

boron (B)

general characterization
structure, chemical bond, general remarks
structure of α -rhombohedral boron
structure of β -rhombohedral boron
structure of tetragonal boron
structure of amorphous boron
liquid, metallic and quasicrystalline phases
other modifications of boron
electronic properties of boron-rich semiconductors, general remarks
electronic properties of icosahedral B_{12} clusters
values of charge density associated with various bonds, α -rhombohedral boron
energy gap, α -rhombohedral boron
band structure calculations, α -rhombohedral boron
energy levels for some symmetry points, α -rhombohedral boron
transition energies, effective mass and related electronic parameters, α -rhombohedral boron
band structure, β -rhombohedral boron
energy gap, β -rhombohedral boron
temperature and pressure dependence of the energy gap, β -rhombohedral boron
photoluminescence and Auger effect, β -rhombohedral boron
interband critical points, β -rhombohedral boron
transition energies obtained by various methods, β -rhombohedral boron
g-factor, electron spin and paramagnetic resonances, β -rhombohedral boron
effective masses, β -rhombohedral boron
electronic properties of tetragonal boron
electronic properties of amorphous boron
impurities, general properties
defects, general properties
impurities in α -rhombohedral boron
impurities in β -rhombohedral boron, general properties
traps in β -rhombohedral boron
ionization energies of shallow energy levels, β -rhombohedral boron
electron trap ionization energies, β -rhombohedral boron
phonon involved in trap generation, β -rhombohedral boron
intrinsic defects in β -rhombohedral boron, general remarks
substitutional impurities in β -rhombohedral boron, general remarks
interstitial impurities, voids, β -rhombohedral boron
interstitial accommodation of atoms in β -rhombohedral boron, occupancy of sites,
carrier type

further data on interstitials, β -rhombohedral boron

Curie constant and related parameters, β -rhombohedral boron

isomer shift and quadrupole splitting, β -rhombohedral boron

electron paramagnetic resonance, g -factor, β -rhombohedral boron

energy levels derived from photoconductivity, β -rhombohedral boron

surface reactions

Mössbauer and EPR data, amorphous boron

lattice vibrations in boron, general literature

vibrational properties of the B_{12} icosahedron

lattice parameters and related data, α -rhombohedral boron

pressure dependence of lattice parameters, bulk modulus, α -rhombohedral boron

optical phonons, vibrational data, α -rhombohedral boron

one-phonon and multiple phonon processes, α -rhombohedral boron

Raman active phonons

force constants, acoustic wave velocities, α -rhombohedral boron

lattice parameters and related data, β -rhombohedral boron

pressure dependence of lattice parameters, bulk modulus, thermal expansion, β -rhombohedral boron

optical phonons, ir-active lattice vibrations, β -rhombohedral boron

Raman-active phonons, β -rhombohedral boron

elastic constants and compliances, β -rhombohedral boron

further phonon properties, β -rhombohedral boron

Youngs and shear moduli, compressibility, sound velocity, β -rhombohedral boron

lattice parameters of doped β -rhombohedral boron

phonon frequencies of doped β -rhombohedral boron

vibrational ir-spectra, β -rhombohedral boron

figures and references to IR and Raman spectra, β -rhombohedral boron

lattice parameters of α - and β -tetragonal boron

absorption and Raman spectra in amorphous boron

Youngs and shear moduli, sound velocity, amorphous boron

transport properties in α -rhombohedral boron

transport properties in β -rhombohedral boron, general considerations

dynamical conductivity, β -rhombohedral boron

dc conductivity, β -rhombohedral boron

figures and references to the electrical conductivity in β -rhombohedral boron

hole concentration, Hall coefficient, β -rhombohedral boron

carrier mobilities and drift velocities, β -rhombohedral boron

Seebeck coefficient, β -rhombohedral boron

electrical properties of polycrystalline boron wafers
magneto-, elasto- and piezotransport parameters, β -rhombohedral boron
figures to transport properties of β -rhombohedral boron
electrical properties of amorphous boron
Seebeck and Poole-Frenckel effect in amorphous boron
switching times in amorphous boron
Schottky barriers between amorphous boron and gold electrodes
figures and references to optical properties of boron, general
optical properties of α -rhombohedral boron
optical spectra and dielectric constant, β -rhombohedral boron
photoeffects, work function and related parameters, β -rhombohedral boron
photoconductivity in β -rhombohedral boron
further data obtained from photoconductivity, β -rhombohedral boron
carrier lifetimes, thermal activation energies and related data, β -rhombohedral boron
figures and references to photoconductivity, β -rhombohedral boron
optical properties of amorphous boron
transformation and melting temperatures
Debye temperature, heat capacity, thermal conductivity, density, α -rhombohedral boron
magnetic susceptibility, α -rhombohedral boron
thermal diffusivity and conductivity, β -rhombohedral boron
density, Debye temperature, heat capacity, β -rhombohedral boron
magnetic susceptibility, β -rhombohedral boron
sound velocity, β -rhombohedral boron
hardness, β -rhombohedral boron
internal friction, shear modulus, β -rhombohedral boron
sound attenuation, phonon mean free path, β -rhombohedral boron
internal friction, thermal conductivity, amorphous boron
density, heat capacity, amorphous boron
magnetic susceptibility, amorphous boron

phosphorus (P)

structure, chemical bond

band structure, general aspects

energy gap

deformation potential

band-band exciton transitions and exciton binding energy

binding energies of valence band states

energy of critical points in the valence band structure

core level energies

plasmon excitation energy

effective masses

activation and excitation energies of impurities

lattice energies and structural parameters

thermal expansion

valence force constants

sound velocities

second order elastic moduli

bulk moduli and compressibility

phonon dispersion

optical phonon frequencies on the Γ -point

Grüneisen parameter

electrical resistivity, electrical and thermal conductivity

superconducting transition temperature

carrier concentration, Hall coefficient, Hall voltage and Hall mobilities

relaxation times, lifetimes, electron-phonon coupling constant

magnetoresistance, Seebeck coefficient

optical spectra

X-ray spectra

Raman and Brillouin spectra

dielectric constants

Debye temperature, heat capacity, density, melting point

arsenic (As)

structure, chemical bond

band structure, general

energy gap and band overlap energy

intervalence band and Fermi energies

interband transition and spin splitting energies

effective masses, g -factor

impurities and defect states

lattice parameters, thermal expansion, other structural parameters

data on lattice vibrations

sound velocities, elastic constants

compressibility, bulk and Young's modulus, Grüneisen parameter

carrier concentration, electrical conductivity and mobilities

magnetoresistance

Seebeck and Peltier coefficients, magneto-thermoelectric power

superconducting transition temperature

optical spectra

optical constants, dielectric constant

thermal conductivity

magnetic susceptibility, electron spin resonance

Debye temperature, heat capacity, density, melting point

antimony (Sb)

structure, chemical bond

band structure, energy gap

further data characterizing the band structure

intra- and interband energies

effective masses, g -factor, spin-splitting factor

deformation potentials

impurity data

lattice and structural parameters, thermal expansion

phonon dispersion relations and wavenumbers, sound velocities

elastic constants and related properties

transport mechanism, carrier concentrations and mobilities

Hall coefficient, Seebeck coefficient

scattering frequencies, mean free path

resistivity, magnetoresistivity

superconducting transition temperature

optical properties, dielectric constant

thermal conductivity

magnetic susceptibility

Debye temperature, heat capacity, density, melting point

bismuth (Bi)

crystal structure, chemical bond

band structure, general

energy gap and related energies

interband transition energies

effective masses

g -factors, spin splitting factor

deformation potentials

impurities

lattice and structural parameters, thermal expansion, atomic weight and volume

phonon dispersion relations and wavenumbers

sound velocities, elastic constants, magnetoacoustic attenuation

compressibility, Young's modulus, bulk modulus, Grüneisen parameters

transport mechanism, general

carrier concentrations and mobilities

resistivity and magnetoresistivity

Hall, Seebeck and Nernst-Ettingshausen coefficients

scattering times, mean free path, quantum size period length, plasmon energy

piezo- and elastoresistance

superconducting transition temperature

optical properties, dielectric constants

thermal conductivity

magnetic susceptibility, magnetostriction, Knight shift

Debye temperature, heat capacity, density, melting point

$\text{Bi}_{1-x}\text{Sb}_x$

crystal structure, chemical bond

band structure, general

energy gaps

further parameters characterizing the band structure

effective masses, anisotropy parameter

spin splitting factor

impurity states

lattice parameters

phonon dispersion relations, sound velocities, elastic constants

compressibility, Young's modulus, Debye temperature

transport mechanism, resistivity and conductivity

carrier concentrations and mobilities

relaxation time, magnetoresistance

Hall, Seebeck and related coefficients

optical properties, dielectric constant

thermal conductivity

magnetic properties

sulfur (S)

crystal structure, general

crystal structure, lattice and molecular parameters, orthorhombic α -modification

crystal structure, lattice and molecular parameters, monoclinic β -modification

crystal structure, lattice and molecular parameters, monoclinic γ -modification

crystal structure, lattice and molecular parameters, rhombohedral ρ -modification

crystal structure, lattice and molecular parameters, polymeric sulfur S_x

crystal structure, lattice and molecular parameters, orthorhombic lattices of S_{12} , S_{18} and S_{20}

molecules

crystal structure, lattice and molecular parameters, monoclinic lattices of S_7 and S_{10}

molecules

phase transitions under pressure

band structure, general, orthorhombic α -modification

energy gap and related energies, orthorhombic α -modification

melting point and dissociation temperatures, all modifications

phase transition data

phonon properties, general, orthorhombic α -modification

phonon properties of β -monoclinic and S_{12} -orthorhombic modification

phonon wavenumbers, orthorhombic α -modification

phonon modes of rhombohedral, monoclinic and S_{18} - and S_{20} -orthorhombic modifications

elastic moduli, mode Grüneisen parameters, sound attenuation, orthorhombic α -modification

compressibility, elastooptic properties, orthorhombic α -modification

thermal expansion, orthorhombic α -modification

Debye temperature, heat capacity, density, all modifications

enthalpies of sublimation, conversion and fusion, entropy of disorder, all modifications

self diffusion, orthorhombic α -modification

dislocations, crystal growth, orthorhombic α -modification

transport properties, general, orthorhombic α -modification

electrical conductivity, carrier mobilities, orthorhombic α -modification

polaron data, orthorhombic α -modification

hole and electron traps, carrier lifetimes, orthorhombic α -modification

piezoresistance, orthorhombic α -modification

optical spectra, orthorhombic α -modification

birefringence, orthorhombic α -modification

photoluminescence, photoconductivity, orthorhombic α -modification

dielectric constant, refractive index, orthorhombic α -modification

selenium (Se)

crystal structure, general

crystal structure, lattice and cell parameters, trigonal Se

crystal structure, lattice and cell parameters, monoclinic selenium (α , β , γ)

crystal structure, lattice and cell parameters, rhombohedral and orthorhombic selenium

phase transitions under pressure

band structure, trigonal Se

band structure, monoclinic Se

electronic properties of rhombohedral and orthorhombic selenium

energy gaps, trigonal Se

energy gap, monoclinic Se

interband transition energies, exciton binding energy, trigonal Se

effective masses, trigonal Se

deformation potentials, trigonal Se

impurities and defects

lattice properties, thermal expansion, trigonal Se

phonon dispersion curves, trigonal Se

phonon wavenumbers, Grüneisen parameters, trigonal Se

phonon wavenumbers, monoclinic Se

phonon wavenumbers, rhombohedral and orthorhombic selenium

effective charge, polaron coupling, Raman cross section, trigonal Se

sound velocity, trigonal Se

elastic moduli, trigonal Se

compression and bulk moduli, trigonal Se

piezoelectric coefficients, trigonal Se

Debye temperature, heat capacity, density, melting point, trigonal Se

Debye temperature, heat capacity, density, monoclinic Se

enthalpies and entropies, trigonal Se

vacancies and dislocations, crystal growth, trigonal Se

conversion enthalpy and energy, monoclinic to trigonal Se

crystal growth, monoclinic Se

transport mechanism, general, trigonal Se

transport properties, monoclinic Se

electrical conductivity, trigonal Se

carrier concentration and mobilities, trigonal Se

magnetoresistance, piezoresistance, trigonal Se

thermoelectric power, trigonal Se

recombination, trapping, trigonal Se

thermal conductivity, trigonal Se

photoconductivity, trigonal Se

optical spectra, Raman spectra, trigonal Se

optical spectra, Raman spectra, monoclinic Se

optical absorption, plasma frequency, trigonal Se

dielectric constants, refractive index, trigonal Se

dielectric constant, refractive index, monoclinic Se

nonlinear optics, trigonal Se

magnetic properties, trigonal Se

tellurium (Te)

- crystal structure, cell parameters
- band structure
- energy gap
- further energy parameters, Fermi energy
- effective masses
- near-gap structures of energy bands
- acceptor states
- segregation and precipitation of impurities
- phonon dispersion relations
- phonon frequencies
- sound velocities and sound absorption
- elastic moduli
- compressibilities
- thermal expansion
- piezoelectric coefficients
- Debye temperature, heat capacity, density, melting point
- heat of fusion and vaporization, vapor pressure
- plastic deformation
- transport mechanism
- intrinsic transport properties
- magnetoresistance
- extrinsic transport properties
- piezoresistance
- relaxation times of transport phenomena
- thermoelectric power
- thermal conductivity
- superconductivity
- optical constants
- further optical properties
- dielectric constants

$\text{Se}_x\text{Te}_{1-x}$

- general characterization
- electronic properties
- crystal structure
- phonon dispersion and wavenumbers
- elastic moduli, compressibility
- piezoelectric coefficients
- melting point, density and related properties
- crystal growth
- transport properties, general
- conductivity, Hall effect, Seebeck coefficient
- mobility, magnetoconductivity
- piezoresistivity
- optical spectra
- dielectric constant
- nonlinear optics

IA_x-IB_y compounds

general characterization

crystal structure of IA-IB₂ compounds

crystal structure of IA-IB₅ compounds

crystal structure of IA₂-IB₃ compounds

crystal structure IA₃-IB₇ compounds

CsAu

crystal structure, chemical bond

band structure

energy gap, interband transition energies

transport properties

further properties

RbAu

crystal structure, chemical bond

band structure

transport and further properties

I_x-V_y compounds

crystal structure of I_3-V compounds

lattice parameters of I_3-V compounds

crystal structure, lattice parameters of I_xI_y-V compounds

chemical bond

NaSb, KSb, RbSb, CsSb

crystal structure, lattice parameters

semiconducting properties

melting points

Li_3Sb , Li_3Bi

crystal structure, chemical bond

physical properties

Na_3Sb

crystal structure, chemical bond

band structure, energy gap

transport and further properties

K_3Sb

crystal structure, chemical bond

band structure, energy gap

interband transition energies

lattice, transport and further properties

Rb_3Sb

crystal structure, chemical bond

band structure, energy gap

transport, optical and further properties

Cs_3Sb

crystal structure, chemical bond

band structure and energies, impurity levels

transport and further properties

Rb_3Bi , Cs_3Bi

crystal structure, chemical bond

physical properties

K_3Bi , Na_3Bi

crystal structure, chemical bond

Na_2KSb

crystal structure, chemical bond

band structure and energies, impurity levels

lattice and transport properties

optical properties

K_2CsSb

crystal structure, lattice parameter

physical properties

Na_2RbSb , Na_2CsSb , K_2RbSb , Rb_2CsSb

crystal structure, physical properties

K_2NaSb

crystal structure

cupric oxide (CuO)

crystal structure, lattice parameters

electronic properties

lattice properties

transport and optical properties

magnetic properties, heat capacity, density

cuprous oxide (Cu_2O)

crystal structure, lattice parameters

band structure, band energies

effective masses

excitons

phonon dispersion, phonon frequencies

sound velocities, elastic moduli

Young's and shear moduli, compressibility

thermal expansion, Grüneisen parameter

transport properties

optical properties

dielectric constant

magnetic properties

Debye temperature, density, melting point

diffusion coefficients

copper sulfides (Cu_2S , Cu_{2-x}S)

crystal structure, lattice parameters

energy gap, effective masses

compressibility and thermal expansion

transport properties

optical and further properties

copper selenides (Cu_2Se , Cu_{2-x}Se)

crystal structure, lattice parameters

electronic and transport properties

optical and further properties

copper tellurides (Cu_2Te , Cu_{2-x}Te)

crystal structure, lattice parameters

physical properties

silver oxides (Ag_xO_y)

crystal structure, lattice parameters

physical properties of AgO

energy gap, effective masses, Ag_2O

phonon frequencies, Ag_2O

transport and optical properties, Ag_2O

further properties, Ag_2O

silver sulfide (Ag_2S)

crystal structure

band structure, effective masses, α -modification

lattice and further properties, α -modification

transport properties, α -modification

magnetic properties, α -modification

energy gap, effective masses, β -modification

transport and further properties, β - and γ -modification

silver selenide (Ag_2Se)

crystal structure, lattice parameters

energy gap, effective masses

transport properties

optical and further properties

silver tellurides (Ag_xTe_y)

crystal structure, lattice parameters

physical properties, α - Ag_2Te

physical properties, β - and γ - Ag_2Te

Au tellurides

crystal structure, lattice parameters

ternary I-VI compounds

crystal structure, lattice parameters

magnesium silicide (Mg_2Si)

band structure, energy gap

intra- and interband transitions, effective masses

crystal structure, chemical bond

lattice parameter, thermal expansion, compressibility

phonon dispersion relations and frequencies

sound velocities, elastic moduli

Debye temperature, heat capacity, density, melting point

electrical and thermal transport properties

optical properties, dielectric constant

magnesium germanide (Mg_2Ge)

band structure, energy gap

intra- and interband energies, donor levels, deformation potential, effective masses

crystal structure, chemical bond

lattice parameters, thermal expansion, compressibility

phonon dispersion relations and frequencies

sound velocities, elastic moduli

Debye temperature, heat capacity, density, melting point

electrical and thermal transport properties

optical properties, dielectric constant

magnesium stannide (Mg_2Sn)

band structure, energy gap

intra- and interband energies, effective masses, deformation potentials

crystal structure, chemical bond

lattice parameter, thermal expansion, compressibility

Debye temperature, heat capacity, density, melting point

phonon dispersion relations and frequencies

sound velocity, elastic moduli

electrical and thermal transport properties

optical properties, dielectric constant

magnetic properties

magnesium plumbide (Mg_2Pb)

band structure, band parameters and effective masses

crystal structure, chemical bond

lattice parameter, thermal expansion, compressibility

Debye temperature, heat capacity, density, melting point

phonon frequencies

transport properties

solid solutions $\text{Mg}_2\text{X}_x\text{Y}_{1-x}$

physical properties

Ca_2Si , Ca_2Sn , Ca_2Pb

crystal structure, physical properties

BaSi₂, BaGe₂, SrGe₂

crystal structure, physical properties

II_x-V_y compounds: general tables

crystal structure and chemical bond of II₃-V₂ phosphides

crystal structure and chemical bond of II₃-V₂ arsenides

crystal structure and chemical bond of II-V₂ phosphides

crystal structure and chemical bond of II-V₂ arsenides

crystal structure and chemical bond of CdP₄

crystal structure and chemical bond of MgP₄

crystal structure and chemical bond of II-V compounds

structural data of the Mg - P system

structural data of the Mg - As system

structural data of the Zn - P system

structural data of the Zn - As system

structural data of the Zn - Sb system

structural data of the Cd - P system

structural data of the Cd - As system

structural data of the Cd - Sb system

Π_x - V_y solid solutions: general tables

structural data of Π_x - V_y solid solutions

magnesium arsenide (Mg_3As_2)

physical properties

zinc phosphide (Zn_3P_2)

band structure

interband transition energies, energy gap

spin-orbit and crystal field splitting energies

impurities and defects

crystal structure and chemical bond, lattice parameter, thermal expansion

sound velocities, further lattice properties

bond length, effective charge, electronegativities, ionicity, electron affinity

transport properties

optical properties, dielectric constant

chemical binding energies and shift

Schottky barrier height, work function

magnetic properties

Debye temperature, heat capacity, density, melting point

parameters of vaporization, formation, dissociation

zinc arsenide (Zn_3As_2)

band structure, energy gap

spin orbit and crystal field splitting, effective masses

impurities and defects

crystal structure, chemical bond, lattice parameter, thermal expansion

Debye temperature, heat capacity, density, melting point

sound velocities, further lattice properties

electronic and thermal transport properties

optical properties, dielectric constant

magnetic properties

parameters of vaporization, formation and decomposition

cadmium phosphide (Cd_3P_2)

band structure, energy gap

spin-orbit and crystal field splitting, interband transition energies

effective masses

g -factors, further band parameters

crystal structure and chemical bond, lattice parameters, thermal expansion

Debye temperature, heat capacity, density, melting point

sound velocities, further lattice parameters

bond lengths, effective charge, electronegativities and related parameters

carrier concentration, resistivity, carrier mobility

thermal conductivity, Lorenz number

magnetoresistance, thermoelectric power and other transport parameters

optical properties, dielectric constant

chemical binding energies and shifts, X-ray emission

photoluminescence, photoconductivity, laser radiation

magnetic properties

parameters of vaporization, condensation, dissociation, formation and decomposition

cadmium arsenide (Cd_3As_2)

band structure, general

near gap valence band structure, energy gap

interband and splitting band energies

effective masses

Fermi surfaces, Fermi energy

g-factor, further band parameters

impurities and defects

crystal structure and chemical bond, lattice parameters

phase transitions

thermal expansion

Debye temperature, heat capacity, density, melting point

sound velocities, further lattice properties

carrier concentration, resistivity, carrier mobility

magnetoresistance, piezoresistance

thermoelectric power, further transport parameters

Dingle temperature, quantum oscillations

optical properties, dielectric constants

thermal conductivity, Lorenz number, thermoelectrical figure of merit

parameters of vaporization, heats of dissociation, formation, sublimation, fusion

entropies, enthalpies, free energy

thin and amorphous films

some data on technical applications

solid solutions $\text{II}_{3-x}\text{II}_x\text{V}_2$

band structure, transition energies, $\text{Cd}_{3-x}\text{Zn}_x\text{As}_2$

lattice properties, $\text{Cd}_{3-x}\text{Zn}_x\text{As}_2$

electronic and thermal transport properties, $\text{Cd}_{3-x}\text{Zn}_x\text{As}_2$

special data on $\text{Cd}_{2.8}\text{Zn}_{0.2}\text{As}_2$

physical properties of $\text{Cd}_3\text{As}_{2-x}\text{P}_x$

physical properties of Cd_3AsP

physical properties of $\text{Cd}_3\text{As}_{1.4}\text{P}_{0.6}$

physical properties of $\text{Cd}_3\text{As}_{1.6}\text{P}_{0.4}$

physical properties of $\text{Cd}_{3-x}\text{Zn}_x\text{P}_2$

physical properties of $\text{Zn}_3\text{As}_{2-x}\text{P}_x$ and $(\text{Cd}_3\text{As}_2)_{1-x}(\text{Zn}_3\text{P}_2)_x$

zinc phosphide (ZnP_2)

band structure, energy gap, excitons, α -modification

impurities and defects, α -modification

crystal structure, chemical bond, lattice parameters, thermal expansion, α -modification

lattice vibrations, sound velocity, Young's modulus, α -modification

conductivity, carrier concentrations and mobility, α -modification

optical properties, α -modification

nonlinear optical parameters, α -modification

photo-, cathodo- and electroluminescence, photoconductivity, α -modification

photoresponse, Schottky barriers, α -modification

magnetic properties, α -modification

heat capacity, density, melting point, α -modification

parameters of vaporization and formation, free energy, α -modification

band structure, energy gap, effective masses, β -modification

photoconductivity and reflectivity spectra, β -modification

impurities and defects, β -modification

crystal structure, chemical bond, lattice parameters, thermal expansion, β -modification

resistivity, carrier concentrations and mobilities, β -modification

thermoelectricity, Schottky barrier heights, β -modification

dielectric constants, optical properties, β -modification

magnetic properties, β -modification

heat capacity, density, melting point, β -modification

parameters of formation and dissociation, free energy, β -modification

zinc arsenide (ZnAs_2)

band structure, band structure parameters

reflectivity, photoconductivity spectra

impurities and defects

crystal structure, chemical bond, lattice parameter, further lattice properties

Debye temperature, heat capacity, density, melting point

resistivity, carrier concentration and mobility, thermoelectric power and thermal conductivity

Schottky barrier heights

optical properties, dielectric constant

parameters of vaporization, sublimation, formation, dissociation, fusion, free energy

cadmium phosphide (CdP_2)

band structure, energy gap, β -modification

exciton and interband transition energies, β -modification

crystal structure and chemical bond, lattice parameters and properties, β -modification

optical properties, photoconductivity, β -modification

nonlinear optical parameters, β -modification

Schottky barrier heights, β -modification

magnetic properties, β -modification

heat capacity, density, melting point, β -modification

parameters of vaporization and dissociation, β -modification

cadmium arsenide (CdAs_2)

band structure parameters

impurities and defects

crystal structure and chemical bond, lattice parameters, thermal expansion

compressibility, Grüneisen coefficient

Debye temperature, heat capacity, density, melting point

electrical and thermal transport properties

optical properties, dielectric constants

magnetic properties

parameters of vaporization, dissociation, formation, fusion, free energy

physical properties of amorphous phase

solid solutions between II-V₂ compounds

physical properties

MgP_4

crystal structure, physical properties

MgAs_4

crystal structure, physical properties

ZnP_4 , CdP_4

crystal structure, lattice parameters, density

energy gap, crystal field splitting energy of CdP_4

transport properties, field emission of CdP_4

parameters of formation, dissociation and vaporization, entropy of CdP_4

CdAs_4

crystal structure, physical properties

CdP₄ - CdAs₄ solid solutions

physical properties, CdP₄-CdAs₄

ZnAs, CdAs

crystal structure, physical properties of ZnAs

crystal structure, physical properties of CdAs

zinc antimonide (ZnSb)

band structure, energy gap, interband transitions, Fermi surface

effective masses

crystal structure and chemical bond, lattice parameters

melting point, density, Debye temperature

electronic and thermal transport properties

refractive index

cadmium antimonide (CdSb)

band structure, energy gap

interband energies, effective masses, Fermi surface

crystal structure and chemical bond, lattice parameters

Debye temperature, density, melting point

resistivity, carrier mobilities, thermal conductivity

thermoelectric power, piezoresistance

refractive index, dielectric constant

solid solutions between II-V compounds

ZnSb - CdSb solid solutions ($\text{Zn}_x\text{Cd}_{1-x}\text{Sb}$)

zinc and cadmium antimonide (Zn_4Sb_3 , Cd_4Sb_3)

lattice parameters of Zn_4Sb_3

physical parameters of $\beta\text{-Zn}_4\text{Sb}_3$

lattice parameters and density of Cd_4Sb_3

electronic and transport parameters of $\beta\text{-Cd}_4\text{Sb}_3$

further parameters of $\beta\text{-Cd}_4\text{Sb}_3$

zinc and cadmium antimonide (solid solutions)

electronic properties

zinc and cadmium phosphides

properties of Zn_7P_{10} and Cd_7P_{10}

properties of Cd_6P_7

CdCl_2 , CdBr_2 , CdI_2 , HgCl_2 , HgBr_2 , HgI_2

crystal structure, chemical bond

cadmium dichloride (CdCl_2)

interband transition energies

lattice parameters and further lattice properties

optical properties, dielectric constant

cadmium dibromide (CdBr_2)

interband transition energies

lattice parameters and further lattice properties

optical properties, dielectric constant

cadmium diiodide (CdI_2)

band structure, energy gap

interband transition energies, further band parameters

lattice parameters and related properties

phonon wavenumbers, sound velocity, elastic moduli

optical properties, dielectric constants

mercury dichloride (HgCl_2)

physical properties

mercury dibromide (HgBr_2)

physical properties

mercury diiodide (HgI_2)

band structure, energy gap

interband transition energies, further band parameters

effective masses

lattice parameters and related properties

phonon dispersion and wavenumbers

sound velocities, elastic moduli

transport properties

optical properties, dielectric constant

III_x-VI_y compounds

crystal structure, chemical bond of III-VI compounds

general characterization of III_x-VI_y compounds other than III-VI and III₂-VI₃ compounds

general characterization of TlInSe₂ type compounds

gallium sulfide (GaS)

band structure, direct energy gap

direct exciton transition energies, exciton binding energy

indirect energy gap and exciton energies

interband transition energies, effective masses

crystal structure, lattice parameters, thermal expansion

Debye temperature, heat capacity, density, hardness, melting point

phonon dispersion and wavenumbers

elastic moduli

compressibilities, Grüneisen parameters

electrical and thermal conductivity

carrier mobilities, relaxation time, diffusion length

electron trapping levels

thermoelectric power

optical properties

dielectric constants, second order susceptibility

core level energies, photoelectric threshold

Schottky barrier heights

magnetic properties

heat of formation, entropy, vapor pressure

gallium selenide (GaSe)

crystal structure, chemical bond
band structure
direct energy gap
direct exciton gap
transition energies into excited direct exciton states
direct exciton binding energy and related parameters
exciton masses and g -factor
indirect energy gap
indirect exciton transition and binding energies
interband transition energies
 g -factors of electrons and holes
effective masses
crystal structure, lattice parameter, thermal expansion
Debye temperature, heat capacity, density, hardness, melting point
phonon properties, general
phonon dispersion and wavenumbers
sound velocity, elastic moduli
Poisson's ratio, compressibility
Grüneisen parameters
transport properties, general
electrical and thermal conductivity
activation energies for the electrical conductivity
carrier mobilities, Hall coefficient and related parameters
carrier lifetimes
trapping levels of charge carriers
thermoelectric power (Seebeck coefficient)
refractive index
absorption coefficient, reflectivity, reststrahlen band
dielectric constant
higher-order susceptibilities
core level energies, photoelectric threshold energy
Schottky barrier heights
magnetic properties
heat of formation, entropy

gallium telluride (GaTe)

band structure, energy gap

direct exciton gap

exciton binding energy, splitting energy

interband transition energies

effective masses

crystal structure, lattice parameters, thermal expansion

Debye temperature, heat capacity, density, hardness, melting point

phonon wavenumbers

sound velocity, compressibility, Grüneisen parameters

electrical and thermal conductivity

carrier mobilities, Hall coefficient

thermoelectric power (Seebeck coefficient)

absorption and reflection

refractive index, dielectric constants, second order susceptibility

core level energies, photoelectric threshold

Schottky barrier heights

heat of formation, entropy

indium sulfide (InS)

band structure, energy gap

interband transition energies, effective masses

crystal structure, lattice parameters, thermal expansion

heat capacity, density

phonon wavenumbers

compressibility

Grüneisen parameters

electrical and thermal conductivity, mobility

optical properties, dielectric constant

Schottky barrier height

magnetic properties

heat of formation, entropy

indium selenide (InSe)

band structure

indirect energy gap

indirect exciton data

direct energy gap

direct exciton data

interband transition energies

effective masses, polaron coupling constant and related parameters

crystal structure, lattice parameter, thermal expansion

Debye temperature, heat capacity, density, melting point

phonon wavenumbers

elastic moduli

compressibility, Grüneisen parameters

electrical and thermal conductivity

carrier mobilities

trapping and acceptor levels

thermoelectric power (Seebeck coefficient)

optical properties

dielectric constant

core level energies, Schottky barrier height

phase diagram, heat of formation, entropy

magnetic susceptibility

indium telluride (InTe)

energy gap, effective masses

crystal structure, lattice parameters, thermal expansion

heat capacity, density, hardness, melting point

phonon wavenumbers

compressibility, bulk modulus, Grüneisen parameter

electrical and thermal conductivity

carrier mobilities, diffusion

thermoelectric power (Seebeck coefficient)

dielectric constant

magnetic properties

heat of formation and transformation, entropy

work function, electron affinity

thallium sulfide (TlS)

energy gap, effective masses

crystal structure, lattice parameters, density, Debye temperature, heat capacity

phonon wavenumbers, mode Grüneisen parameters

electrical and thermal conductivity, carrier mobilities

optical properties

phase diagram, heat of formation, entropy

thallium selenide (TlSe)

band structure, energy gap

interband transition energies

effective masses

crystal structure, lattice parameter, thermal expansion

Debye temperature, heat capacity, density, melting point

phonon dispersion and wavenumbers

elastic moduli, compressibility, Young's modulus, Poisson's ratio

electrical and thermal conductivity

mobility, Hall coefficient

optical properties, dielectric constant

phase diagram, heat of formation, entropy

thallium telluride (TlTe)

effective masses

crystal structure, lattice parameters, density, heat capacity

electrical and thermal conductivity

Hall coefficient, mobility

thermoelectric power (Seebeck coefficient)

phase diagram, heat of formation, entropy



general characterization

band structure, direct and indirect exciton gaps

higher optical transition energies

lattice properties

transport properties

optical properties

$\text{GaSe}_x\text{Te}_{1-x}$

general characterization

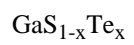
band structure, direct energy gap

direct exciton transition energies

lattice properties

electrical conductivity

absorption coefficient



phase diagram

$\text{Ga}_x\text{In}_{1-x}\text{Se}$

direct exciton gap

lattice properties, phase diagram

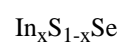
electrical conductivity, absorption coefficient

$\text{Ga}_x\text{In}_{1-x}\text{Te}$

energy gap, effective masses

lattice properties

mobilities, electrical and thermal conductivity



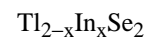
direct energy gap, direct exciton binding energy, reduced exciton effective mass

$\text{TlS}_{1-x}\text{Se}_x$

indirect energy gap

lattice properties

transport properties



physical properties

$\text{Tl}_x\text{In}_{1-x}\text{Te}$

transport properties

$\text{Ga}_x\text{-VI}_y$ compounds

crystal structure, lattice parameters, density

$\text{In}_x\text{-S}_y$ compounds

properties of In_5S_4

properties of In_6S_7

properties of In_3S_4

$\text{In}_x\text{-Se}_y$ compounds

properties of In_2Se

properties of In_4Se_3

properties of In_6Se_7

properties of In_5Se_7

properties of $\text{In}_{60}\text{Se}_{40}$, $\text{In}_{50}\text{Se}_{50}$ and $\text{In}_{40}\text{Se}_{60}$

properties of In_4Se_3 and In_5Se_6

$\text{In}_x\text{-Te}_y$ compounds

properties of In_4Te_3

properties of In_3Te_4

properties of In_2Te_5

$\text{Tl}_x\text{-S}_y$ compounds

properties of Tl_2S

properties of Tl_4S_3

properties of TlS_2

properties of Tl_2S_5

Tl_2Se

physical properties

$\text{Tl}_x\text{-Te}_y$ compounds

properties of Tl_2Te

properties of Tl_5Te_3

TlAlS₂

lattice properties

TlAlSe₂

lattice properties

TlGaS₂

energy gaps

lattice properties

transport properties

optical properties, dielectric constant

TlGaSe₂

band structure, energy gaps

higher optical transition energies, effective masses

lattice parameters, density, melting point, Debye temperature, heat capacity

phonon wavenumbers, Grüneisen parameters

transport properties

Schottky barrier height

optical properties, dielectric constant

TlGaTe₂

energy gap, effective masses

lattice and thermodynamical properties

transport properties

optical properties, dielectric constants

TlInS₂

energy gaps, effective masses

lattice properties

phonon wavenumbers

transport properties

optical properties, dielectric constant

TlInSe_2

energy gaps, effective masses

lattice properties

transport properties

optical properties, dielectric constant

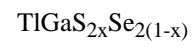
TlInTe_2

energy gap, effective masses

lattice properties

transport properties

optical properties, dielectric constant



physical properties

$\text{TlInS}_{2x}\text{Se}_{2(1-x)}$, $\text{TlInS}_{2x}\text{Te}_{2(1-x)}$
physical properties

$\text{TlGa}_x\text{In}_{1-x}\text{S}_2$, $\text{TlGa}_{1-x}\text{In}_x\text{Se}_2$, $\text{TlGa}_{1-x}\text{In}_x\text{Te}_2$, $\text{TlIn}_{1-x}\text{Tl}_x\text{Se}_2$

physical properties

III-VII compounds, general tables

general characterization

crystal structure of Tl-compounds

phase transitions

chemical bond

thallium fluoride (TlF)

physical properties

thallium chloride (TlCl)

band structure, energy gaps, TlCl (I) -phase

interband transition energies, TlCl (I) -phase

effective masses, TlCl (I) -phase

band structure, energy gaps, interband transition energies, TlCl (III)-phase

impurities and defects, TlCl (I)-phase

crystal structure, chemical bond, lattice parameters, interatomic distances, thermal expansion

Debye temperature, density, melting point, TlCl(I) phase

phonon dispersion relations and frequencies, TlCl(I)-phase

sound velocity, elastic moduli, TlCl(I)-phase

Grüneisen constant, compressibility, TlCl(I)-phase

transport properties, TlCl(I)-phase

optical properties

dielectric constants

thallium bromide (TlBr)

band structure, energy gaps, TlBr(I)-phase

interband transition energies, TlBr(I)-phase

effective masses, TlBr(I)-phase

band structure, energy gaps, interband transitions, TlBr(III)-phase

impurities and defects, TlBr (I)-phase

crystal structure, chemical bond, lattice parameters, thermal expansion

Debye temperature, density, melting point, TlBr(I)-phase

phonon dispersion relations and frequencies

elastic moduli, Grüneisen constant, compressibility, TlBr(I) -phase

transport properties, TlBr(I)-phase

optical properties

dielectric constants, TlBr(I)-phase

thallium iodide (TlI)

band structure, energy gaps and related parameters, TlI(I)-phase

band structure, energy gaps and related parameters, TlI(II)-phase

band structure, energy gaps and related parameters, TlI(III)-phase

crystal structure, chemical bond, lattice parameters, thermal expansion

density, melting point

phonon frequencies, TlI(III)-phase

compressibility

optical properties

dielectric constants



crystal structure, electronic and optical properties



crystal structure, electronic and optical properties

IV-V compounds, general tables

crystal structure, lattice parameters, chemical bond of SiP, GeP, SiAs, GeAs

crystal structure, lattice parameters, chemical bond of SiP₂, SiAs₂, GeAs₂

SiP, GeP

physical properties

SiAs

band structure, energy gaps

interband transition energies

transport parameters

crystal structure, lattice parameters, dielectric constant, melting point

GeAs

physical properties

SiP₂, SiAs₂

physical properties

GeAs₂

physical properties

IV-VI compounds, general tables

crystal structure, chemical bond of GeS, GeSe, SnS, SnSe

crystal structure, chemical bond and related data of GeTe, SnTe

germanium sulfide (GeS)

band structure, energy gap

interband transition energies

effective mass

impurities and defects

crystal structure, lattice parameters, heat capacity, density, melting point

phonon dispersion curves

phonon frequencies

intralayer force constants

transport properties

optical properties, dielectric constants

heat of formation, entropy

germanium selenide (GeSe)

energy gaps

crystal structure, lattice parameters, heat capacity, density, melting point

phonon dispersion relations and frequencies

transport properties

optical properties, dielectric constants

heat of formation

germanium telluride (GeTe)

band structure

energy gap, interband transitions

binding energies of germanium and tellurium levels

effective masses

deformation potentials

structural data

heat capacity, density, melting point

phonon wavenumbers

transport properties

optical properties, dielectric constant

magnetic properties

heats of formation and sublimation, entropy

tin sulfide (SnS)

band structure, energy gaps

effective masses

crystal structure, lattice parameters, thermal expansion

Debye temperature, heat capacity, density, melting point

phonon frequencies

intralayer and interlayer force constants

transport properties

optical properties, dielectric constants

heats of formation and sublimation, entropy

tin selenide (SnSe)

band structure, energy gap, effective masses

impurity levels

crystal structure, lattice parameters, Debye temperature, heat capacity, melting point

phonon frequencies

transport properties

optical properties, dielectric constants

heat of formation

tin telluride (SnTe)

band structure

energy gaps, interband transition energies

effective masses

deformation potentials

crystal structure, lattice parameters

thermal expansion, crystal binding energy

Debye temperature, heat capacity, density

phonon dispersion relations and frequencies

sound velocity, elastic constants

compressibility, Grüneisen parameter, effective charge

transport properties

optical properties, dielectric constant

magnetic properties

solidus temperatures, melting curve, heats of sublimation and formation

lead monoxide (PbO)

energy gaps

exciton transition energies

impurities and defects

crystal structure, lattice parameters

density, melting point

phonon frequencies

transport properties

optical properties, dielectric constant

lead sulfide (PbS)

energy gap

critical point energies

binding energies of core levels

pseudopotential form factors

effective masses, conduction band, Fröhlich coupling parameter, Fermi level

g -factors of electrons and holes

deformation potentials

impurities and defects

crystal structure, lattice parameters, thermal expansion

Debye temperature, heat capacities, density, melting point

phonon dispersion and frequencies

sound velocity, elastic moduli

bulk moduli, Debye-Waller factor, Grüneisen constant

transport properties

optical properties, dielectric constants

lead selenide (PbSe)

energy gap and band structure

critical point energies

core to conduction level transitions

pseudopotential form factors

effective masses, Fermi level

g -factors of electrons and holes

band parameters, deformation potentials

impurities and defects

crystal structure, lattice parameters, thermal expansion

Debye temperature, density, melting point

phonon frequencies, sound velocities

elastic moduli, Grüneisen constant

transport properties

optical properties, dielectric constant

lead telluride (PbTe)

general characterization, band structure

energy gaps

critical point energies

core to conduction level transitions

effective masses

Fröhlich coupling constant, Fermi level

g -factors of electrons and holes

band parameters, deformation potential

impurities and defects

crystal structure, lattice parameters, thermal expansion

Debye temperature, heat capacities, density, melting point

phonon dispersion, phonon frequencies

sound velocities, elastic moduli

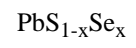
bulk modulus, Grüneisen constant

carrier concentration, mobilities

magnetotransport, carrier lifetimes

thermal conductivity

optical properties, dielectric constants



physical properties

$\text{PbSe}_{1-x}\text{Te}_x$

physical properties

$\text{Pb}_{1-x}\text{Sn}_x\text{Se}$

general characterization, energy gap, effective masses

impurities and defects

lattice properties

transport properties

optical properties, dielectric constant, magnetic susceptibility

$\text{Pb}_{1-x}\text{Sn}_x\text{Te}$

general characterization

band structure, energy gap and interband parameters

further band parameters, effective masses

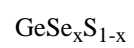
impurities and defects

phonon properties, elastic moduli

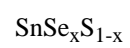
transport properties

optical properties, dielectric constant

various further properties



physical properties



physical properties

IV-VI₂ compounds, general tables

crystal structure, lattice parameters of GeO₂, SnO₂, PbO₂

crystal structure, lattice parameters, chemical bond of SiS₂, SiSe₂

crystal structure, lattice parameters, chemical bond of GeS₂, GeSe₂

crystal structure, lattice parameters, chemical bond of SnS₂, SnSe₂, SnS_xSe_{2-x}

germanium dioxide (GeO_2)

band structure, energy gaps

lattice properties

heat capacity, density, melting point

phonon frequencies

elastic, bulk and torsion moduli

electrical conductivity

optical properties, dielectric constant

entropy, heat of formation

germanum disulfide (GeS₂)

energy gap, interband transition energies

crystal structure, lattice parameters, heat capacity, melting point, transformation heat

phonon frequencies

dielectric constants

germanium diselenide (GeSe₂)

energy gaps, interband energies

crystal structure, lattice parameters, heat capacity, melting point

phonon frequencies

resistivity

optical properties, dielectric constants

heat of formation, entropy

tin dioxide (SnO_2)

band structure, band parameters

impurities and defects

crystal structure, lattice parameters, thermal expansion

Debye temperature, heat capacity, density, melting point

phonon dispersion and frequencies

sound velocities, elastic moduli

bulk and torsional moduli, mode Grüneisen parameters

transport properties

thermal conductivity

optical properties, dielectric constants

entropy, heat of formation

tin disulfide (SnS_2)

band structure, energy gaps

interband transitions of higher energy

crystal structure, lattice parameters

phonon dispersion, phonon frequencies

transport properties

optical properties, dielectric constants

heat capacity, density, melting point

heat of formation, entropy

tin diselenide (SnSe_2)

band structure, energy gaps

interband transitions of higher energy

effective masses

impurities and defects

crystal structure, lattice parameters, density, melting point

phonon dispersion, phonon frequencies

elastic moduli, interlayer force constants

electrical and thermal transport properties

optical properties, dielectric constants

heat of formation, entropy

lead dioxide (PbO_2)

physical properties



physical properties

Si_2Te_3

band structure, energy gap

effective masses

crystal structure, chemical bond of Si_2Te_3 and SiTe_2

electrical and thermal transport properties

optical properties

heat capacity, density, melting point

heat of formation, entropy

Sn_2S_3 , PbSnS_3 , SnGeS_3 , PbGeS_3

energy gaps

crystal structure, chemical bond of Sn_2S_3 , PbSnS_3

crystal structure, chemical bond of SnGeS_3 , PbGeS_3

heat capacity, density, heat of formation

phonon frequencies

transport properties

optical properties, dielectric constants

lead difluoride (PbF_2)

energy gap, interband and core transition energies

crystal structure, lattice parameters, thermal expansion, phase transitions

Debye temperature, heat capacity, density, melting point

phonon dispersion relations and wavenumbers

elastic moduli and compliances

compressibility, bulk modulus and other lattice properties

optical properties

dielectric constants

lead dichloride (PbCl_2)

energy gaps

exciton parameters, interband transition energies

crystal structure, chemical bond, lattice parameters

density, melting point

optical properties, dielectric constants

lead dibromide (PbBr_2)

energy gap, further band structure parameters

crystal structure, lattice parameters

density, melting point

optical properties, dielectric constants

lead diiodide (PbI_2)

band structure

energy gaps, band edge transition energies

free exciton parameters

diamagnetic shift, bound excitons

interband transition and spin orbit splitting energies

core transition energies, core and valence band peak levels

effective masses, g -factors

crystal structure, lattice parameters, thermal expansion

density, melting point

phonon dispersion and wavenumbers

sound velocities, elastic moduli

Grüneisen parameters, effective charge, force constants

carrier mobilities

optical properties, dielectric constants

luminescence, stimulated emission

arsenic oxide (As_2O_3)

crystal structure, chemical bond, lattice parameters

physical properties

arsenic sulfide (As_2S_3)

band structure, energy gaps

interband transition energies, work function

crystal structure, chemical bond, lattice parameters

heat capacity, melting point

phonon properties (general), phonon frequencies

mobility, resistivity

optical properties, dielectric constant

photoconductivity, luminescence

arsenic selenide (As_2Se_3)

band structure

energy gaps

spin splitting and interband transition energies

peaks and shoulders in the ϵ_2 spectra

core level energies

impurities and defects

crystal structure, chemical bond, lattice parameters

heat capacity, melting point

phonon properties, general

phonon frequencies and force constants

resistivity, mobility

optical properties, dielectric constant, photoluminescence

arsenic telluride (As_2Te_3)

crystal structure, chemical bond, lattice parameters

physical properties

antimony oxide (Sb_2O_3)

crystal structure, chemical bond

IR absorption bands

electron energy loss, photoemission, Auger spectroscopy

dielectric constant

Raman frequencies

thermal conductivity, thermoelectric power

heat capacity, density, melting point

antimony sulfide (Sb_2S_3)

general characterization, band structure

energy gap

impurities and defects

crystal structure, chemical bond, lattice parameters (including data for Sb_2Se_3 , Bi_2S_3)

phonon frequencies

microwave vibration, surface phonon-polariton frequencies

sound velocity

electrical conductivity, pyrocurrent, thermoelectric power

optical properties, photoconductivity

dielectric constants

magnetic properties

Debye temperature, heat capacity

density, melting point

phase transitions

antimony selenide (Sb_2Se_3)

band structure, energy gap

positions of density-of-states maxima

interband transition energies

impurities and defects

crystal structure, chemical bond, lattice parameters (including data for Sb_2S_3 , Bi_2S_3)

Debye temperature, heat capacity, melting point, thermodynamical data

phonon frequencies

electrical conductivity

mobility, Seebeck effect

optical properties

dielectric constants

magnetic properties

antimony telluride (Sb_2Te_3)

band structure, energy gap

effective masses

impurities and defects

crystal structure, chemical bond, lattice parameters (including data for Bi_2Se_3 , Bi_2Te_3)

thermal expansion

density, melting point

Debye temperature, heat capacity

phonon dispersion, phonon frequencies

transport properties

optical properties

dielectric constants

thermal conductivity, thermodynamical data

magnetic properties

bismuth oxide (Bi_2O_3)

energy gaps

optical spectra

crystal structure, chemical bond, lattice parameters

IR absorption bands, Raman spectra

transport properties

thermal conductivity

magnetic properties

heat capacity, density, melting point

bismuth sulfide (Bi_2S_3)

energy gaps

crystal structure, chemical bond, lattice parameter (including data for Sb_2S_3 , Sb_2Se_3)

phonon frequencies

transport properties

optical properties, dielectric constants

magnetic properties

heat capacity, density, melting point

bismuth selenide (Bi_2Se_3)

band structure

energy gaps

higher interband transition energies

effective masses

g -factor

impurity and defects

crystal structure, chemical bond, lattice parameter (including data of related compounds)

phonon dispersion, phonon frequencies

elastic moduli

transport properties

optical properties, dielectric constants

thermal conductivity

magnetic properties

Debye temperature, heat capacity

density, melting point

bismuth telluride (Bi_2Te_3)

band structure

energy gaps

interband transition energies

work function

effective masses

spin-splitting factors

g-factors

impurity and defect levels

crystal structure, chemical bond, lattice parameters (including data for related compounds)

phonon dispersion, phonon frequencies

elastic moduli

sound velocity, Grüneisen constant

transport properties

optical properties, dielectric constant

thermal conductivity

magnetic properties

Debye temperature, heat capacity

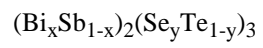
density, melting point

thermal expansion, mechano-caloric effect

As_4S_4 (realgar)

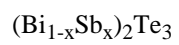
crystal structure, chemical bond, lattice parameters

physical properties



crystal structure, chemical bond, lattice parameters of stoichiometric compounds

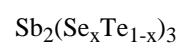
physical properties



physical properties



physical properties



physical properties

$(\text{Bi}_{1-x}\text{Sb}_x)_2\text{Se}_3$, $\text{Bi}_2\text{Te}_{3-x}\text{S}_x$, $\text{Sb}_2\text{Te}_{3-x}\text{Se}_x$

physical properties

Bi_2TeO_5

properties

V-VII₃ compounds, general tables

crystal structure, chemical bond of AsI₃, SbI₃, BiI₃

arsenic triiodide (AsI_3)

energy gap

crystal structure, chemical bond, thermal expansion

density, melting point

phonon properties

optical properties, photoconductivity

heat and entropy change of fusion

magnetic properties

antimony triiodide (SbI_3)

energy gap, effective masses

crystal structure, density, melting point

phonon wavenumbers, elastic constants

resistivity

optical properties, dielectric constant

photoconductivity, photoemission

heat and entropy change of fusion

magnetic properties

bismuth triiodide (BiI_3)

band structure, energy gap, effective masses, excitons

crystal structure, phase diagram

density, melting and boiling points

phonon properties, elastic constants

resistivity

optical properties, dielectric constant, non-linear properties

photoconductivity and photoemission

vapor pressure, parameters of fusion and vaporization

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Non-Tetrahedrally Bonded Elements and Binary
Compounds I

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