very low oxidation permeability. Therefore, the heating elements show less deformation, and long life use.

- High O$_2$ permeability
- Low O$_2$ permeability

**Structure of protective silica films on heating elements**

- **Conventional**: Many impurities break the network.
- **JX Heater**: High purity, Closely network

**Mechanism of oxidation of elements**

- Oxidation
- Growth
- Flaking
- Oxidation

**Reducing rate of element's diameter**

- **JX**
- **A**
- **B**
- **Nickel**
- **Competitor A**
- **Competitor B**

- **Nikko**
- **Competitor A**
- **Competitor B**

⇒ JX heater has given off an initial radiant heat for long term.
JX’s Super Clean Grade consists of high purity MoSi$_2$ and high purity SiO$_2$. Therefore, it is possible to suppress evaporation of the impurities from a heater. This heating element is used by annealing of the wafer for semiconductors, high purity quartz, etc.

$\Rightarrow$ SC grade has little evaporation of impurities and it is effective in reducing discoloration.
We can produce the heating element suitable for customer needs. We reduce the numbers of terminal, which causes energy loss. Therefore it is possible with our heater to have a very uniform temperature distribution and saving energy.