

III/V - Semiconductors for Research and Development



Crystec

KRISTALLTECHNOLOGIE

Growth Method:	LEC (liquid encapsulated Czochralski-technique)	
Crystal Structure:	zinblend / sphalerite, cubic	
Standard Orientation:	(100) ± 0,5° (111) ± 0,5° (110) ± 0,5°	
Standard Sizes/ Standard Thickness:	∅ 2 inch	300 - 500 µm
	∅ 3 inch	500 µm

Gallium Arsenide

Lattice Constant: 0,5653 nm

GaAs	Semiinsulating	Semiconducting	Semiconducting
Dopant	Undoped	Si, Te	Zn
Type of Conductivity	N	N	P
Carrier Concentration (cm ⁻³)	-	> 5 x 10 ¹⁷	> 1 x 10 ¹⁸
Resistivity (Ωcm)	> 1 x 10 ⁷	-	-
EPD (cm ⁻²)	< 1 x 10 ⁵	< 7 x 10 ⁴	< 7 x 10 ⁴

Gallium Phosphide

Lattice Constant: 0,5451 nm

GaP	Semiinsulating	Semiconducting	Semiconducting	Semiconducting
Dopant	Cr	Undoped	S	Zn
Type of Conductivity	N	N	N	P
Carrier Concentration (cm ⁻³)	-	< 1 x 10 ¹⁶	1 x 10 ¹⁷ - 2 x 10 ¹⁸	1 x 10 ¹⁷ - 2 x 10 ¹⁸
Resistivity (Ωcm)	> 1 x 10 ⁷	-	-	-
EPD (cm ⁻²)	< 2 x 10 ⁵	< 2 x 10 ⁵	< 2 x 10 ⁵	< 2 x 10 ⁵

Gallium Antimonide

Lattice Constant: 0,6096 nm

GaSb	Semiconducting	Semiconducting	Semiconducting
Dopant	Undoped	Te	Si, Ge
Type of Conductivity	P	N	P
Carrier Concentration (cm ⁻³)	< 2 x 10 ¹⁶	2 x 10 ¹⁷ - 1,2 x 10 ¹⁸	3 x 10 ¹⁷ - 5 x 10 ¹⁹
Resistivity (Ωcm)	-	-	-
EPD (cm ⁻²)	< 5 x 10 ³	< 5 x 10 ³	< 5 x 10 ³

- Special orientations including off orientations, other sizes, thicknesses and both side polished wafers on request.

III/V - Semiconductors for Research and Development



CrysTec

KRISTALLTECHNOLOGIE

Growth Method: LEC (liquid encapsulated Czochralski-technique)
Crystal Structure: zinblende / sphalerite, cubic

Standard Orientation: (100) ± 0,5°
 (111) ± 0,5°
 (110) ± 0,5°

**Standard Sizes/
 Standard Thickness:**

Ø 2 inch	300 - 500 µm
Ø 3 inch	500 µm

Indium Arsenide

Lattice Constant: 0,6058 nm

InAs	Semiconducting	Semiconducting	Semiconducting
Dopant	Undoped	S	Zn
Type of Conductivity	P	N	P
Carrier Concentration (cm ⁻³)	< 2 x 10 ¹⁶	1 - 8 x 10 ¹⁸	1 x 10 ¹⁷ - 2 x 10 ¹⁹
Resistivity (Ωcm)	-	-	-
EPD (cm ⁻²)	< 5 x 10 ⁴	< 5 x 10 ⁴	< 5 x 10 ⁴

Indium Phosphide

Lattice Constant: 0,5869 nm

InP	Semiinsulating	Semiconducting	Semiconducting	Semiconducting
Dopant	Fe	Undoped	S	Cd
Type of Conductivity	N	N	N	P
Carrier Concentration (cm ⁻³)	-	6 x 10 ¹⁵ - 3 x 10 ¹⁶	1 x 10 ¹⁷ - 2 x 10 ¹⁸	5 x 10 ¹⁷ - 3 x 10 ¹⁸
Resistivity (Ωcm)	> 1 x 10 ⁷	-	-	-
EPD (cm ⁻²)	< 1 x 10 ⁵	< 1 x 10 ⁵	< 5 x 10 ⁴	< 5 x 10 ³

Indium Antimonide

Lattice Constant: 0,6479 nm

InSb	Semiconducting	Semiconducting	Semiconducting
Dopant	Undoped	Te	Ge
Type of Conductivity	N	N	P
Carrier Concentration (cm ⁻³)	8 x 10 ¹³ - 2 x 10 ¹⁴	2 x 10 ¹⁴ - 3 x 10 ¹⁵	3 x 10 ¹³ - 1 x 10 ¹⁸
Resistivity (Ωcm)	-	-	-
EPD (cm ⁻²)	< 10 ³	< 10 ³	< 10 ³

► Special orientations including off orientations, other sizes, thicknesses and both side polished wafers on request.