



MOMENTIVE

performance materials

i21* Quartz Ingot

It's what you don't see that matters

Introducing i21 ingot, the newest addition to Momentive's solid fused ingot product portfolio.

The **near defect-free quality** of Momentive i21 ingot reduces the risk that particulate will adversely impact semiconductor yields. Using a **patent-pending process**, the product is manufactured as a solid cylinder to be virtually bubble free. The i21 ingot is designed to **minimize material waste** and closely match the final part size.

The new Momentive i21 quartz ingot is an excellent choice for semiconductor equipment manufacturers supporting the production of advanced 300mm wafers with sub-micron line widths. Common applications include single wafer etch chamber windows, batch wafer applications, and other components requiring excellent visual clarity.

Product features

- Ultra-low bubble content
- Near defect-free quality
- Homogeneous quality throughout ingot
- Available in several natural sand purities
- Low OH for high temperature processes

Performance benefits

- Reduced risk of particulate generation in semiconductor processes

Cost savings

Increased material utilization

- Ultimate high efficiency shape, in various diameters, reduces waste in solid disc manufacture
- Ultra-low defect density enables high yield during part fabrication

Ingot homogeneity reduces end-use cost of ownership

- Predictable performance drives higher yields and minimizes unexpected downtime



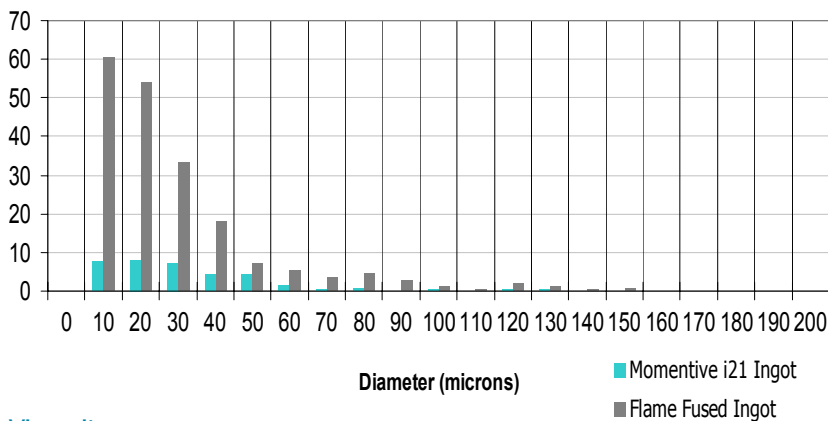
Product Characteristics

Purities

PURITY	BUBBLES		
	Standard	AA	i21
Natural: standard	124	124 AA	i21-24
Natural: low Al	N/A	N/A	i21-34
Natural: low alkali, low Al	N/A	144 AA	i21-44
Synthetic: <1ppm total impurities	N/A	012 AA	i21-12 under development



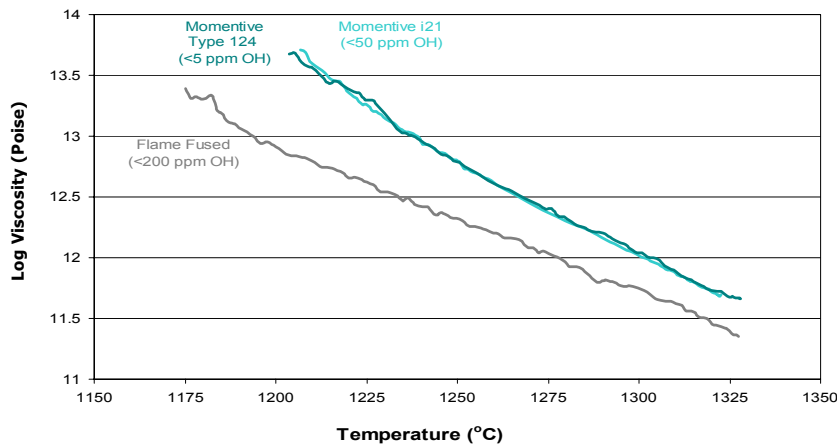
Micro Defect Density (#/cm³)



Defect density

- Extremely low bubble and inclusion content
- < 0.3 defects/100cm³ of defects larger than 200 microns

Viscosity



OH content of i21 quartz results in comparable viscosity to Momentive's Type 124 (electrically-fused) quartz

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