



## High Purity Elements & Compounds

### □ Germanium

**Germanium**, a brittle, silvery-white lustrous semiconductor material, is mainly used to manufacture germanium single crystal and germanium alloy as lens and windows in infrared night-vision devices, as component of glass telecommunications fiber-optics, and as semiconductor and substrate in electronic industry and in solar cell applications. Zone-Refined Germanium is of N Type and P type conductivity characteristics.



Germanium	<b>Ge</b>
Atomic No.	32
Atomic Weight	72.59
Density	5.33gm/cc
Melting Point	937.4 ° C
Boiling Point	2800° C
CAS No.	13494-80-9
H.S Code	8112.9210.90

No.	Item	Standard Specification	
1	Zone-Refined Germanium	≥99.999%	≥99.9999%
2	Impurity PPM <sub>wt</sub> Max Each	As	0.50
		Fe	0.10
		Cu	0.20
		Ni	0.20
		Pb	0.10
		Ca	-
		Mg	-
		Si	-
		Co	0.20
		In	-
		Zn	-
		Al	1.00
	Total	10ppm	1.0ppm
3	Resistivity Ohm.cm	≥50 (23+/-0.5°C)	≥50 (23+/-0.5°C)
4	Size	26x21x23 mm/1-2kg bar	
5	Packing	25kgs in polyethylene bag, then in wooden case	

### □ Monocrystalline Germanium

**Monocrystalline Germanium**, or Single crystal Germanium, is of silver grey color, with 0.001-50ohm.cm for N Type and 0.001-40ohm.cm for P type, which is mainly used to make germanium wafer for semiconductor, infrared optical lens etc.



No.	Item	Standard Specification	
1	Type	N type	P Type
2	Dopant	As, In, Sb	Ca
3	Resistivity/Carrier Lifetime	Carrier Lifetime (us)	
4	Resistivity Ohm.cm	0.1-0.9	-
		0.9-2.5	100
		2.5-4.0	150
		4.0-8.0	220
		8.0-16.0	350
	16.0-45.0	600	500
5	Diameter / Length	12-300mm, 150-200mm/ 140-300mm	
6	Packing	In plastic bag with carton box outside	

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