ADVENT
RESEARCH MATERIALS

TECHNICAL DATA SHEET

Source: Wolfram Research / periodictable.com

CAS: 7440-69-9
Atomic Weight: 208.9804 g/mol

Bi
Bismuth
83

OVERVIEW

Full Name	**Bismuth (None)**
Symbol	**Bi**
Atomic Number	**83**
Series	**Poor Metal**
Block / Group / Period	**p-block | Group 15 | Period ...**
Electron Config.	**[Xe]6s24f145d106p3**
Phase at STP	**Solid**
Colour	**Gray**
Discovery	**1400**

THERMAL PROPERTIES

Melting Point	**271.3 °C**	°C
Melting Point (abs.)	**544.4 K**	K
Boiling Point	**1564 °C**	°C
Boiling Point (abs.)	**1837 K**	K
Heat of Fusion	**10.9 kJ/mol**	kJ/mol
Heat of Vaporization	**160 kJ/mol**	kJ/mol
Specific Heat (solid)	**122 J/(kg K)**	J/(kg·K)
Thermal Conductivity	**8 W/(m K)**	W/(m·K)
Thermal Expansion	**0.0000134 K-1**	K^-1

MECHANICAL PROPERTIES

Density (solid, STP)	**9.78 g/cm3**	g/cm3
Density (liquid, MP)	**10.05 g/cm3**	g/cm3
Young's Modulus	**32 GPa**	GPa
Shear Modulus	**12 GPa**	GPa
Bulk Modulus	**31 GPa**	GPa
Poisson's Ratio	**0.33**	
Speed of Sound	**1790 m/s**	m/s
Mohs Hardness	**2.25**	
Brinell Hardness	**94.2 MPa**	MPa

ELECTRICAL PROPERTIES

Type	**Conductor**	
Conductivity	**770000 S/m**	S/m
Resistivity	**1.3×10-6 m ?**	Ohm·m

MAGNETIC PROPERTIES

Type	**Diamagnetic**	
Vol. Susceptibility	**-0.00017**	
Mass Susceptibility	**-1.7×10-8 m3/Kg**	m3/kg

REACTIVITY

Valence	**5**	
Electronegativity	**2.02**	(Pauling)
Electron Affinity	**91.2 kJ/mol**	kJ/mol
Ionization Energies	**703, 1610**	kJ/mol

ATOMIC DIMENSIONS

Atomic Radius	**143 pm**	pm
Covalent Radius	**148 pm**	pm

CRYSTAL STRUCTURE

Structure	**Base-centered Monoclinic**	
Lattice Constant	**667.4, 611.7, 330.4 pm**	pm
Space Group	**C12/m1**	#12

ISOTOPES & NUCLEAR

Stability	**1.902587519026×1019 y**	
Stable Isotopes	**None**	
Isotopic Abundance	**209Bi100%**	
Known Isotopes	**184Bi ■ 219Bi (36 total)**	
Neutron Cross Sect.	**0.034**	barns

ELEMENTAL ABUNDANCES

Universe	**7×10-8%**	%
Earth's Crust	**2.5×10-6%**	%
Oceans	**2×10-9%**	%

HEALTH & SAFETY

DOT Hazard Class	**6.1**
RTECS Number	**EB2600000**
NFPA Health/Fire/Rx	**0 / 0 / 0**

Advent Research Materials Ltd. Technical data is provided as a guide only. Values may vary with material form, purity, and measurement conditions. No warranty is given as to accuracy or completeness. Not for regulatory use.