

## Single Crystal Substrates

<Basic Spec.> Impurity: Nitrogen<8ppm, B and Si<SIMS resolution

Orientation: (100) having off angle around 3 degree

Polishing: Regular roughness Ra<5nm, Fine polishing Ra<2nm

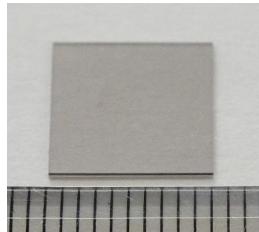
Size: 1x1 to 10x10mm, Thickness, 0.03-3mm

<Special Spec.> Orientation: (110) and (111)

Off angle: Between 0 to 5 degree selected toward plane

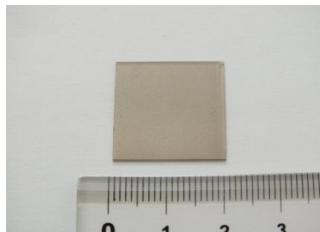
<High quality crystal>

Low FWHM of X-ray locking curve, smaller than 40 or 50arcsec.



**RH10103PP**

Mono crystal substrate  
10x10x0.3mm  
Both face polished

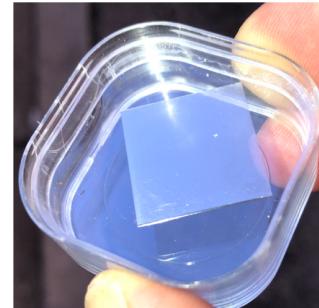


**RH20205PP**

Mosaic substrate  
20x20x0.5mm

## Mosaic Substrate

- \* Jointing 2 to 9 mono-crystals
- \* Each crystal is (100) orientation
- \* Size: <30x30mm, Thickness 0.05-2mm



## Epi-Substrate

- 1> B-doped epitaxial layer grown on regular substrate  
B concentration:  $2 \times 10^{16}$ - $1 \times 10^{17}$ /cm<sup>3</sup>, Thickness: 0.5-10μm  
Mobility: 1,500cm<sup>2</sup>/Vs or more
- 2> High quality epitaxial layer grown on regular substrate  
N concentration<0.1ppm, Thickness<50μm



**SEKI DIAMOND**  
SYSTEMS

780 Montague Expy. STE 506, San Jose, CA 95131

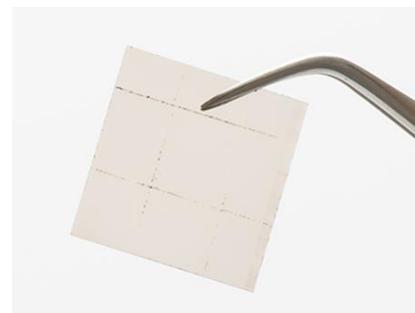
Ph:+1-408-520-4550, E-mail: [sales@sekidiamond.com](mailto:sales@sekidiamond.com)

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# EDP Large Single-crystal Diamond

EDP is fabricating single crystals diamond for various applications. CVD grown single crystals are lifted off from seed crystal by using of ion implantation. Mosaic crystal, consisting of 4 or 9 mono crystals is fabricating to realize the applications by using of large tool blank or large substrate.

EDP is a spinout venture of AIST Japan and is willing to contribute wide application of diamond as a supplier of single crystal diamonds.



1inch mosaic crystal

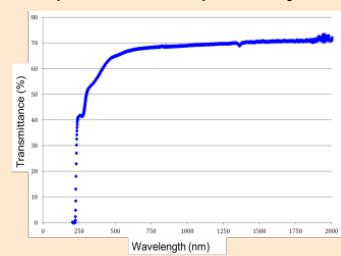
## Feature

- Supplying planer crystals which are pure and high crystallinity.
- Up to 28mm square plate can be supplied.
- Laser cutting for your required shape, square, triangle, round etc.
- Thickness variation is in between 0.01mm and 3.0mm.
- Polishing one or both face, even for mosaic plate of 28x28mm, and surface roughness is Ra<5nm or <2nm..

## Characteristics

- FWHM of (004) X-ray rocking curve is in 10 to 100 arcsec.
- Nitrogen concentration is 2 to 8ppm.
- Absorption in visible and UV light region, caused mainly by defect.
- Polishing of one face or both face is available with Ra<5nm, in special Ra<2nm.

Optical Transparency



## Tool Blank and Wear Resistant applications

Cutting inserts for precise cutting, dresser, die, scriber, jet nozzle, etc.

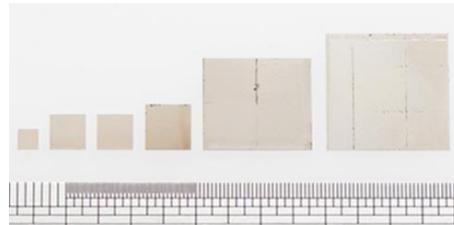


Item	Size (mm)
TN43B	4x3x1.2
TN63A	6x3x1.0
TN103A	10x3x1.0
TN55D	5x5x2.0
TN53CJ	5x2.5x1.5(110)

Longest edge is 28mm from mosaic crystal.

## Substrate for device research or optics

Large substrate of 10x10mm mono-crystal and 28x28mm mosaic-crystal suitable for your research on device.



Item	Size (mm)	Others
RN335	3x3x0.5	
RN333K**	2.5x2.5x0.3	(111) face
RN555P	5x5x0.5	One face polished
RN10106PP	10x10x0.6	Both face polished
RN25256P	25x25x0.6	One face polished

Non or B doped epi-substrate are fabricated. Off angle polishing for (100) and (111) face.

## Seed for Gem Stone Fabrication

Thin seed crystal for growing gem stone by CVD method. Very stable characteristics and wide variation of size promise you efficient production.

Item	Size(mm)	Others
SN553	5x5x0.3	
SN663	6x6x0.3	
SN772	7x7x0.2	
SN773P	7x7x0.3	Polishing
SN882	8x8x0.2	
SN883	8x8x0.3	

## Ultra thin plate



9 and 18mmφx50μm X-ray window

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**SEKI DIAMOND**  
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