

Shin-Etsu Handotai Compound Semiconductor Materials & LED

What's Compound Semiconductor?

Silicon is one of the single element semiconductors. Compound semiconductor is a group of materials consisting of two or more elements that show semiconductor characteristics. Since 1975, Shin-Etsu Handotai has had honorably over-40-year history producing compound semiconductor materials.

Our Items

Periodic Table Group III-V

GaP (Gallium phosphorus)

GaAs (Gallium arsenide)

GaAsP (Gallium arsenide phosphorus)

AlGaAs (Aluminum gallium arsenide)

AlGaInP (Aluminum gallium indium phosphorus)

Form, Manufacturing method

Single Crystal · Wafer · Liquid phase Epitaxial Wafer

Poly · Single Crystal · Wafer

Vapor phase Epitaxial Wafer (GaP Substrate)

MOCVD Epitaxial Wafer (GaAs Substrate)

MOCVD Epitaxial Wafer (GaAs Substrate)

PERIODIC TABLE GROUP		
III	IV	V
5 B	6 C	7 N
Boron	Carbon	Nitrogen
13 Al	14 Si	15 P
Aluminum	Silicon	Phosphorus
31 Ga	32 Ge	33 As
Gallium	Germanium	Arsenic
49 In	50 Sn	51 Sb
Indium	Tin	Antimony

Products Introduction

Crystal, Wafer

Taking advantage of the technology and experience as the No.1 Silicon wafer supplier, we provide the variety of the compound semiconductor products in the form of crystal or wafer.

GaP (Gallium phosphorus)

GaAs (Gallium arsenide)

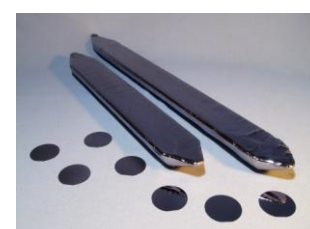
Manufacturing method

LEC method

GF method, HB method



GaP Crystals & wafers



GaAs Crystals(HB Method) & Wafers

Epitaxial Wafer

Gas phase epitaxial technology is one of the key technologies we have developed for a long time. We produce several types of epitaxial wafers.

Liquid phase (LPE)

Vapor phase (HVPE)

Organic metal (MOCVD)



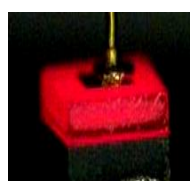
GaAs PW



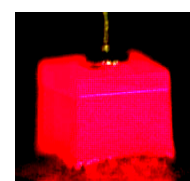
GaP Epi wafer

LED Chip

Utilizing knowledge of LED material, we supply LED chips of which wavelength between 560nm(dominant wavelength) and 940nm(peak wavelength).



AS Chip



TS/TM Chip



Metal Junction Chip

Main manufacturing base

(Compound Semiconductor relation)

(Japan)

Gunma pref.

Shin-Etsu Handotai Co.,Ltd Isobe Plant

Fukushima pref.

Iwaki Handotai Co.,Ltd.

(Taiwan)

Hsinchu City

Shin-Etsu Opto Electronic Co.,Ltd. (SOE)



Isobe Plant (SEH & SEC)



Iwaki Handotai