

# Cyclohexane, butyl-

Other names:	1-CYCLOHEXYLBUTANE Butane, 1-cyclohexyl- Butylcyclohexane Cyclohexane, n-butyl- n-Butylcyclohexane
Inchi:	InChI=1S/C10H20/c1-2-3-7-10-8-5-4-6-9-10/h10H,2-9H2,1H3
InchiKey:	GGBJHURWWWLEQH-UHFFFAOYSA-N
Formula:	C10H20
SMILES:	CCCCC1CCCCC1
Mol. weight [g/mol]:	140.27
CAS:	1678-93-9

## Physical Properties

Property code	Value	Unit	Source
af	0.3620		KDB
chl	-6530.30 ± 1.20	kJ/mol	NIST Webbook
gf	56.48	kJ/mol	KDB
hf	-213.20 ± 1.40	kJ/mol	NIST Webbook
hf	-213.30	kJ/mol	KDB
hfl	-263.20 ± 1.30	kJ/mol	NIST Webbook
hfus	13.49	kJ/mol	Joback Method
hvap	50.00	kJ/mol	NIST Webbook
hvap	49.37	kJ/mol	NIST Webbook
hvap	47.00 ± 0.20	kJ/mol	NIST Webbook
hvap	48.90 ± 0.50	kJ/mol	NIST Webbook
hvap	49.40 ± 0.30	kJ/mol	NIST Webbook
hvap	50.00	kJ/mol	NIST Webbook
hvap	49.40	kJ/mol	NIST Webbook
hvap	50.00	kJ/mol	NIST Webbook
hvap	50.03	kJ/mol	NIST Webbook
hvap	49.40 ± 0.40	kJ/mol	NIST Webbook
ie	9.41	eV	NIST Webbook
ie	9.57 ± 0.03	eV	NIST Webbook
log10ws	-3.66		Crippen Method
logp	3.757		Crippen Method
mcpvol	140.900	ml/mol	McGowan Method

pc	2560.00	kPa	Critical Point Measurements for Five n-Alkylcyclohexanes (C6 to C10) by the Pulse-Heating Method
pc	3150.00	kPa	KDB
rinpol	1022.00		NIST Webbook
rinpol	1028.00		NIST Webbook
rinpol	1030.00		NIST Webbook
rinpol	1025.00		NIST Webbook
rinpol	1030.20		NIST Webbook
rinpol	1028.00		NIST Webbook
rinpol	1041.00		NIST Webbook
rinpol	1029.00		NIST Webbook
rinpol	1033.10		NIST Webbook
rinpol	1027.00		NIST Webbook
rinpol	1026.00		NIST Webbook
rinpol	1035.27		NIST Webbook
rinpol	1032.57		NIST Webbook
rinpol	1048.00		NIST Webbook
rinpol	1029.30		NIST Webbook
rinpol	1025.00		NIST Webbook
rinpol	1026.83		NIST Webbook
rinpol	1023.13		NIST Webbook
rinpol	1033.80		NIST Webbook
rinpol	1031.60		NIST Webbook
rinpol	1028.90		NIST Webbook
rinpol	1028.77		NIST Webbook
rinpol	1028.77		NIST Webbook
rinpol	1047.00		NIST Webbook
rinpol	1024.00		NIST Webbook
rinpol	1051.30		NIST Webbook
rinpol	1060.90		NIST Webbook
rinpol	1024.00		NIST Webbook
rinpol	1052.00		NIST Webbook
rinpol	1036.00		NIST Webbook
rinpol	1036.00		NIST Webbook
rinpol	1045.00		NIST Webbook
rinpol	1030.00		NIST Webbook
rinpol	1037.00		NIST Webbook
rinpol	1061.00		NIST Webbook
rinpol	1029.00		NIST Webbook
rinpol	1061.00		NIST Webbook
rinpol	1025.00		NIST Webbook
rinpol	1032.00		NIST Webbook
rinpol	1035.00		NIST Webbook

rinpol	1026.00		NIST Webbook
rinpol	1028.90		NIST Webbook
rinpol	1033.80		NIST Webbook
rinpol	1030.20		NIST Webbook
rinpol	1028.90		NIST Webbook
rinpol	1026.60		NIST Webbook
rinpol	1030.20		NIST Webbook
rinpol	1031.60		NIST Webbook
rinpol	1026.60		NIST Webbook
rinpol	1030.20		NIST Webbook
rinpol	1031.60		NIST Webbook
rinpol	1028.46		NIST Webbook
ripol	1105.00		NIST Webbook
ripol	1116.00		NIST Webbook
ripol	1100.00		NIST Webbook
ripol	1075.00		NIST Webbook
ripol	1082.00		NIST Webbook
ripol	1075.00		NIST Webbook
ripol	1116.00		NIST Webbook
ripol	1096.70		NIST Webbook
ripol	1091.20		NIST Webbook
ripol	1123.30		NIST Webbook
ripol	1118.10		NIST Webbook
ripol	1113.20		NIST Webbook
ripol	1107.60		NIST Webbook
ripol	1101.70		NIST Webbook
ripol	1082.00		NIST Webbook
ripol	1094.00		NIST Webbook
sg	459.78	J/molxK	NIST Webbook
sl	344.97	J/molxK	NIST Webbook
tb	454.10	K	KDB
tc	653.10	K	Gas-Liquid Critical Temperatures of Some Alkenes, Amines, and Cyclic Hydrocarbons
tc	667.00	K	KDB
tf	196.85 ± 0.50	K	NIST Webbook
tf	198.30 ± 0.20	K	NIST Webbook
tf	198.30 ± 0.50	K	NIST Webbook
tf	198.40	K	KDB
tf	198.30 ± 0.20	K	NIST Webbook
tt	198.42 ± 0.02	K	NIST Webbook
vc	0.528	m3/kmol	Joback Method

# Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	388.28	J/molxK	611.76	Joback Method
cpg	299.95	J/molxK	447.75	Joback Method
cpg	319.42	J/molxK	480.55	Joback Method
cpg	337.97	J/molxK	513.35	Joback Method
cpg	355.61	J/molxK	546.16	Joback Method
cpg	372.37	J/molxK	578.96	Joback Method
cpg	403.35	J/molxK	644.56	Joback Method
cpl	271.04	J/molxK	298.15	NIST Webbook
dvisc	0.0014252	Paxs	289.14	Joback Method
dvisc	0.0003559	Paxs	408.10	Joback Method
dvisc	0.0005116	Paxs	368.45	Joback Method
dvisc	0.0008027	Paxs	328.79	Joback Method
dvisc	0.0002640	Paxs	447.75	Joback Method
dvisc	0.0086122	Paxs	209.84	Joback Method
dvisc	0.0030367	Paxs	249.49	Joback Method
hfust	14.14	kJ/mol	198.40	NIST Webbook
hfust	14.14	kJ/mol	198.40	NIST Webbook
hfust	14.16	kJ/mol	198.42	NIST Webbook
hfust	14.20	kJ/mol	198.00	NIST Webbook
hvapt	47.40 ± 0.20	kJ/mol	293.50	NIST Webbook
hvapt	38.49	kJ/mol	454.10	KDB
hvapt	44.90	kJ/mol	412.00	NIST Webbook
rfi	1.43990		293.15	Density, Viscosity, Refractive Index, and Freezing Point for Binary Mixtures of 1,1'-Bicyclohexyl with Alkylcyclohexane
rho1	776.74	kg/m3	323.15	Densities and Viscosities for the Ternary System of Cyclopropanemethanol (1) + n-Dodecane (2) + Butylcyclohexane (3) and Corresponding Binaries at T = 293.15 343.15 K
rho1	799.00	kg/m3	293.00	KDB

rhoI	799.37	kg/m3	293.15	Densities, Viscosities, Refractive Indices, and Surface Tensions of Binary Mixtures of 2,2,4-Trimethylpentane with Several Alkylated Cyclohexanes from (293.15 to 343.15) K
rhoI	795.63	kg/m3	298.15	Densities, Viscosities, Refractive Indices, and Surface Tensions of Binary Mixtures of 2,2,4-Trimethylpentane with Several Alkylated Cyclohexanes from (293.15 to 343.15) K
rhoI	791.88	kg/m3	303.15	Densities, Viscosities, Refractive Indices, and Surface Tensions of Binary Mixtures of 2,2,4-Trimethylpentane with Several Alkylated Cyclohexanes from (293.15 to 343.15) K
rhoI	788.12	kg/m3	308.15	Densities, Viscosities, Refractive Indices, and Surface Tensions of Binary Mixtures of 2,2,4-Trimethylpentane with Several Alkylated Cyclohexanes from (293.15 to 343.15) K
rhoI	784.35	kg/m3	313.15	Densities, Viscosities, Refractive Indices, and Surface Tensions of Binary Mixtures of 2,2,4-Trimethylpentane with Several Alkylated Cyclohexanes from (293.15 to 343.15) K

rhoI	780.49	kg/m3	318.15	Densities, Viscosities, Refractive Indices, and Surface Tensions of Binary Mixtures of 2,2,4-Trimethylpentane with Several Alkylated Cyclohexanes from (293.15 to 343.15) K
rhoI	776.70	kg/m3	323.15	Densities, Viscosities, Refractive Indices, and Surface Tensions of Binary Mixtures of 2,2,4-Trimethylpentane with Several Alkylated Cyclohexanes from (293.15 to 343.15) K
rhoI	769.09	kg/m3	333.15	Densities, Viscosities, Refractive Indices, and Surface Tensions of Binary Mixtures of 2,2,4-Trimethylpentane with Several Alkylated Cyclohexanes from (293.15 to 343.15) K
rhoI	761.43	kg/m3	343.15	Densities, Viscosities, Refractive Indices, and Surface Tensions of Binary Mixtures of 2,2,4-Trimethylpentane with Several Alkylated Cyclohexanes from (293.15 to 343.15) K
rhoI	799.34	kg/m3	293.15	Densities and Viscosities for the Ternary System of Cyclopropanemethanol (1) + n-Dodecane (2) + Butylcyclohexane (3) and Corresponding Binaries at T = 293.15 343.15 K

rhoI	795.59	kg/m3	298.15	Densities and Viscosities for the Ternary System of Cyclopropanemethanol (1) + n-Dodecane (2) + Butylcyclohexane (3) and Corresponding Binaries at T = 293.15 343.15 K
rhoI	791.84	kg/m3	303.15	Densities and Viscosities for the Ternary System of Cyclopropanemethanol (1) + n-Dodecane (2) + Butylcyclohexane (3) and Corresponding Binaries at T = 293.15 343.15 K
rhoI	788.07	kg/m3	308.15	Densities and Viscosities for the Ternary System of Cyclopropanemethanol (1) + n-Dodecane (2) + Butylcyclohexane (3) and Corresponding Binaries at T = 293.15 343.15 K
rhoI	784.30	kg/m3	313.15	Densities and Viscosities for the Ternary System of Cyclopropanemethanol (1) + n-Dodecane (2) + Butylcyclohexane (3) and Corresponding Binaries at T = 293.15 343.15 K
rhoI	780.52	kg/m3	318.15	Densities and Viscosities for the Ternary System of Cyclopropanemethanol (1) + n-Dodecane (2) + Butylcyclohexane (3) and Corresponding Binaries at T = 293.15 343.15 K

rhoI	746.38	kg/m3	363.15	Density, Viscosity, Surface Tension, and Refractive Index for Binary Mixtures of 1,3-Dimethyladamantane with Four C10 Alkanes
rhoI	772.93	kg/m3	328.15	Densities and Viscosities for the Ternary System of Cyclopropanemethanol (1) + n-Dodecane (2) + Butylcyclohexane (3) and Corresponding Binaries at T = 293.15 343.15 K
rhoI	769.13	kg/m3	333.15	Densities and Viscosities for the Ternary System of Cyclopropanemethanol (1) + n-Dodecane (2) + Butylcyclohexane (3) and Corresponding Binaries at T = 293.15 343.15 K
rhoI	765.30	kg/m3	338.15	Densities and Viscosities for the Ternary System of Cyclopropanemethanol (1) + n-Dodecane (2) + Butylcyclohexane (3) and Corresponding Binaries at T = 293.15 343.15 K
rhoI	761.47	kg/m3	343.15	Densities and Viscosities for the Ternary System of Cyclopropanemethanol (1) + n-Dodecane (2) + Butylcyclohexane (3) and Corresponding Binaries at T = 293.15 343.15 K



rhoI	799.33	kg/m3	293.15	Density, Viscosity, Speed of Sound, Bulk Modulus, Surface Tension, and Flash Point of Selected Ternary Mixtures of n-Butylcyclohexane + a Linear Alkane (n-Hexadecane or n-Dodecane) + an Aromatic Compound (Toluene, n-Butylbenzene, or n-Hexylbenzene)
rhoI	791.82	kg/m3	303.15	Density, Viscosity, Speed of Sound, Bulk Modulus, Surface Tension, and Flash Point of Selected Ternary Mixtures of n-Butylcyclohexane + a Linear Alkane (n-Hexadecane or n-Dodecane) + an Aromatic Compound (Toluene, n-Butylbenzene, or n-Hexylbenzene)
rhoI	784.28	kg/m3	313.15	Density, Viscosity, Speed of Sound, Bulk Modulus, Surface Tension, and Flash Point of Selected Ternary Mixtures of n-Butylcyclohexane + a Linear Alkane (n-Hexadecane or n-Dodecane) + an Aromatic Compound (Toluene, n-Butylbenzene, or n-Hexylbenzene)

rhoI	776.70	kg/m3	323.15	Density, Viscosity, Speed of Sound, Bulk Modulus, Surface Tension, and Flash Point of Selected Ternary Mixtures of n-Butylcyclohexane + a Linear Alkane (n-Hexadecane or n-Dodecane) + an Aromatic Compound (Toluene, n-Butylbenzene, or n-Hexylbenzene)
rhoI	769.09	kg/m3	333.15	Density, Viscosity, Speed of Sound, Bulk Modulus, Surface Tension, and Flash Point of Selected Ternary Mixtures of n-Butylcyclohexane + a Linear Alkane (n-Hexadecane or n-Dodecane) + an Aromatic Compound (Toluene, n-Butylbenzene, or n-Hexylbenzene)
rhoI	761.40	kg/m3	343.15	Density, Viscosity, Speed of Sound, Bulk Modulus, Surface Tension, and Flash Point of Selected Ternary Mixtures of n-Butylcyclohexane + a Linear Alkane (n-Hexadecane or n-Dodecane) + an Aromatic Compound (Toluene, n-Butylbenzene, or n-Hexylbenzene)

rhoI	829.90	kg/m3	253.15	Densities, Viscosities, Speeds of Sound, Bulk Moduli, Surface Tensions, and Flash Points of Quaternary Mixtures of n-Dodecane (1), n-Butylcyclohexane (2), n-Butylbenzene (3), and 2,2,4,4,6,8,8-Heptamethylnonane (4) at 0.1 MPa as Potential Surrogate Mixtures for Military Jet Fuel, JP-5
rhoI	803.07	kg/m3	288.15	Densities, Viscosities, Speeds of Sound, Bulk Moduli, Surface Tensions, and Flash Points of Quaternary Mixtures of n-Dodecane (1), n-Butylcyclohexane (2), n-Butylbenzene (3), and 2,2,4,4,6,8,8-Heptamethylnonane (4) at 0.1 MPa as Potential Surrogate Mixtures for Military Jet Fuel, JP-5
rhoI	799.33	kg/m3	293.15	Densities, Viscosities, Speeds of Sound, Bulk Moduli, Surface Tensions, and Flash Points of Quaternary Mixtures of n-Dodecane (1), n-Butylcyclohexane (2), n-Butylbenzene (3), and 2,2,4,4,6,8,8-Heptamethylnonane (4) at 0.1 MPa as Potential Surrogate Mixtures for Military Jet Fuel, JP-5

rhoI	795.57	kg/m3	298.15	Densities, Viscosities, Speeds of Sound, Bulk Moduli, Surface Tensions, and Flash Points of Quaternary Mixtures of n-Dodecane (1), n-Butylcyclohexane (2), n-Butylbenzene (3), and 2,2,4,4,6,8,8-Heptamethylnonane (4) at 0.1 MPa as Potential Surrogate Mixtures for Military Jet Fuel, JP-5
rhoI	791.81	kg/m3	303.15	Densities, Viscosities, Speeds of Sound, Bulk Moduli, Surface Tensions, and Flash Points of Quaternary Mixtures of n-Dodecane (1), n-Butylcyclohexane (2), n-Butylbenzene (3), and 2,2,4,4,6,8,8-Heptamethylnonane (4) at 0.1 MPa as Potential Surrogate Mixtures for Military Jet Fuel, JP-5
rhoI	784.27	kg/m3	313.15	Densities, Viscosities, Speeds of Sound, Bulk Moduli, Surface Tensions, and Flash Points of Quaternary Mixtures of n-Dodecane (1), n-Butylcyclohexane (2), n-Butylbenzene (3), and 2,2,4,4,6,8,8-Heptamethylnonane (4) at 0.1 MPa as Potential Surrogate Mixtures for Military Jet Fuel, JP-5

rhoI	776.71	kg/m3	323.15	Densities, Viscosities, Speeds of Sound, Bulk Moduli, Surface Tensions, and Flash Points of Quaternary Mixtures of n-Dodecane (1), n-Butylcyclohexane (2), n-Butylbenzene (3), and 2,2,4,4,6,8,8-Heptamethylnonane (4) at 0.1 MPa as Potential Surrogate Mixtures for Military Jet Fuel, JP-5
rhoI	769.10	kg/m3	333.15	Densities, Viscosities, Speeds of Sound, Bulk Moduli, Surface Tensions, and Flash Points of Quaternary Mixtures of n-Dodecane (1), n-Butylcyclohexane (2), n-Butylbenzene (3), and 2,2,4,4,6,8,8-Heptamethylnonane (4) at 0.1 MPa as Potential Surrogate Mixtures for Military Jet Fuel, JP-5
rhoI	754.16	kg/m3	353.15	Density, Viscosity, Surface Tension, and Refractive Index for Binary Mixtures of 1,3-Dimethyladamantane with Four C10 Alkanes
rhoI	795.71	kg/m3	298.15	Excess Molar Volume along with Viscosity and Refractive Index for Binary Systems of Tricyclo[5.2.1.0(2.6)]decane with Five Cycloalkanes

rhoI	791.96	kg/m3	303.15	Excess Molar Volume along with Viscosity and Refractive Index for Binary Systems of Tricyclo[5.2.1.0(2.6)]decane with Five Cycloalkanes
rhoI	788.20	kg/m3	308.15	Excess Molar Volume along with Viscosity and Refractive Index for Binary Systems of Tricyclo[5.2.1.0(2.6)]decane with Five Cycloalkanes
rhoI	784.43	kg/m3	313.15	Excess Molar Volume along with Viscosity and Refractive Index for Binary Systems of Tricyclo[5.2.1.0(2.6)]decane with Five Cycloalkanes
rhoI	780.65	kg/m3	318.15	Excess Molar Volume along with Viscosity and Refractive Index for Binary Systems of Tricyclo[5.2.1.0(2.6)]decane with Five Cycloalkanes
rhoI	799.44	kg/m3	293.15	Excess Molar Volumes and Viscosities of Binary Systems of Butylcyclohexane with n-Alkanes (C7 to C14) at T = 293.15 K to 313.15 K
rhoI	795.70	kg/m3	298.15	Excess Molar Volumes and Viscosities of Binary Systems of Butylcyclohexane with n-Alkanes (C7 to C14) at T = 293.15 K to 313.15 K

rhoI	791.95	kg/m3	303.15	Excess Molar Volumes and Viscosities of Binary Systems of Butylcyclohexane with n-Alkanes (C7 to C14) at T = 293.15 K to 313.15 K
rhoI	788.19	kg/m3	308.15	Excess Molar Volumes and Viscosities of Binary Systems of Butylcyclohexane with n-Alkanes (C7 to C14) at T = 293.15 K to 313.15 K
rhoI	784.41	kg/m3	313.15	Excess Molar Volumes and Viscosities of Binary Systems of Butylcyclohexane with n-Alkanes (C7 to C14) at T = 293.15 K to 313.15 K
rhoI	799.47	kg/m3	293.15	Density, Viscosity, Surface Tension, and Refractive Index for Binary Mixtures of 1,3-Dimethyladamantane with Four C10 Alkanes
rhoI	795.71	kg/m3	298.15	Density, Viscosity, Surface Tension, and Refractive Index for Binary Mixtures of 1,3-Dimethyladamantane with Four C10 Alkanes
rhoI	791.96	kg/m3	303.15	Density, Viscosity, Surface Tension, and Refractive Index for Binary Mixtures of 1,3-Dimethyladamantane with Four C10 Alkanes

rhoI	784.43	kg/m3	313.15	Density, Viscosity, Surface Tension, and Refractive Index for Binary Mixtures of 1,3-Dimethyladamantane with Four C10 Alkanes
rhoI	777.16	kg/m3	323.15	Density, Viscosity, Surface Tension, and Refractive Index for Binary Mixtures of 1,3-Dimethyladamantane with Four C10 Alkanes
rhoI	769.55	kg/m3	333.15	Density, Viscosity, Surface Tension, and Refractive Index for Binary Mixtures of 1,3-Dimethyladamantane with Four C10 Alkanes
rhoI	761.88	kg/m3	343.15	Density, Viscosity, Surface Tension, and Refractive Index for Binary Mixtures of 1,3-Dimethyladamantane with Four C10 Alkanes
rhoI	799.47	kg/m3	293.15	Excess Molar Volume along with Viscosity and Refractive Index for Binary Systems of Tricyclo[5.2.1.0(2.6)]decane with Five Cycloalkanes
sfust	71.36	J/molxK	198.42	NIST Webbook
srf	0.03	N/m	293.20	KDB

## Correlations

Information	Value
Property code	pvap
Equation	$\ln(P_{vp}) = A + B/(T + C)$
Coeff. A	1.39050e+01
Coeff. B	-3.63952e+03





# Legend

<b>af:</b>	Acentric Factor
<b>chl:</b>	Standard liquid enthalpy of combustion
<b>cpg:</b>	Ideal gas heat capacity
<b>cpl:</b>	Liquid phase heat capacity
<b>dvisc:</b>	Dynamic viscosity
<b>gf:</b>	Standard Gibbs free energy of formation
<b>hf:</b>	Enthalpy of formation at standard conditions
<b>hfl:</b>	Liquid phase enthalpy of formation at standard conditions
<b>hfus:</b>	Enthalpy of fusion at standard conditions
<b>hfust:</b>	Enthalpy of fusion at a given temperature
<b>hvap:</b>	Enthalpy of vaporization at standard conditions
<b>hvapt:</b>	Enthalpy of vaporization at a given temperature
<b>ie:</b>	Ionization energy
<b>log10ws:</b>	Log10 of Water solubility in mol/l
<b>logp:</b>	Octanol/Water partition coefficient
<b>mcvol:</b>	McGowan's characteristic volume
<b>pc:</b>	Critical Pressure
<b>pvap:</b>	Vapor pressure
<b>rfi:</b>	Refractive Index
<b>rho:</b>	Liquid Density
<b>rinpol:</b>	Non-polar retention indices
<b>ripol:</b>	Polar retention indices
<b>sfust:</b>	Entropy of fusion at a given temperature
<b>sg:</b>	Molar entropy at standard conditions
<b>sl:</b>	Liquid phase molar entropy at standard conditions
<b>srf:</b>	Surface Tension
<b>tb:</b>	Normal Boiling Point Temperature
<b>tc:</b>	Critical Temperature
<b>tf:</b>	Normal melting (fusion) point
<b>tt:</b>	Triple Point Temperature
<b>vc:</b>	Critical Volume

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