

## PRODUCT DATA SHEET

# Germanium Metal

## Introduction

Germanium is a hard, brittle, grayish white element. It is transparent to infrared light, which makes it useful for optical materials. It is widely used as a semiconductor and an alloying agent. Silicon-germanium alloys are used to manufacture low-cost and high-speed integrated circuits; germanium dioxide is used as a polymerization catalyst; and germanium tetrachloride is used as a dopant in fiber optic systems.

Germanium Metal	
Symbol	Ge
CAS Number	7440-56-4
EC Number	231-164-3
RTECS Number	LY5200000
Purity	99.999%
Appearance/Form	Greyish-white solid
Formula Weight	72.61
Specific Gravity	5.323@20°C
Electrical Resistivity	≥40 (ohm.cm)
Melting Point	937.4°C
Boiling Point	2830°C
Specific Heat	23.2 J.mol <sup>-1</sup> .K <sup>-1</sup>
Heat of Vaporization	334.0 kJ.mol <sup>-1</sup>
Heat of fusion	36.9 kJ.mol <sup>-1</sup>

Impurities	Typical,ppm	Maximum. ppm
Chromium(Cr)	< 0.1	1.0
Copper(Cu)	< 0.1	1.0
Cobalt(Co)	< 0.1	1.0
Aluminum(Al)	< 0.1	1.0
Magnesium(Mg)	< 0.1	1.0
Iron(Fe)	< 0.1	1.0
Nickel(Ni)	< 0.1	1.0
Antimony(Sb)	< 0.1	1.0
Selenium(Se)	< 0.1	1.0
Titanium(Ti)	< 0.1	1.0
Zinc(Zn)	< 0.1	1.0
Total Combined Metals	< 1.0	10.0

## Packaging

Ingots are packed in plastic bags and then packed in a wooden box for shipping. Other packaging options are available.

Contact us for slices, chips, and other dimensional requirements.

Material is shipped in packaging compliant with the United Nations/Department of Transportation (UN/DOT), the International Air Transportation Association (IATA), and the International Maritime Dangerous Goods (IMDG) code.

## Storage and Shelf Life

Germanium metal should be stored at room temperature in a tightly packed bag. It has a minimum shelf life of 24 months after delivery.

This product data sheet is provided for general information only. It is not intended, and shall not be construed, to warrant or guarantee the performance of the products described which are sold subject exclusively to written warranties and limitations thereon included in product packaging and invoices. All Indium Corporation's products and solutions are designed to be commercially available unless specifically stated otherwise.

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