TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds

Substance	Physical State	$\Delta_f H°$ kJ · mol^{-1}	$\Delta_f G°$ kJ · mol^{-1}	$S°$ J · deg^{-1} · mol^{-1}	$C_p°$ J · deg^{-1} · mol^{-1}
Acenaphthene	c	70.34		188.9	190.4
Acenaphthylene	c	186.7			166.4
Acetaldehyde	lq	−192.2	−127.6	160.4	89.0
	g	−166.1	−133.0	263.8	55.3
Acetaldoxime	c	−77.9			
	lq	−81.6			
Acetamide	c	−317.0		115.0	91.3
Acetamidoguanidine nitrate	c	−494.0			
1-Acetamido-2-nitroguanidine	c	−193.6			
5-Acetamidotetrazole	c	−5.0			
Acetanilide	c	−210.6			
Acetic acid	lq	−484.4	−390.2	159.9	123.6
	g	−432.2	−374.2	283.5	63.4
ionized; std. state, $m = 1$	aq	−486.34	−369.65	86.7	−6.3
Acetic anhydride	lq	−624.4	−489.14	268.8	168.2[30]
Acetone	lq	−248.4	−152.7	198.8	126.3
	g	−217.1	−152.7	295.3	74.5
Acetonitrile	lq	31.4	86.5	149.7	91.5
	g	74.0	91.9	243.4	52.2
Acetophenone	lq	−142.5	−17.0	249.6	204.6
Acetyl bromide	lq	−223.5			
Acetyl chloride	lq	−272.9	−208.2	201.0	117.0
	g	−242.8	−205.8	295.1	67.8
Acetylene	g	227.4	209.0	201.0	44.1
Acetylene-d_2	g	221.5	205.9	208.9	49.3
Acetylenedicarboxylic acid	c	−578.2			
Acetyl fluoride	g	−442.1			
1-Acetylimidazole	c	−574.0			
Acetyl iodide	lq	−163.5			
Acridine	c	179.4			
Adamantane	c	−194.1			

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ·mol^{-1}	$\Delta_f G°$ kJ·mol^{-1}	$S°$ J·deg^{-1}·mol^{-1}	$C_p°$ J·deg^{-1}·mol^{-1}
Adenine	c	96.0	299.6	151.1	147.0
(+)-Alanine	c	−561.2	−369.4	132.3	
(−)-Alanine	c	−604.0	−370.5	129.3	
(±)-Alanine	c	−563.6	−372.3	132.3	
β-Alanine	c	−558.0			
(±)-*N*-Alanylglycine	c	−777.8	−489.9	213.5	
(−)-Alanylglycine	c	−827.0	−533.0	195.2	
Allene	g	190.5			
Alloxan monohydrate	c	−1000.7	−762.3	186.7	
Allylamine	lq	−10.0			
Allyl *tert*-butyl sulfide	lq	−91.0			
Allyl ethyl sulfone	lq	−406.0			
Allyl methyl sulfone	lq	−385.1			
Allyl trichloroacetate	lq	−395.3			
Allyl (*see* Propene)					
Aminetrimethylboron	c	−284.1	−79.3	218.0	
3-Aminoacetophenone	c	−173.3			
4-Aminoacetophenone	c	−182.1			
2-Aminoacridine	c	166.4			
9-Aminoacridine	c	159.2			
2-Aminobenzoic acid	c	−400.9			
3-Aminobenzoic acid	c	−411.6			
4-Aminobenzoic acid	c	−412.9			
2-Aminobiphenyl	c	112.2			
4-Aminobiphenyl	c	81.2			
4-Aminobutanoic acid	c	−581.0			
2-Aminoethanesulfonic acid	c	−785.9	−562.3	154.1	140.7
ionized; std. state, $m = 1$	aq	−719.8	−509.8	200.1	
2-Aminoethanol	lq				195.5
2-Aminohexanoic acid (norleucine)	c	−639.1			
4-Aminohexanoic acid	c	−646.2			
5-Aminohexanoic acid	c	−643.3			
6-Aminohexanoic acid	c	−639.1			
(−)-2-Amino-3-hydroxybutanoic acid	c	−759.5			
2-Amino-2-(hydroxymethyl)-1,1-propanediol	c	717.8			
3-Aminonitroguanidine	c	22.1			
5-Aminopentanoic acid	c	−604.1			
5-Aminotetrazole	c	−207.8			
3-Amino-1,2,4-triazole	c	76.8			
Aniline	lq	31.3	149.2	191.4	191.9
	g	87.5	−7.0	317.9	107.9
Anthracene	c	129.2	286.0	207.6	210.5
9,10-Anthraquinone	c	−207.5			
D-(−)-Arabinose [also (+)-]	c	−1057.9			
(+)-Arginine	c	−623.5	−240.5	250.8	232.0
L-(+)-Ascorbic acid	c	−1164.6			
L-(+)-Asparagine	c	−789.4	−530.6	174.6	
L-(+)-Aspartic acid	c	−973.3	−730.7	170.2	

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ · mol^{-1}	$\Delta_f G°$ kJ · mol^{-1}	$S°$ J · deg^{-1} · mol^{-1}	$C_p°$ J · deg^{-1} · mol^{-1}
cis-Azobenzene	c	310.2			
trans-Azobenzene	c	365.2			
Azoisopropane	g	35.8			
Azomethane	g	148.8	239.7	289.9	78.0
Azomethane-d_6	g	119.3	218.3	305.7	90.6
Azopropane	g	51.5			
Azulene	g	289.1	353.4	338.1	128.5
Barbituric acid	c	−637.2			
Benzaldehyde	lq	−87.0	9.4		172.0
Benzamide	c	−202.6			
Benzanilide	c	−93.4			
1,2-Benzanthracene	c	170.9			
2,3-Benzanthracene	c	160.4	359.2	215.5	
1,2-Benzanthracene-9,10-dione	c	−231.9			
Benzene	lq	49.0	124.4	173.4	136.0
	g	82.6	129.7	269.2	82.4
Benzeneboronic acid	c	−720.1			
1,2-Benzenediamine	c	−0.3			
1,3-Benzenediamine	c	−7.8			
1,4-Benzenediamine	c	3.1			
1,3-Benzenedicarboxylic acid	c	803.0			
1,4-Benzenedicarboxylic acid	c	816.1			
1,2,4,5-Benzenetetracarboxylic acid	c	1571.0			
Benzenethiol (thiophenol)	lq	63.7	134.0	222.8	173.2
	g	111.3	147.6	336.9	104.9
1,2,3-Benzenetricarboxylic acid	c	−1160.0			
1,2,4-Benzenetricarboxylic acid	c	−1179.0			
1,3,5-Benzenetricarboxylic acid	c	−1190.0			
1,2,3-Benzenetriol	c	−551.1			
1,2,4-Benzenetriol	c	−563.8			
1,3,5-Benzenetriol	c	−584.6			
p-Benzidine	c	70.7			
Benzil	c	−153.9			
Benzoic acid	c	−385.2	−245.3	167.6	146.8
Benzoic anhydride	c	−415.4			
Benzonitrile	lq	163.2		209.1	165.2
	g	215.8	260.8	321.0	109.1
Benzo[*def*]phenanthrene	c	125.5	269.5	224.8	236.0
Benzophenone	c	−34.5	140.2	245.2	224.8
Benzo[*f*]quinoline	c	150.6			
Benzo[*h*]quinoline	c	149.7			
1,4-Benzoquinone	c	−185.7	−83.6	162.8	129.0
Benzo[*b*]thiophene	c	100.6			
1,2,3-Benzotriazole	c	250.0			
Benzotrifluoride	lq	−636.7			
Benzoyl bromide	lq	−107.3			
Benzoyl chloride	lq	−158.0			
Benzoylformic acid	c	−482.4			
N-Benzoylglycine	c	−609.8	−369.57	239.3	

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ · mol^{-1}	$\Delta_f G°$ kJ · mol^{-1}	$S°$ J · deg^{-1} · mol^{-1}	$C_p°$ J · deg^{-1} · mol^{-1}
Benzoyl iodide	lq	−53.5			
3,4-Benzphenanthrene	c	184.9			
Benzylamine	lq	34.2			
Benzyl alcohol	lq	−160.7	−27.5	216.7	218.0
Benzyl bromide	lq	16.0			
Benzyl chloride	lq	−32.6			182.4
N-Benzyldiphenylamine	c	184.7			
Benzyl ethyl sulfide	lq	−4.9			
Benzyl iodide	lq	57.3			
Benzyl methyl ketone	lq	−151.9			
Benzyl methyl sulfide	lq	26.2			
Bicyclo[1.1.0]butane	g	217.1			
Bicyclo[2.2.1]hepta-2,5-dione	lq	213.0			
Bicyclo[2.2.1]heptane	c	−95.1			
Bicyclo[4.1.0]heptane	lq	−36.7			
Bicyclo[2.2.1]heptene	lq	90.0	203.9		130.0
Bicyclo[3.1.0]hexane	g	38.6			
Bicyclohexyl	lq	−273.7			
Bicyclo[2.2.2]octane	c	−146.9			
Bicyclo[4.2.0]octane	g	−26.2			
Bicyclo[5.1.0]octane	g	−16.6			
Bicyclo[2.2.2]oct-2-ene	g	−23.3			
Bicyclopropyl	g	129.3			
Biphenyl	c	99.4	254.2	209.4	198.4
2-Biphenylcarboxylic acid	c	−349.0			
(1,1′-Biphenyl)-4,4′-diamine	c	70.7			
Biphenylene	c	334.0			
Bis(2-chloroethyl) ether	lq				220.9
Bis(dimethylthiocarbonyl) disulfide	c	41.6			
Bis(2-hydroxyethyl) ether	lq	−1621.0		441.0	135.1
	g	−571.1			
Bromoacetone	g	−181.0			
Bromoacetylene	g			253.7	55.7
Bromobenzene	lq	60.9	126.0	219.2	154.3
4-Bromobenzoic acid	c	−378.3			
1-Bromobutane	lq	−143.8	−12.9	369.8	109.3
2-Bromobutane	lq	−154.8	−19.25		
	g	−120.3	−25.8	370.3	110.8
Bromochlorodifluoromethane	g	−471.5	−448.4	318.5	74.6
1-Bromo-2-chloroethane	lq				130.1[27]
Bromochlorofluoromethane	g	−295.0	−278.6	304.3	63.2
Bromochloromethane	lq				52.7
	g	−50.2	−39.3	287.6	
1-Bromo-2-chloro-1,1,2-trifluoroethane	g	−644.8			
2-Bromo-2-chloro-1,1,1-trifluoroethane	g	−690.4			
1-Bromodecane	lq	−344.7			

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ · mol^{-1}	$\Delta_f G°$ kJ · mol^{-1}	$S°$ J · deg^{-1} · mol^{-1}	$C_p°$ J · deg^{-1} · mol^{-1}
Bromodichlorofluoromethane	g	−269.5	−246.8	330.6	80.0
Bromodichloromethane	g	−58.6	−42.5	316.4	67.4
Bromodifluoromethane	g	−424.9	−447.3	295.1	58.7
Bromoethane	lq	−90.5	−25.8	198.7	100.8
	g	−61.9	−23.9	286.7	64.5
Bromoethylene (vinyl bromide)	lq				107.7[15]
	g	79.2	81.7	275.8	55.4
Bromofluoromethane	g	−252.7	−241.5	276.3	49.2
1-Bromoheptane	lq	−218.4			
1-Bromohexane	lq	−194.2		453.0	203.5
Bromoiodomethane	g	50.2	39.2	307.5	
Bromomethane	lq				78.7[7]
	g	−35.4	−26.3	246.4	42.5
2-Bromo-2-methylpropane	lq	−163.8			151.0
	g	−132.4	−28.2	332.0	116.5
1-Bromooctane	lq	−245.1			
Bromopentafluoroethane	g	−1064.4			
1-Bromopentane	lq	−170.2			132.2
	g	−129.0	−5.7	408.8	
1-Bromopropane	lq	−121.8			86.4
	g	−87.0	−22.5	330.9	
2-Bromopropane	lq	−130.5			132.2
	g	−99.4	−27.2	316.2	89.4
cis-1-Bromopropene	g	40.8			
3-Bromopropene	g	45.2			
N-Bromosuccinimide	c	−335.9			
α-Bromotoluene	lq	23.4			
Bromotrichloromethane	g	−41.1	−12.4	332.8	85.3
Bromotrifluoroethane	g	−694.5			
Bromotrifluoromethane	g	−648.3	−622.6	297.8(5)	69.3
Bromotrimethylsilane	lq	−325.9			
Bromotrinitromethane	g	80.3			
Brucine	c	−496.2			
1,2-Butadiene	g	162.3	199.5	293.0	80.1
1,3-Butadiene	lq	88.5		199.0	123.6
	g	110.0	150.7	278.7	79.5
1,3-Butadiyne	g	472.8	444.0	250.0	73.6
Butanal	lq	−239.2			163.7
	g	−204.9	−114.8	243.7	103.4
Butanamide	lq	−346.9			
Butane	lq				104.5[−0.5]
	g	−125.6	−17.2	310.1	97.5
1,2-Butanediamine	lq	−120.2			
(±)-1,2-Butanediol	lq	−523.6			
1,3-Butanediol	lq	−501.0			227.2[30]
1,4-Butanediol	lq	−503.3		223.4	200.1
2,3-Butanediol	lq	−541.5			213.0
Butanedinitrile	c	139.7			
	lq				160.5[62]
2,3-Butanedione	lq	−365.8			
1,4-Butanedithiol	lq	−105.7			

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ · mol^{-1}	$\Delta_f G°$ kJ · mol^{-1}	$S°$ J · deg^{-1} · mol^{-1}	$C_p°$ J · deg^{-1} · mol^{-1}
Butanenitrile	lq	−5.8			159[67]
	g	33.6	108.7	325.4	97.0
1-Butanethiol	lq	−124.7	4.1	276.0	171.2
2-Butanethiol	lq	−131.0	−0.17	271.4	
Butanoic acid	lq	−533.8	−377.7	222.2	178.6
Butanoic anhydride	lq				283.7
1-Butanol	lq	−327.3	−162.5	225.8	177.0
	g	−275.0	−150.8	362.8	122.6
(±)-2-Butanol	lq	−342.6	−177.0	214.9	196.9
	g	−292.9	−167.6	359.5	113.3
2-Butanone	lq	−273.3	−151.4	239.1	158.9
	g	−238.5		339.9	101.7
Butanophenone	lq	−188.9			
trans-2-Butenal	lq	−138.7			95.4
cis-Butenedinitrile	c	268.2			
1-Butene	lq	−20.8		227.0	118.0
	g	0.1	71.3	305.6	85.7
cis-2-Butene	lq	−29.8		219.9	127.0
	g	−7.1	65.9	300.8	78.9
trans-2-Butene	g	−11.4	63.0	296.5	87.8
cis-2-Butenenitrile	lq	95.1			
trans-2-Butenenitrile	lq	95.1			
3-Butenenitrile	g	159.7	193.4	298.4	82.1
cis-2-Butenoic acid	lq	−347.0			
trans-2-Butenoic acid	c	−430.5			
cis-2-Butenedioic acid	c	−788.7			
trans-2-Butenedioic acid	c	−811.1			
1-Buten-3-yne	g	304.6	306.0	279.4	73.2
2-Butoxyethanol	lq				281.0
N-Butylacetamide	lq	−380.8			
Butyl acetate	lq	−529.2			227.8
Butylamine	lq	−127.7			179.2
	g	−92.0	49.2	363.3	118.6
sec-Butylamine	lq	−137.5			
	g	−104.6	40.7	351.3	117.2
tert-Butylamine	g	−150.6			192.1
	g	−121.0	28.9	337.9	120.0
Butylbenzene	lq	63.2			243.4
	g	−13.1	144.7	439.5	416.3
sec-Butylbenzene	lq	−66.4			
tert-Butylbenzene	lq	−70.7			238.0
sec-Butyl butanoate	lq	−492.6			
Butyl chloroacetate	lq	−538.4			
Butyl 2-chlorobutanoate	lq	−655.2			
Butyl 3-chlorobutanoate	lq	−610.9			
Butyl 4-chlorobutanoate	lq	−618.0			
Butyl 2-chloropropanoate	lq	−572.0			
Butyl 3-chloropropanoate	lq	−558.2			
Butyl crotonate	lq	−467.8			
Butylcyclohexane	lq	−263.1		345.0	271.0
	g	−213.4	56.4	458.5	207.1

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ · mol^{-1}	$\Delta_f G°$ kJ · mol^{-1}	$S°$ J · deg^{-1} · mol^{-1}	$C_p°$ J · deg^{-1} · mol^{-1}
Butylcyclopentane	g	−168.3	61.4	456.2	177.5
Butyl dichloroacetate	lq	−550.2			
Butyl ethyl ether	lq				159.0
Butyl ethyl sulfide (3-thiaheptane)	g	−125.2	32.0	453.0	162.0
tert-Butyl ethyl sulfide	lq	−187.3			
Butyl formate	lq				200.2
tert-Butyl hydroperoxide	lq	−293.6			
Butyllithium	lq	−132.2			
Butyl methyl ether	lq	−290.6		295.3	192.7
tert-Butyl methyl ether	lq	−313.6		265.3	187.5
Butyl methyl sulfide (2-thiahexane)	lq	−142.8	17.1	307.5	200.9
tert-Butyl methyl sulfide	lq	−156.9		276.1	199.9
Butyl methyl sulfone	lq	−535.8			
tert-Butyl methyl sulfone	c	−556.0			
cis-Butyl 9-octadecanoate	lq	−816.9			
tert-Butyl peroxide	lq	−380.9			
Butyl trichloroacetate	lq	−545.8			
Butylurea	c	−419.5			
Butyl vinyl ether	lq	−218.8			232.0
1-Butyne	g	165.2	202.1	290.8	81.4
2-Butyne	g	145.7	185.4	283.3	78.0
2-Butynedinitrile	g	529.2			
2-Butynedioic acid	c	−577.4			
3-Butynoic acid	c	−241.8			
γ-Butyrolactone	lq	−420.9			141.4
(+)-Camphor	c	−319.4			271.2
ϵ-Caprolactam	c	−329.4			
9*H*-Carbazole	c	101.7			
Carbonyl bromide	g	−96.2	−110.9	309.1	61.8
Carbonyl chloride	g	−219.1	−204.9	283.5	57.7
Carbonyl chloride fluoride	g			276.7	52.4
Carbonyl fluoride	g	−639.8			46.8
Chloroacetamide	c	−338.5			
Chloroacetic acid	c	−510.5			
Chloroacetyl chloride	lq	−283.7			
Chloroacetylene	g			242.0	54.3
2-Chlorobenzaldehyde	lq	−118.4			
3-Chlorobenzaldehyde	lq	−126.0			
4-Chlorobenzaldehyde	c	−146.4			
Chlorobenzene	lq	11.0	89.2	209.2	150.2
2-Chlorobenzoic acid	c	−404.5			
3-Chlorobenzoic acid	c	−423.3			
4-Chlorobenzoic acid	c	−428.9			163.2
Chloro-1,4-benzoquinone	c	−220.6			
1-Chlorobutane	lq	−188.1			175.0
	g	−154.6	−38.8	358.1	107.6
(±)-2-Chlorobutane	lq	−192.8			
	g	−161.2	−53.5	359.6	108.5
2-Chlorobutanoic acid	lq	−575.5			

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ · mol^{-1}	$\Delta_f G°$ kJ · mol^{-1}	$S°$ J · deg^{-1} · mol^{-1}	$C_p°$ J · deg^{-1} · mol^{-1}
3-Chlorobutanoic acid	lq	−556.3			
4-Chlorobutanoic acid	lq	−566.3			
Chlorocyclohexane	lq	−207.2			
1-Chloro-1,1-difluoroethane	lq				130.5[21]
	g			307.2	82.5
1-Chloro-2,2-difluoroethylene	g	−315.5	−289.1	303.0	72.1
2-Chloro-1,1-difluoroethylene	g	−331.4	−305.0	302.4	
Chlorodifluoromethane	lq				93.0[−41]
	g	−482.6	−450.0	281.0	55.9
2-Chloro-1,4-dihydroxybenzene	c	−382.81			
Chlorodimethylsilane	lq	−79.8			
1-Chloro-2,3-epoxypropane	lq	−148.5			125.1
1-Chloroethane	lq	−136.8	−59.3	190.8	104.3
	g	−112.1	−60.5	275.8	62.6
2-Chloroethanol	lq	−295.4			
1-Chloro-2-ethylbenzene	lq	−54.1			
1-Chloro-4-ethylbenzene	lq	−51.7			
Chloroethylene (vinyl chloride)	lq				89.4
	g	37.3	53.6	263.9	53.7
2-Chloroethyl ethyl ether	g	−301.3			
2-Chloroethyl vinyl ether	g	−170.1			
Chloroethyne	g	213.0	197.0	241.9	54.3
1-Chloro-1-fluoroethane	g	−313.4			
2-Chlorohexane	lq	−246.1			
Chlorofluoromethane	g	−290.8	−265.5	264.3	47.0
Chlorohydroquinone	c	−382.8			
Chloroiodomethane	g	12.6	15.4	296.1	
Chloromethane	lq				75.6[−24]
	g	−81.9	−58.5	234.6	40.8
1-Chloro-3-methylbutane	lq	−216.0			175.1
	g	−179.7			
2-Chloro-2-methylbutane	g	−202.2			
2-Chloro-3-methylbutane	g	−185.1			
1-Chloro-2-methylpropane	lq	−191.1			158.6
	g	−159.4	−49.7	355.0	108.5
2-Chloro-2-methylpropane	lq	−211.2			172.8
	g	−182.2	−64.1	322.2	114.2
1-Chloronaphthalene	lq	54.6			212.6
2-Chloronaphthalene	c	55.2			
1-Chlorooctane	lq	−291.3			198.5
Chloropentafluoroacetone	g	−1121.0			
Chloropentafluoroethane	lq				184.2
	g	−1188.8			
1-Chloropentane	lq	−213.2			
	g	−175.0	−37.4	397.0	130.5
3-Chlorophenol	c	−206.4			
4-Chlorophenol	c	−197.9			
1-Chloropropane	lq	−160.6			132.2
	g	−131.9	−50.7	319.1	84.6
2-Chloropropane	lq	−172.1			
	g	−144.9	−62.5	304.2	87.3

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ · mol^{-1}	$\Delta_f G°$ kJ · mol^{-1}	$S°$ J · deg^{-1} · mol^{-1}	$C_p°$ J · deg^{-1} · mol^{-1}
2-Chloro-1,3-propanediol	lq	−517.5			
3-Chloro-1,2-propanediol	lq	−525.3			
2-Chloropropanoic acid	lq	−522.5			131.6
3-Chloropropanoic acid	c	−549.3			
2-Chloro-1-propene	g	−21.0			
3-Chloro-1-propene (allyl chloride)	lq				125.1
	g	−0.63	43.6	306.7	75.4
N-Chlorosuccinimide	c	−358.1			
α-Chlorotoluene	lq	−32.6			
o-Chlorotoluene	lq				166.8
2-Chloro-1,1,1-trifluoro-ethane	g			326.4	154.6
Chlorotrifluoroethylene	g	−505.5	−523.8	322.1	83.9
Chlorotrifluoromethane	g	−707.8	−667.4	285.4	66.9
Chlorotrimethylsilane	lq	−384.1			
Chlorotrinitromethane	lq	−27.1			
	g	18.4			
Chrysene	c	145.3			
(−)-Cinchonidine	c	29.7			
Cinchonine	c	31.0			
cis-Cinnamic acid	c	−315.0			
trans-Cinnamic acid	c	−338.5			
Cinnamic anhydride	c	−347.7			
Citric acid	c	−1543.9	−1236.4	166.2	
Codeine monohydrate	c	−632.6			
Creatine	c	−537.2			
o-Cresol	c	−204.6		165.4	154.6
	lq				233.6[40]
	g	−128.6	37.1	357.6	130.3
m-Cresol	lq	−194.0		212.6	224.9
	g	−132.3	−40.5	356.8	122.5
p-Cresol	c	−199.3		167.3	150.2
	lq				221.0[40]
	g	−125.4	−30.9	347.6	124.5
Cuban	c	541.3			
Cyanamide	c	58.8			
Cyanide (CN)	g	437.6	407.5	202.6	29.2
Cyanogen	g	306.7	297.2	241.9	56.9
Cyanogen bromide	g	140.5	165.3	248.3	46.9
Cyanogen chloride	g	138.0	131.0	236.2	45.0
Cyanogen fluoride	g	−639.8		224.7	41.8
Cyanogen iodide	c	166.2	185.0	96.2	
	g	205.5	196.6	256.8	48.3
Cyclobutane	g	27.7	110.0	265.4	72.2
Cyclobutanecarbonitrile	lq	103.0			
Cyclobutene	g	156.7	174.7	263.5	67.1
Cyclobutylamine	g	41.2			
Cyclododecane	c	−306.6			
1,3-Cycloheptadiene	g	94.3			
Cycloheptane	lq	−156.6	54.1	242.6	123.1

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ · mol^{-1}	$\Delta_f G°$ kJ · mol^{-1}	$S°$ J · deg^{-1} · mol^{-1}	$C_p°$ J · deg^{-1} · mol^{-1}
Cycloheptanone	lq	−299.4			
1,3,5-Cycloheptatriene	lq	142.2	243.1	214.6	162.8
Cycloheptene	g	−9.2			
Cyclohexane	lq	−156.4	26.7	204.4	154.9
	g	−123.4	31.8	298.3	106.3
cis-Cyclohexane-1,2-dicarboxylic acid	c	−961.1			
trans-Cyclohexane-1,2-dicarboxylic acid	c	−970.7			
Cyclohexanethiol	lq	−140.7		255.6	192.6
	g	−96.1			
Cyclohexanol	lq	−348.1	−133.3	199.6	208.2
Cyclohexanone	lq	−271.2		255.6	182.2
	g	−226.1	−90.8	322.2	109.7
Cyclohexene	lq	−38.5	101.6	214.6	148.3
1-Cyclohexenylmethanol	lq	−382.4			
Cyclohexylamine	lq	−147.7			
Cyclohexylbenzene	lq	−76.6			261.3
Cyclohexylcyclohexane	lq	−329.3			
Cyclooctane	lq	−167.7			
Cyclooctanone	lq	−326.0			
1,3,5,7-Cyclooctatetraene	lq	254.5	358.6	220.3	184.0
Cyclooctene	lq	−74.0			
1,3-Cyclopentadiene	g	134.3	179.3	267.8	
Cyclopentane	lq	−105.1	36.4	204.3	128.9
	g	−76.4	38.6	292.9	83.0
cis-1,2-Cyclopentanediol	c	−484.9			
trans-1,2-Cyclopentanediol	c	−489.9			
Cyclopentanethiol	lq	−89.5	46.8	256.9	165.2
Cyclopentanol	lq	−300.1	−127.8	206.3	184.1
Cyclopentanone	lq	−235.7			154.5
Cyclopentene	lq	4.4	108.5	201.3	122.4
	g	34.0	110.8	291.8	75.1
1-Cyclopentenylmethanol	lq	34.3			
Cyclopentylamine	lq	−95.1		241.0	181.2
Cyclopropane	g	53.3	104.4	237.4	55.6
Cyclopropanecarbonitrile	g	182.8			
Cyclopropene	g	277.1	286.3	223.3	
Cyclopropylamine	lq	45.8		187.7	147.1
	g	77.0			
Cyclopropylbenzene	lq	100.3			
(−)-Cysteine	c	−534.1			
(−)-Cystine	c	−1032.7			
Cytosine	c	−221.3		132.6	
Decafluorobutane	lq				127.2[20]
cis-Decahydronaphthalene	lq	−219.4	68.9	265.0	232.0
trans-Decahydronaphthalene	lq	−230.6	57.7	265.0	228.5
Decanal	g	−330.9	−66.5	578.6	239.7
Decane	lq	−300.9	17.5	425.5	314.4
Decanedioic acid	c	−1082.8			
1,10-Decanediol	c	−693.5			

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ · mol^{-1}	$\Delta_f G°$ kJ · mol^{-1}	$S°$ J · deg^{-1} · mol^{-1}	$C_p°$ J · deg^{-1} · mol^{-1}
1-Decanenitrile	lq	−158.4			
1-Decanethiol	lq	−276.5		476.1	350.4
	g	−211.5	61.4	610.1	255.6
Decanoic acid	c	−713.7			
1-Decanol	lq	−478.1	−132.2	430.5	370.6
1-Decene	lq	−173.8	105.0	425.0	300.8
1-Decyne	g	41.2	252.2	524.5	219.7
Deoxybenzoin	c	−71.0			
Diacetamide	c	−489.0			
Diacetyl peroxide	lq	−535.3			
1,2-Diallyl phthalate	lq	−550.6			
2,2′-Diaminodiethylamine	lq				254[40]
2,6-Diaminopyridine	c	−6.5			
Diazomethane	g	192.5	217.8	242.8	52.5
Dibenz[*de*,*kl*]anthracene	c	182.8			
1,2-Dibenzoylethane	c	−255.6			
trans-1,2-Dibenzoylethylene	c	−114.7	109.8	319.2	
Dibenzoylmethane	c	−223.5			
Dibenzoyl peroxide	c	−369.6			
Dibenzyl	c	44.1	260.0	269.4	255.2
Dibenzyl sulfide	c	99.0			
Dibenzyl sulfone	c	−282.6			
1,2-Dibromobutane	g	−91.5	−13.1	408.8	127.1
1,3-Dibromobutane	lq	−148.0			
1,4-Dibromobutane	g	−87.8			
2,3-Dibromobutane	g	−102.0			
Dibromochlorofluoromethane	g	−231.8	−223.4	342.8	82.4
Dibromochloromethane	g	−20.9	−18.8	327.7	69.2
1,2-Dibromo-1-chloro-1,2,2-trifluoroethane	lq	−691.7			
	g	−656.6			
1,2-Dibromocycloheptane	lq	−157.6			
1,2-Dibromocyclohexane	lq	−162.8			
1,2-Dibromocyclooctane	lq	−173.3			
Dibromodifluoroethane	g	−36.9		327.7	80.8
Dibromodichloromethane	g	−29.3	−19.5	347.8	87.1
Dibromodifluoromethane	g	−429.7	−419.1	325.3	77.0
1,1-Dibromoethane	lq	−66.2			
1,2-Dibromoethane	lq	−79.2	−20.9	223.3	136.0
	g	−37.5			
cis-1,2-Dibromoethylene	g			313.3	68.8
trans-1,2-Dibromoethylene	g			313.5	70.3
Dibromofluoromethane	g	−223.4	−221.1	316.8	65.1
Dibromomethane	lq				105.3
	g	−14.8	−16.2	293.2	54.7
1,3-Dibromo-2-methylpropane	g	−137.6			
1,3-Dibromotetrafluoroethane	lq	−817.7			
	g	−789.1			
1,2-Dibromopropane	lq				160.0
	g	−71.5	−17.7	376.1	102.8
1,2-Dibromotetrafluoroethane	lq				180.3

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ·mol^{-1}	$\Delta_f G°$ kJ·mol^{-1}	$S°$ J·deg^{-1}·mol^{-1}	$C_p°$ J·deg^{-1}·mol^{-1}
Dibutoxymethane	lq	−549.4			
Dibutylamine	lq	−206.0			292.9
Dibutyl disulfide	g	−160.6	53.9	572.8	231.1
Di-*tert*-butyl disulfide	lq	−255.2			
Dibutyl ether	lq	−377.9			278.2
	g	−332.8	−88.5	500.4	204.0
Di-*sec*-butyl ether	lq	−401.5			
	g	−360.9			
Di-*tert*-butyl ether	lq	−399.6			276.1
	g	−362.0			
Dibutylmercury	lq	−97.9			
Dibutyl peroxide	lq	−380.7			
Dibutyl 1,2-phthalate	c	−842.6			498.0
Dibutyl sulfate	lq	−904.6			
Dibutyl sulfide	lq	−220.7	32.2	405.1	284.3
Di-*tert*-butyl sulfide	lq	−232.4			
Dibutyl sulfite	lq	−693.1			
Dibutyl sulfone	c	−610.2			
Dichloroacetic acid	lq	−496.3			
ionized	aq	−507.1			
Dichloroacetyl chloride	lq	−280.4			
1,2-Dichlorobenzene	lq	−17.5			162.4
	g	30.2	82.7	341.5	113.5
1,3-Dichlorobenzene	lq	−20.7			171
	g	25.7	78.6	343.5	113.8
1,4-Dichlorobenzene	c	−42.3			
	lq			175.4	147.8
	g	22.5	77.2	336.7	113.9
Dichlorodifluoromethane	lq				117.2
	g	−477.4	−439.4	300.8	72.3
1,3-Dichlorobutane	g	−195.0			
1,4-Dichlorobutane	g	−183.4			
Dichlorodimethylsilane	g	−461.1		335.4	101.1
Dichlorodiphenylsilane	lq	−278.2			
1,1-Dichloroethane	lq	−158.4			126.3
	g	−127.7	−73.8	305.1	76.2
1,2-Dichloroethane	lq	−167.4			128.4
	g	−126.4	−73.9	308.4	78.7
1,1-Dichloroethylene	lq	−23.9			111.3
	g	2.8	25.4	289.1	67.0
cis-1,2-Dichloroethylene	g	4.6	24.4	289.5	65.1
trans-1,2-Dichloroethylene	lq	−23.1			116.8
	g	5.0	28.6	289.9	66.7
Dichlorofluoromethane	g	−283.0	−253.0	293.1	6l.0
1,1-Dichloro-1-fluoroethane	g			320.2	88.7
1,1-Dichlorofluoroethylene	g			313.9	76.5
1,1-Dichlorofluoromethane	lq				112.6
Dichloromethane	lq	−124.2		177.8	101.2
	g	−95.4	−68.9	270.3	51.0
Dichloropentadienyliron	c	141.0			
1,2-Dichloropropane	lq	−198.8			

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ · mol^{-1}	$\Delta_f G°$ kJ · mol^{-1}	$S°$ J · deg^{-1} · mol^{-1}	$C_p°$ J · deg^{-1} · mol^{-1}
	g	−162.8	−83.1	354.8	98.2
1,3-Dichloropropane	g	−159.2	−82.6	367.2	99.6
2,2-Dichloropropane	g	−173.2	−84.6	326.0	105.9
1,3-Dichloro-2-propanol	lq	−385.4			
2,3-Dichloro-1-propanol	lq	−381.3			
2,3-Dichloropropene	lq	−73.3			
1,2-Dichlorotetrafluoromethane	lq				164.2
	g	−916.3			
2,2-Dichlorotetrafluoroethane	lq	−960.2			111.7
2,2-Dichloro-1,1,1-trifluoro-ethane	g			352.8	102.5
Dicyanoacetylene	lq	500.4			
Dicyanobenzene	c	275.4			
1,4-Dicyanobutane	lq	85.1			128.7
1,4-Dicyano-2-butyne	c	366.5			
Dicyanodiamide	c	22.6	179.5	129.3	118.8
Dicyclopentadiene	c	116.7			
Diethanolamine	c	−493.8			
	lq				233.5[30]
1,1-Diethoxyethane	lq	−491.4			238.0
1,2-Diethoxyethane	lq	−451.4			259.4
Diethoxymethane	lq	−450.4			
1,3-Diethoxypropane	lq	−482.1			
2,2-Diethoxypropane	lq	−538.5			
Diethylamine	lq	−103.7			169.2
	g	−72.2	72.1	352.2	115.7
Diethylamine hydrochloride	c	−358.6			
Diethylbarbituric acid (veronal)	c	−747.7			
1,2-Diethylbenzene	g	−19.0	141.1	434.3	182.6
1,3-Diethylbenzene	g	−21.8	136.7	439.3	176.9
1,4-Diethylbenzene	g	−22.3	137.9	434.0	176.2
Diethyl carbonate	lq	−681.5			212.4
cis-1,2-Diethylcyclopropane	lq	−79.9			
trans-1,2-Diethylcyclopropane	lq	83.3			
Diethyl disulfide	lq	−120.0	9.5	269.3	171.4
	g	−79.4	22.3	414.5	141.3
Diethylenediamine	c	−13.4	240.2	85.8	
Diethylene glycol	lq	−628.5			244.8
	g	−571.1		441.0	135.1
Diethylene glycol dibutyl ether	lq				452[20]
Diethylene glycol diethyl ether	lq				341.4[15]
Diethylene glycol dimethyl ether	lq				274.1
Diethylene glycol monoethyl ether	lq				301.0
Diethylene glycol monomethyl ether	lq				271.1
Diethyl ether	lq	−279.5	−116.7	172.4	172.6
	g	−252.1	−122.3	342.7	119.5

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ · mol^{-1}	$\Delta_f G°$ kJ · mol^{-1}	$S°$ J · deg^{-1} · mol^{-1}	$C_p°$ J · deg^{-1} · mol^{-1}
Di-2-ethylhexyl phthalate	lq				704.7
Diethyl malonate	lq	−805.5			260.7
Diethylmercury	lq	30.1			182.8
Diethyl oxalate	lq	−805.5			
3,3-Diethylpentane	lq	−275.4			278.2
Diethyl peroxide	lq	−223.3			
Diethyl 1,2-phthalate	lq	−776.6		425.1	366.1
Diethyl selenide	lq	−96.2			
Diethyl sulfate	lq	−813.2			
Diethyl sulfide	lq	−119.4		269.3	171.4
	g	−83.6	17.8	368.0	117.0
Diethyl sulfite	lq	−600.7			
Diethyl sulfone	c	−515.5			
Diethyl sulfoxide	lq	−268.0			
N,*N*-Diethylurea	c	−372.2			
Diethylzinc	lq	16.7			
1,2-Difluorobenzene	lq	−330.0		222.6	159.0
	g	−293.8	−242.0	321.9	106.5
1,3-Difluorobenzene	lq	−343.9		223.8	159.1
	g	−309.2	−257.0	320.4	106.3
1,4-Difluorobenzene	lq	−342.3			157.5
	g	−306.7	−252.8	315.6	106.9
2,2′-Difluorobiphenyl	c	−295.9			
4,4′-Difluorobiphenyl	c	−296.5			
1,1-Difluoroethane	lq				118.4
	g	−497.0	−443.0	282.4	67.8
1,1-Difluoroethylene	g	−335.0	−321.5	266.2	60.1
Difluoromethane	g	−452.2	−425.4	246.6	42.9
9,10-Dihydroanthracene	c	66.4			
1,2-Dihydronaphthalene	lq	71.5			
1,4-Dihydronaphthalene	lq	84.2			
Dihydro-2*H*-pyran	lq	−157.4			
5,12-Dihydrotetracene	c	106.4			
2,3-Dihydrothiophene	lq	52.9			
	g	90.7	133.5	303.5	79.8
2,5-Dihydrothiophene	g	86.9	131.6	297.1	83.3
2,5-Dihydrothiophene-1,1-dioxide	c	318.9			
2′,4-Dihydroxyacetophenone	c	−573.6			
1,2-Dihydroxybenzene (pyrocatechol)	c	−354.1	−210.0	150.2	132.2
1,3-Dihydroxybenzene	c	−368.0	−209.2	147.7	131.0
1,4-Dihydroxybenzene (*p*-hydroquinone)	c	−364.5	−207.0	140.2	136.0
Dihydroxymalonic acid	c	−1216.3			
2,4-Dihydroxy-5-methylpyrimidine	c	−468.2			
2,4-Dihydroxy-6-methylpyrimidine	c	−456.9			
Diiodoacetylene	g			313.1	70.3
1,2-Diiodobenzene	c	172.4			

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ · mol^{-1}	$\Delta_f G°$ kJ · mol^{-1}	$S°$ J · deg^{-1} · mol^{-1}	$C_p°$ J · deg^{-1} · mol^{-1}
1,3-Diiodobenzene	c	187.0			
1,4-Diiodobenzene	lq	−30.0			
	c	160.7			
1,2-Diiodoethane	g	75.0	78.5	348.5	82.3
Diiodomethane	lq	66.9	90.4	174.1	134.0
	g	119.5	95.8	309.7	57.7
1,2-Diiodopropane	g	35.6			
1,3-Diiodopropane	lq	−9.0			
Diisobutylamine	lq	−218.5			
Diisopentyl ether	lq				379[100]
Diisopropylamine	lq	−178.5			
Diisopropyl ether	lq	−351.5			216.8
	g	−319.2	−121.9	390.2	158.3
Diisopropylmercury	lq	−13.0			
Diisopropyl sulfide	lq	−181.6		313.0	232.0
	g	−142.1	27.1	415.5	169.2
Diketene	lq	−233.1			
1,2-Dimethoxybenzene	lq	−290.4			
1,1-Dimethoxybutane	lq	−468.1			
2,2-Dimethoxybutane	lq	−485.1			
1,1-Dimethoxyethane	lq	−420.2			
1,2-Dimethoxyethane	lq	−376.7			193.3
Dimethoxymethane	lq	−377.8		244.0	161.3
1,1-Dimethoxypentane	lq	−494.6			
2,2-Dimethoxypentane	lq	−509.2			
1,1-Dimethoxypropane	lq	−443.3			
2,2-Dimethoxypropane	lq	−459.0			
1,1-Dimethoxy-2-methylpropane	lq	−476.2			
N,*N*-Dimethylacetamide	lq	−278.3			175.6
Dimethylamine	lq	−43.9	70.0	182.3	137.7
	g	−18.5	68.5	273.0	70.7
4-(Dimethylamino)benzaldehyde	c	−137.6			
Dimethylaminomethanol	lq	−253.6			
N,*N*-Dimethylaminotrimethylsilane	lq	−279.5			
N,*N*-Dimethylaniline	lq	47.7			214.6[29]
2,6-Dimethylaniline	lq				238.9
2,3-Dimethylbenzoic acid	c	−450.4			
2,4-Dimethylbenzoic acid	c	−458.5			
2,5-Dimethylbenzoic acid	c	−456.1			
2,6-Dimethylbenzoic acid	c	−440.7			
3,4-Dimethylbenzoic acid	c	−468.8			
3,5-Dimethylbenzoic acid	c	−466.4			
3,3′-Dimethylbiphenyl	lq	20.0			
2,2-Dimethylbutane	lq	−213.8		272.5	191.9
	g	−186.1	−9.2	358.2	141.9
2,3-Dimethylbutane	lq	−207.4		287.8	189.7
	g	−178.3	−4.1	365.8	140.5
3,3-Dimethyl-2-butanone	lq	−328.6			

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ · mol^{-1}	$\Delta_f G°$ kJ · mol^{-1}	$S°$ J · deg^{-1} · mol^{-1}	$C_p°$ J · deg^{-1} · mol^{-1}
2,3-Dimethyl-1-butene		−62.6	79.0	365.6	143.5
2,3-Dimethyl-2-butene	lq	−101.4		270.2	174.7
	g	−68.2	76.1	364.6	123.6
3,3-Dimethyl-1-butene	g	−60.5	98.2	343.8	126.5
2,3-Dimethyl-2-butenoic acid	c	−455.6			
Dimethylcadmium	lq	63.6	139.3	201.9	132.0
1,1-Dimethylcyclohexane	lq	−218.7	26.5	267.2	209.2
	g	−180.9	35.2	365.0	154.4
cis-1,2-Dimethylcyclohexane	lq	−211.8		274.1	210.2
	g	−172.1	41.2	374.5	165.5
trans-1,2-Dimethylcyclohexane	lq	−218.2		273.2	209.4
	g	−180.0	34.5	370.9	159.0
cis-1,3-Dimethylcyclohexane	lq	−222.9		272.6	209.4
	g	−184.6	29.8	370.5	157.3
trans-1,3-Dimethylcyclohexane	lq	−215.7		276.3	212.8
	g	−176.5	36.3	376.2	157.3
cis-1,4-Dimethylcyclohexane	lq	−215.6		271.1	212.1
	g	−176.6	38.0	370.5	157.3
trans-1,4-Dimethylcyclohexane	lq	−222.4		268.0	210.2
	g	−184.5	31.7	364.8	157.7
1,1-Dimethylcyclopentane	g	−138.2	39.0	359.3	133.3
cis-1,2-Dimethylcyclopentane	lq	−165.3		269.2	
	g	−129.5	45.7	366.1	134.14
trans-1,2-Dimethylcyclopentane	g	−136.6	38.4	366.8	134.5
cis-1,3-Dimethylcyclopentane	g	−135.9	39.2	366.8	134.5
trans-1,3-Dimethylcyclopentane	g	−133.6	41.5	366.8	134.5
1,1-Dimethylcyclopropane	lq	−33.3			
cis-1,2-Dimethylcyclopropane	lq	−26.3			
trans-1,2-Dimethylcyclopropane	lq	−30.7			
cis-2,4-Dimethyl-1,3-dioxane	lq	−465.2			
4,5-Dimethyl-1,3-dioxane	lq	−451.6			
5,5-Dimethyl-1,3-dioxane	lq	−461.3			
4,4′-Dimethyldiphenylamine	c	−11.72			
Dimethyl disulfide	lq	−62.6	7.0	235.4	146.1
Dimethyl ether	g	−184.1	−112.6	266.4	64.4
N,*N*-Dimethylformamide	lq	−239.3			150.6
Dimethyl fumarate	lq	−729.3			
Dimethylglyoxime	c	−199.7			
2,2-Dimethylheptane	lq	−288.2			
2,6-Dimethyl-4-heptanone	lq	−408.5			297.3
2,2-Dimethylhexane	lq	−261.9	3.0	331.9	
2,3-Dimethylhexane	lq	−252.6	9.1	342.7	
2,4-Dimethylhexane	lq	−257.0	3.7	345.7	
2,5-Dimethylhexane	lq	−260.4	2.5	338.7	249.2
3,3-Dimethylhexane	lq	−257.5	5.2	339.4	246.6
3,4-Dimethylhexane	lq	−251.8	8.5	347.2	
Dimethyl hexanedioate	lq	−886.6			
cis-2,2-Dimethyl-3-hexene	lq	−126.4			
trans-2,2-Dimethyl-3-hexene	lq	−144.9			
cis-2,5-Dimethyl-3-hexene	lq	−151.0			
trans-2,5-Dimethyl-3-hexene	lq	−159.2			

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ · mol^{-1}	$\Delta_f G°$ kJ · mol^{-1}	$S°$ J · deg^{-1} · mol^{-1}	$C_p°$ J · deg^{-1} · mol^{-1}
5,5-Dimethylhydantoin	c	−533.3			
1,1-Dimethylhydrazine	lq	48.9	206.7	198.0	164.1
1,2-Dimethylhydrazine	lq	52.7	212.6	199.2	171.0
3,5-Dimethylisoxazole	lq	−63.2			
Dimethyl maleate	lq	−703.8			263.2
Dimethylmaleic anhydride	c	−581.6			
Dimethyl malonate	lq	−795.8			
Dimethylmercury	lq	59.8	140.3	209.0	
	g	94.4	146.1	306.0	83.3
6,6-Dimethyl-2-methylene-bicyclo[3.1.1]heptane	lq	−7.7			
Dimethyl oxalate	lq	−756.3			
2,2-Dimethylpentane	lq	−238.3		300.3	221.1
	g	−205.9	0.1	392.9	166.0
2,3-Dimethylpentane	lq	−233.1			218.3
	g	−198.9	0.7	414.0	166.0
2,4-Dimethylpentane	lq	−234.6		303.2	224.2
	g	−201.7	3.1	396.6	166.0
3,3-Dimethylpentane	lq	−234.2			
	g	−201.2	2.6	399.7	166.0
Dimethyl pentanedioate	lq	−205.9			
2,4-Dimethyl-3-pentanone	lq	−352.9		318.0	233.7
	g	−311.5			
2,4-Dimethyl-1-pentene	g	−83.8			
4,4-Dimethyl-1-pentene	g	−81.6			
2,4-Dimethyl-2-pentene	g	−88.7			
cis-4,4-Dimethyl-2-pentene	g	−72.6			
trans-4,4-Dimethyl-2-pentene	g	−88.8			
2,7-Dimethylphenanthrene	c	36.4			
4,5-Dimethylphenanthrene	c	89.0			
9,10-Dimethylphenanthrene	c	47.7			
2,3-Dimethylphenol	c	−241.2			206.9
2,4-Dimethylphenol	lq	−228.7			
2,5-Dimethylphenol	c	−246.6			
2,6-Dimethylphenol	c	−237.4			
3,4-Dimethylphenol	c	−242.3			
3,5-Dimethylphenol	c	−244.4			
Dimethyl 1,2-phthalate	lq	−678			303.1
Dimethyl 1,3-phthalate	c	−730.0			
Dimethyl 1,4-phthalate	c	−732.6			261.1
2,2-Dimethylpropane	lq				163.9[6]
	g	−168.0	−1.5	306.4	121.6
2,2-Dimethylpropanenitrile	lq	−39.8		232.0	179.4
2,2-Dimethyl-1,3-propanediol	c	−551.2			
2,2-Dimethylpropanoic acid	lq	−564.4			
2,2-Dimethylpropanoic anhydride	lq	−779.9			
2,2-Dimethyl-1-propanol	lq	−399.4			
2,3-Dimethylpyridine	lq	19.4		243.7	189.5
2,4-Dimethylpyridine	lq	16.2		248.5	184.8
2,5-Dimethylpyridine	lq	18.7		248.8	184.7

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ · mol^{-1}	$\Delta_f G°$ kJ · mol^{-1}	$S°$ J · deg^{-1} · mol^{-1}	$C_p°$ J · deg^{-1} · mol^{-1}
2,6-Dimethylpyridine	lq	12.7		249.2	185.2
3,4-Dimethylpyridine	lq	18.3		240.7	191.8
3,5-Dimethylpyridine	lq	22.5		241.7	184.5
Dimethyl succinate	lq	−835.1			
2,2-Dimethylsuccinic acid	c	−987.8			
meso-2,3-Dimethylsuccinic acid	c	−977.5			
Dimethyl sulfate	lq	−735.5			
Dimethyl sulfide	lq	−65.4			118.1
	g	−37.5	7.0	285.9	74.1
Dimethyl sulfite	lq	−523.6			
Dimethyl sulfone	c	−450.1	−302.5	142.0	
	lq	−373.1	−272		
	g			310.6	100.0
Dimethyl sulfoxide	lq	−204.2	−99.2	188.3	153.0
1,5-Dimethyltetrazole	c	188.7			
2,2-Dimethylthiacyclopropane	lq	−24.2			
5,5-Dimethyl-4-thia-1-hexene	lq	−90.7			
N,*N*-Dimethylurea	c	−319.1			
N,*N*'-Dimethylurea	c	−312.1			
Dimethylzinc	lq	23.4		201.6	129.2
2,3-Dinitroaniline	c	−11.7			
2,4-Dinitroaniline	c	−67.8			
2,5-Dinitroaniline	c	−44.4			
2,6-Dinitroaniline	c	−50.6			
3,4-Dinitroaniline	c	−32.6			
3,5-Dinitroaniline	c	−38.9			
2,4-Dinitroanisole	c	−186.6			
2,6-Dinitroanisole	c	−189.1			
1,2-Dinitrobenzene	c	−1.8	211.5	216.3	
1,3-Dinitrobenzene	c	−27.4	184.6	220.9	
1,4-Dinitrobenzene	c	−38.7			
1,1-Dinitroethane	lq	−148.2			
1,2-Dinitroethane	lq	−165.2			
Dinitromethane	lq	−104.9			
	g	−58.9			
1,5-Dinitronaphthalene	c	30.5			
2,4-Dinitro-1-naphthol	c	−181.4			
2,4-Dinitrophenol	c	−232.6			
2,6-Dinitrophenol	c	−210.0			
1,1-Dinitropropane	lq	−163.2			
1,3-Dinitropropane	lq	−207.1			
2,2-Dinitropropane	lq	−181.2			
2,4-Dinitroresorcinol	c	−415.5			
2,4-Dinitrotoluene	c	−71.6			
2,6-Dinitrotoluene	c	−51.0			
1,3-Dioxane	lq	−379.7			143.9
1,4-Dioxane	lq	−353.9	−188.1	270.2	153.6
	g	−315.8	−180.8	299.8	94.1
1,3-Dioxolane	lq	−333.5			118.0
	g	−298.0			

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ · mol^{-1}	$\Delta_f G°$ kJ · mol^{-1}	$S°$ J · deg^{-1} · mol^{-1}	$C_p°$ J · deg^{-1} · mol^{-1}
1,3-Dioxolan-2-one	c	−581.6			133.9[50]
1,3-Dioxol-2-one	lq	−459.9			
Dipentene	lq	−50.8			249.4
Dipentyl ether	lq				250
N,*N*-Diphenylacetamide	c	−43.1			
Diphenylacetylene	c	312.4			225.9
Diphenylamine	c	130.6			
Diphenylboron bromide	lq	−16.1			
cis,*cis*-1,4-Diphenylbutadiene	c	198.8			
trans,*trans*-1,4-Diphenyl-butadiene	c	178.8			
Diphenylbutadiyne	c	518.4			
1,4-Diphenylbutane	c	−9.9			
1,4-Diphenyl-1,4-butanedione	c	−256.2	7.8	324.7	
1,4-Diphenyl-2-butene-1,4-dione	c	−114.7	111.5	319.2	
Diphenyl carbonate	c	−401.2	−175.9	278.4	
Diphenyl disulfide	c	−148.5			
Diphenyl disulfone	c	−643.2			
Diphenyleneimine	c	126.8			
1,1-Diphenylethane	lq	48.7	245.1	335.9	
1,2-Diphenylethane	lq	51.5	67.2	270.3	
Diphenylethanedione	c	−154.0			
Diphenyl ether	c	−32.1		233.9	216.6
	lq	−14.9	144.2	291.3	268.6
1,1-Diphenylethylene	lq	172.4			
Diphenylethyne	c	312.4			
6,6-Diphenylfulvene	c	197.4			
1,2-Diphenylhydrazine	c	221.3			
Diphenylmercury	c	279.5			
Diphenylmethane	c	71.7		239.3	
	lq	89.7	276.9		233.1
1,3-Diphenyl-2-propanone	c	−84.0			
Diphenyl sulfide	lq	163.4			
Diphenyl sulfone	c	−225.0			
Diphenyl sulfoxide	c	9.7			
1,3-Diphenylurea	c	−122.6			
Dipropylamine	lq	−156.1			253.0[75]
Dipropyl disulfide	lq	−171.3	19.1	373.6	
Dipropyl ether	lq	−328.8		323.9	221.6
	g	−292.9	−105.6	422.5	158.3
Dipropylmercury	lq	−20.9			
Dipropyl sulfate	lq	−859.0			
Dipropyl sulfide	lq	−171.5			
	g	−125.3	33.2	448.4	161.2
Dipropyl sulfite	lq	−646.8			
Dipropyl sulfone	lq	−548.2			
Dipropyl sulfoxide	lq	−329.4			
2,2'-Dipyridyl ketone	c	−19.7			
1,3-Dithiane	g	−10.0	72.4	333.5	110.4
1,2-Dithiolane	g	0.0	47.7	313.5	86.5
1,3-Dithiolane	g	10.0	54.7	323.3	84.7

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ · mol^{-1}	$\Delta_f G°$ kJ · mol^{-1}	$S°$ J · deg^{-1} · mol^{-1}	$C_p°$ J · deg^{-1} · mol^{-1}
Divinyl ether	lq	−39.8			
	g	−13.6			
Divinyl sulfone	lq	−207.4			
Docosanoic acid	c	−983.0			
cis-13-Docosenic acid	c	−866.0			
trans-13-Docosenic acid	c	−960.7			
Dodecane	lq	−350.9	28.1	490.6	376.0
	g	−289.7	50.0	622.5	280.3
Dodecanedioic acid	c	−1130.0			
Dodecanoic acid	c	−774.6			
	lq	−737.9			404.3
1-Dodecanol	lq	−528.5			438.1
1-Dodecene	lq	−226.2		484.8	360.7
	g	−165.4	137.9	618.3	269.6
1-Dodecyne	g	−0.04	268.6	602.4	265.4
Dulcitol	c	−1346.8			
1,2-Epoxybutane	lq	−168.9		230.9	147.0
Ergosterol	c	−789.9			
Ethane	g	−84.0	−32.0	229.1	52.5
Ethane-d_6	g	−107.4	−47.3	244.5	64.6
1,2-Ethanediamine	lq	−63.0		209.2	172.6
1,2-Ethanediol	lq	−455.3	−323.2	163.2	149.3
	g	−392.2	−304.5	303.8	82.7
Ethanedithioamide	c	−20.8			
Ethanedioyl dichloride	lq	−367.6			
1,2-Ethanedithiol	lq	−54.4			
Ethanethiol	lq	−73.6	−5.5	207.0	117.9
	g	−46.1	−4.8	296.1	72.7
Ethanol	lq	−277.6	−174.8	161.0	112.3
	g	−234.8	−167.9	281.6	65.6
Ethene (*see* Ethylene)					
Ethoxybenzene	lq	−152.6			228.5
2-Ethoxyethyl acetate	lq				376.0
2-Ethoxyethanol	lq				210.8
Ethyl acetate	lq	−479.3	−332.7	257.7	170.7
	g	−443.6	−327.4	362.8	113.6
Ethylamine	lq				130.0
	g	−47.4	36.3	283.8	71.5
Ethyl 4-aminobenzoate	c	−418.0			
N-Ethylaniline	lq	4.0	188.7	239.3	
Ethylbenzene	lq	−12.3			183.2
	g	29.9	130.6	360.5	
Ethyl benzoate	lq				246.0
2-Ethylbenzoic acid	c	−441.3			
3-Ethylbenzoic acid	c	−445.8			
4-Ethylbenzoic acid	c	−460.7			
2-Ethyl-1-butene	g	−56.0	80.0	376.6	133.6
Ethyl *trans*-2-butenoate (ethyl crotonate)	lq	−420.1			228.0
Ethyl carbamate	c	−520.5			
Ethyl 4-chlorobutanoate	lq	−566.5			

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ · mol^{-1}	$\Delta_f G°$ kJ · mol^{-1}	$S°$ J · deg^{-1} · mol^{-1}	$C_p°$ J · deg^{-1} · mol^{-1}
Ethyl chloroformate	lq	−505.1			
Ethylcyclobutane	g	−27.5			
Ethylcyclohexane	lq	−211.9	29.1	280.9	211.8
	g	−171.7	39.3	382.6	158.8
1-Ethylcyclohexene	lq	−106.7			
Ethylcyclopentane	lq	−163.4	37.3	279.9	185.8
1-Ethylcyclopentene	g	−19.7			
Ethylcyclopropane	lq	−24.8			
Ethyl diethylcarbamate	lq	−592.3			
Ethyl 2,2-dimethylpropanoate	lq	−577.2			
	g	−536.0			
Ethylene	g	52.5	68.4	219.3	42.9
Ethylene-d_4	g	38.2	59.2	230.5	51.9
Ethylene carbonate	c	−581.5			133.9
Ethylenediaminetetra-acetic acid	c	−1759.4			
Ethylenediammonium chloride	c	−513.4			
2,2′-(Ethylenedioxy)bis-ethanol	lq	−804.2			
Ethylene glycol dibutyl ether	lq				350[20]
Ethylene glycol diethyl ether	lq	−451.4			259.4
Ethylene glycol dimethyl ether	lq	−376.6			193.3
Ethyleneimine	lq	91.9			
	g	126.5(9)	178.0	250.6	52.6
Ethylene oxide	lq	−78.0	−11.8	153.9	88.0
	g	−52.6(6)	−13.1	242.4	47.9
Ethyl formate	lq				149.3
2-Ethylhexanal	lq	−342.5			
3-Ethylhexane	lq	−250.4			
	g	−210.7			
2-Ethyl-1-hexanol	lq	−432.8		347.0	317.5
Ethyl hydroperoxide	g	198.9			
Ethylidenecyclohexane	lq	−103.5			
Ethylidenecyclopentane	lq	−56.7			
Ethyl isocyanide	lq	108.4			
Ethyl isopropyl sulfide	lq	−156.1			
Ethyl lactate	lq				254
Ethyllithium	c	−58.6			
Ethylmercury bromide	c	−107.5			
Ethylmercury chloride	c	−141.1			
Ethylmercury iodide	c	−65.7			
1-Ethyl-2-methylbenzene	g	1.3	131.1	399.2	157.9
2-Ethyl-3-methyl-1-butene	g	−79.5			
Ethyl 2-methylbutanoate	lq	−566.8			
Ethyl 3-methylbutanoate	lq	−570.9			
Ethyl methyl ether	g	−216.4	−117.7	309.2	93.3
3-Ethyl-2-methylpentane	lq	−249.6			
	g	−211.0	21.3	441.1	
3-Ethyl-3-methylpentane	lq	−252.8			
	g	−214.8	19.9	433.0	
3-Ethyl-2-methyl-1-pentene	g	−100.3			

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ·mol^{-1}	$\Delta_f G°$ kJ·mol^{-1}	$S°$ J·deg^{-1}·mol^{-1}	$C_p°$ J·deg^{-1}·mol^{-1}
Ethyl methyl sulfide	lq	−91.6		239.1	144.6
	g	−59.6	11.4	333.1	95.1
Ethyl nitrate	g	−154.1	−36.9	348.3	97.4
Ethyl nitrite	g	−104.2		103.5	99.2
1-Ethyl-2-nitrobenzene	lq	−48.7			
1-Ethyl-4-nitrobenzene	lq	−55.4			
Ethyl 3-oxobutanoate	lq				248.0
3-Ethylpentane	lq	−224.9		314.5	219.6
	g	−189.6	11.0	411.5	166.0
Ethyl pentanoate	lq	−553.0			
2-Ethylphenol	lq		−208.8		
3-Ethylphenol	lq	−214.3			
4-Ethylphenol	c	−224.4			206.9
Ethylphosphonic acid	c	−1051.4			
Ethylphosphonic dichloride	lq	−613.4			
Ethyl propanoate	lq	−502.7			196.1
	g	−463.3	−323.7		
Ethyl propyl ether	g	−272.2		295.0	197.2
Ethyl propyl sulfide	lq	−144.8		309.5	198.4
	g	−104.7	23.6	414.1	139.3
2-Ethylpyridine	lq	7.4			
S-Ethyl thioacetate	lq	−268.2			
2-Ethyltoluene	g	1.3	131.1	399.2	157.9
3-Ethyltoluene	g	−1.8	126.4	404.2	152.2
4-Ethyltoluene	g	−3.2	85.3	398.9	151.5
N-Ethylurea	c	−357.8			
Ethyl β-vinylacrylate	lq	−338.1			
Ethyl vinyl ether	lq	−167.4			
	g	−140.8			
Ethynylbenzene	g	327.3	361.8	321.7	114.9
Ethynylsilane	g			269.4	72.6
Fluoranthene	c	189.9	345.6	230.5	230.2
Fluoroacetamide	c	−496.6			
Fluoroacetic acid	c	−688.3			
Fluoroacetylene	g			269.4	72.6
Fluorobenzene	lq	−150.6		205.9	146.4
	g	−116.0	−69.0	302.6	94.4
2-Fluorobenzoic acid	c	−567.6			
3-Fluorobenzoic acid	c	−582.0			
4-Fluorobenzoic acid	c	−585.7			
Fluoroethane	g	−263.2	−211.0	264.5	58.6
2-Fluoroethanol	lq	−465.7			
Fluoroethylene	g	−138.8			
Fluoromethane	g	−237.8	−213.8	222.8	37.5
1-Fluoropropane	g	−285.9	−200.3	304.2	82.6
2-Fluoropropane	g	−293.5	−204.2	292.1	82.0
Fluorosyltrifluoromethane	g	−766.0	−707.0	322.4	79.4
4-Fluorotoluene	lq	−186.9	−79.8	237.1	171.2
Fluorotribromomethane	g	−190.4	−193.1	345.8	
Fluorotrinitromethane	lq	−220.9			
Formaldehyde	g	−108.6	−102.5	218.8	35.4

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ·mol^{-1}	$\Delta_f G°$ kJ·mol^{-1}	$S°$ J·deg^{-1}·mol^{-1}	$C_p°$ J·deg^{-1}·mol^{-1}
Formamide	lq	−254.0			107.6
	g	−193.9	−141.0	248.6	45.4
Formanilide	c	−151.5			
Formic acid	lq	−424.7	−361.4	129.0	99.5
	g	−378.7	−351.0	248.7	45.2
Formyl fluoride	g	−376.6	−368.1	246.5(8)	40.0
D-(−)-Fructose	c	−1265.6			
D-(+)-Fucose	c	−1099.1			
Fullerene-C_{60}	c	2327.0	2302.0	426.0	520.0
Fumaric acid	c	−811.7	−655.6	168.0	142.0
Fumaronitrile	c	268.2			
Furan	lq	−62.3		177.0	114.8
	g	−34.9	0.88	267.2	65.4
2-Furancarboxaldehyde	lq	−201.6			163.2
2-Furancarboxylic acid	c	−498.4			
2-Furanmethanol	lq	−276.2	−154.2	215.5	204.0
Furfuryl alcohol	lq	−276.2			204.0
Furylacrylic acid	c	−459.0			
Furylethylene	lq	−10.5			
D-(+)-Galactose	c	−1286.3	−918.8	205.4	
D-Gluconic acid	c	−1587.0			
D-(+)-Glucose	c	−1273.3	−910.4	212.1	
D-(−)-Glutamic acid	c	−1009.7	−727.5	191.2	
L-(+)-Glutamic acid	c	−1005.2	−731.3	188.2	
L-Glutamine	c	−826.4			
Glutaric acid	c	−960.0			
Glyceraldehyde	lq	−598.0			
Glycerol	lq	−668.5	−477.0	206.3	218.9
Glyceryl 1-acetate	lq	−909.1			
Glyceryl 1-benzoate	c	−777.3			
Glyceryl 2-benzoate	c	−772.8			
Glyceryl 1,3-diacetate	lq	−1120.7			
Glyceryl 1-dodecanoate	c	−1160.9			
Glyceryl 2-dodecanoate	c	−1152.6			
Glyceryl 1-hexadecanoate	c	−1281.5			
Glyceryl 1-hexanoate	c	−1109.0			
Glyceryl 2-hexanoate	c	−1095.8			
Glyceryl 1-octadecanoate	c	−1324.8			
Glyceryl 1-tetradecanoate	c	−1222.6			
Glyceryl triacetate	lq	−1330.8			
Glyceryl trinitrate	lq	−370.9			
Glyceryl tris(dodecanoate)	c	−2046.0			
Glyceryl tris(tetradecanoate)	c	−2176.0			
Glycine	c	−528.5	−368.6	103.5	99.2
ionized; std. state	aq	−469.8	−315.0	111.0	
$^{+}H_3NCH_2COOH$; std. state	aq	−517.9	−384.2	190.2	
Glycylglycine	c	−747.7	−490.6	190.0	
Glyoxal	g	−212.0			
Glyoxime	c	−90.5			
Glyoxylic acid	c	−835.5			
Guanidine	c	−56.0			

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ·mol^{-1}	$\Delta_f G°$ kJ·mol^{-1}	$S°$ J·deg^{-1}·mol^{-1}	$C_p°$ J·deg^{-1}·mol^{-1}
Guanidine carbonate	c	−971.9	−557.4	295.4	258.9
Guanidine nitrate	c	−387.0			
Guanidine sulfate	c	−1205.0			
Guanine	c	−183.9	47.4	160.3	
Guanylurea nitrate	c	−427.2			
L-Gulonic acid-γ-lactone	c	−1219.6			
Heptadecane	g	−393.9	82.1	817.3	394.7
Heptadecanoic acid	c	−924.4			475.7
1-Heptadecene	g	−268.4	179.9	813.1	383.9
Heptanal	lq	−311.5	−100.6	335.4	230.1
	g	−264.0	−86.7	461.7	
Heptane	lq	−224.2			224.9
	g	−187.7	8.0	427.9	166.0
Heptanedioic acid	c	−1009.4			
Heptanenitrile	lq	−82.8			
1-Heptanethiol	g	−150.0	36.2	493.3	186.9
Heptanoic acid	lq	−610.2			265.4
1-Heptanol	lq	−403.3	−142.3	320.1	272.1
	g	−336.4	−120.9	480.3	178.7
2-Heptanone	lq				232.6
1-Heptene	lq	−97.9		327.6	211.8
	g	−62.3	95.8	423.6	155.2
cis-2-Heptene	lq	−105.1			
trans-2-Heptene	lq	−109.5			
cis-3-Heptene	lq	−104.3			
trans-3-Heptene	lq	−109.3			
1-Heptyne	g	103.0	226.7	407.7	151.1
Hexabromoethane	g			441.9	139.3
Hexachlorobenzene	c	−127.6	1.1	260.2	201.3
	g	−35.5	44.2	441.2	173.2
Hexachloroethane	c	−202.8		237.3	198.2
	g	−143.6	−54.9	398.7	136.7
Hexadecafluoroethylcyclo-hexane	lq	−3420.0			
Hexadecafluoroheptane	lq	−3420.8	−3093.0	561.8	419.0
Hexadecane	lq	−456.1			501.6
	g	−374.8	83.7	778.3	371.8
Hexadecanoic acid	c	−891.5	−316.1	452.4	460.7
1-Hexadecanol	c	−686.7	−98.7	451.9	422.0
	lq	−635.4	−96.6	606.7	
1-Hexadecene	lq	−328.7		587.9	488.9
	g	−248.5	171.5	774.1	361.0
1,5-Hexadiene	lq	54.1			
2,4-Hexadienoic acid	c	−390.8			
1,5-Hexadiyne	lq	384.2			
Hexafluoroacetone	g	−1249.3			
Hexafluoroacetylacetone	c	−2286.7			
Hexafluorobenzene	lq	−991.3		280.8	156.6
	g	−955.4	−79.4	383.2	
Hexafluoroethane	g	−1344.2	−1255.8	332.3	106.7
cis-Hexahydroindane	g	−127.2			

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ · mol^{-1}	$\Delta_f G°$ kJ · mol^{-1}	$S°$ J · deg^{-1} · mol^{-1}	$C_p°$ J · deg^{-1} · mol^{-1}
trans-Hexahydroindane	g	−131.4			
Hexamethylbenzene	c	−162.4	117.4	306.3	245.6
1,1,1,3,3,3-Hexamethyldisilazane	lq	−518.0			
Hexamethyldisiloxane	lq	−814.6	−541.8	433.8	311.4
	g	−777.7	−534.5	535.0	238.5
Hexamethylenetetramine	c	125.5	434.8	163.4	
Hexamethylphosphoric triamide	lq				321
Hexanal	g	−248.4	−100.1	422.9	148.2
Hexanamide	c	−423.0			
	lq	−397.0			
Hexane	lq	−198.8	−3.8	296.1	195.6
	g	−167.1(8)	−0.25	388.4	143.1
1,6-Hexanedioic acid	lq	−985.4	−207.3		232.2
1,2-Hexandediol	lq	−577.1			
1,6-Hexanediol	c	−569.9			
Hexanedinitrile	lq	85.1			128.7
1-Hexanethiol	g	−129.9	27.8	454.3	164.1
Hexanoic acid	lq	−583.9			225.0
1-Hexanol	lq	−377.5	−152.3	287.4	240.4
	g	−317.6	−135.6	441.4	155.6
2-Hexanol	lq	−392.9			
3-Hexanol	lq	−392.4			286.2
2-Hexanone	lq	−322.0			213.3
3-Hexanone	lq	−320.2		305.3	216.9
1-Hexene	lq	−74.1	83.6	295.1	183.3
	g	−43.5	84.45	384.6	132.3
cis-2-Hexene	lq	−83.9			
	g	−52.3	76.2	386.5	125.7
trans-2-Hexene	lq	−85.5			
	g	−53.9	76.4	380.6	132.4
cis-3-Hexene	lq	−79.0			
	g	−47.6	83.0	379.6	123.6
trans-3-Hexene	lq	−86.1			
Hexyl acetate	lq				282.8
	g	−54.4	77.6	374.8	132.8
1-Hexyne	g	123.6	218.6	368.7	128.2
(−)-Histidine	c	−466.7			
Hydantoin	c	−448.5			
Hydrazine	lq	50.6	149.2	121.2	98.9
Hydrazinecarbothioamide	c	24.7			
Hydrazobenzene	c	221.3			
Hydroxyacetic acid	c	−663.6			
2′-Hydroxyacetophenone	c	−357.7			
3′-Hydroxyacetophenone	c	370.7			
4′-Hydroxyacetophenone	c	−364.4			
2-Hydroxybenzaldehyde	lq	−279.9			
2-Hydroxybenzaldoxime	c	−183.7			
2-Hydroxybenzoic acid	c	−589.9	−421.3	178.2	159.1
3-Hydroxybenzoic acid	c	−584.9	−417.3	177.0	157.3
4-Hydroxybenzoic acid	c	−584.5	−416.5	175.7	155.1

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ · mol^{-1}	$\Delta_f G°$ kJ · mol^{-1}	$S°$ J · deg^{-1} · mol^{-1}	$C_p°$ J · deg^{-1} · mol^{-1}
(±)-2-Hydroxybutanoic acid	lq	−679.1			
2-Hydroxy-2,4,6-cyclohepta-trienone	c	−239.2			
2-Hydroxyisobutanoic acid	c	−744.3			
2-Hydroxy-1-isopropyl-4-methylbenzene	c	−309.6			
3-Hydroxy-4-methoxybenz-aldehyde	c	−453.6			
4-Hydroxy-4-methyl-2-pentanone	lq				221.3
2-Hydroxymethyl-1,3-propane-diol	c	−744.6			
3-Hydroxy-2-naphthalene-carboxylic acid	c	−547.7			
5-Hydroxy-1-pentanal	lq	−479.9			
trans-(−)-4-Hydroxyproline	c	−661.1			
(*S*)-2-Hydroxypropanoic acid	c	−694.0			
2-Hydroxypropanonitrile	lq	−138.9	34.3		
2-Hydroxypyridine	c	−166.3			
3-Hydroxypyridine	c	−132.0			
4-Hydroxypyridine	c	−144.6			
8-Hydroxyquinoline	c	−81.2			
(−)-2-Hydroxysuccinic acid	c	−1103.7	−884.7		
(±)-2-Hydroxysuccinic acid	c	−1105.7			
Hypoxanthene	c	−110.8	76.9	145.6	134.5
Icosane	g	−455.8	117.3	934.1	463.3
Icosanoic acid	c	−1011.9			545.1
Icosene	g	−330.2	205.1	929.9	452.5
Imidazole	c	49.8			
Iminodiacetic acid	c	−932.6			
Indane	lq	11.5	150.8	56.0	190.3
1*H*-Indazole	c	151.9			
Indene	lq	110.6	217.6	215.3	186.9
1*H*-Indole	c	86.7			
Indole-2,3-dione	c	−268.2			
Iodoacetone	g	−130.5			
Iodobenzene	lq	117.1		205.4	158.7
	g	164.9	187.8	334.1	100.8
2-Iodobenzoic acid	c	−302.3			
3-Iodobenzoic acid	c	−316.9			
4-Iodobenzoic acid	c	−316.1			
Iodocyclohexane	lq	−97.2			
Iodoethane	lq	−40.0	14.7	211.7	115.1
	g	−8.1	l9.2	306.0	66.9
Iodoethylene	g			285.0	57.9
Iodomethane	g	14.4	15.6	254.1	44.1
2-Iodo-2-methylpropane	lq	−107.5			162.3
	g	−72.0	23.6	342.2	118.3
1-Iodonaphthalene	lq	161.5			
2-Iodonaphthalene	c	144.3			
2-Iodophenol	c	−95.8			
3-Iodophenol	c	−94.5			

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds *(Continued)*

Substance	Physical State	$\Delta_f H°$ kJ·mol^{-1}	$\Delta_f G°$ kJ·mol^{-1}	$S°$ J·deg^{-1}·mol^{-1}	$C_p°$ J·deg^{-1}·mol^{-1}
4-Iodophenol	c	−95.4			
1-Iodopropane	lq	−66.0			126.8
	g	−30.0			
2-Iodopropane	lq	−74.8			91.0
	g	−40.3	20.1	324.5	90.1
3-Iodopropanoic acid	c	−460.0			
3-Iodo-1-propene	g	91.5			
α-Iodotoluene	lq	57.7			
3-Iodotoluene	lq	79.1			
4-Iodotoluene	lq	67.4			
Isobutanenitrile	g	25.4	103.6	313.3	96.4
Isobutylamine	lq	−132.6			183.2
Isobutylbenzene	lq	−69.8			
Isobutyl trichloroacetate	lq	−553.4			
Isocyanomethane	g	163.5	165.7	246.9	52.9
(−)-Isoleucine	c	−637.9	−347.2	208.0	188.3
(±)-Isoleucine	c	−635.3			
Isoxazole	g	78.6			
Isopropenyl acetate	lq	−386.4			
Isopropyl acetate	lq	−518.9			199.4
Isopropylamine	lq	−112.3		218.3	163.8
	g	−83.7	32.2	312.2	97.5
Isopropylbenzene	lq	−41.1	124.3	279.8	210.7
	g	4.0	137.0	388.6	151.7
1-Isopropyl-2-methylbenzene	lq	−73.3			
1-Isopropyl-3-methylbenzene	lq	−78.6			
1-Isopropyl-4-methylbenzene	lq	−78.0	119.1	306.6	
Isopropyl methyl ether	lq	−278.8		253.8	161.9
	g	−252.0	−120.9	332.3	111.1
2-Isopropyl-5-methylphenol	c	−309.7			
Isopropyl methyl sulfide	lq	−105.7		263.1	172.4
	g	−90.5	13.4	359.3	117.2
Isopropyl nitrate	g	−191.0	−40.7	373.2	120.7
2-Isopropylphenol	lq	−233.7			
3-Isopropylphenol	lq	−252.5			
4-Isopropylphenol	lq	−265.9			
Isopropyl thioacetate	lq	−298.2			
Isopropyl trichloroacetate	lq	−536.0			
Isoquinoline	c	144.5			
	lq				196.8
Ketene	g	−47.5	−48.3	247.6	51.8
(+)-Lactic acid	c	−694.1	−522.9	142.3	
(±)-Lactic acid	lq	−674.5	−518.2	192.1	
β-Lactose	c	−2236.7	−1567.0	386.2	
(+)-Leucine	c	−637.3	−347.2	208.0	
(−)-Leucine	c	−637.4	−346.3	211.8	201.0
(+)-Limonene	lq	−54.5			249.0
(±)-Lysine	c	−678.6			
Malic acid	c	−789.4	−625.1	160.8	137.0
Maleic anhydride	c	−469.8			
(R)-Malic acid	c	−1105.7			
(S)-Malic acid	c	−1103.6			

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ · mol^{-1}	$\Delta_f G°$ kJ · mol^{-1}	$S°$ J · deg^{-1} · mol^{-1}	$C_p°$ J · deg^{-1} · mol^{-1}
Malonamide	c	−546.0			
Malonic acid	c	−891.0			
Malonodiamide	c	−546.1			
Malononitrile	c	186.6			
D-(+)-Maltose	c	−2220.9	−1726.3		
(±)-Mandelic acid	c	−579.4			
(+)-Mannitol	c	−1337.1	−942.2	238.5	
D-(+)-Mannose	c	−1263.0			
2-Mercaptopropanoic acid	lq	−468.2	−343.9	228.9	
Methane	g	−74.6	−50.5	186.3	35.7
Methane-d_4	g	−88.2	−59.5	198.9	40.3
Methanethiol	lq	−46.7	−7.7	169.2	90.5
	g	−22.9	−9.9	255.1	50.3
Methanol	lq	−239.1	−166.6	126.8	81.2
	g	−201.0	−162.3	239.9	44.1
(−)-Methionine	c	−577.5	−505.8	231.5	
2-Methoxybenzaldehyde	c	−266.5			
3-Methoxybenzaldehyde	lq	−276.1			
4-Methoxybenzaldehyde	lq	−267.2			
Methoxybenzene	lq	−114.8			199.0
	g	−67.9			
2-Methoxybenzoic acid	c	−538.5			
3-Methoxybenzoic acid	c	−553.5			
4-Methoxybenzoic acid	c	−561.7			
2-Methoxyethanol	lq				171.1
2-Methyoxyethyl acetate	lq				310.0
2-Methoxytetrahydropyran	lq	−442.3			
5-Methoxytetrazole	c	69.1			
1-Methoxy-2,4,6-trinitro-benzene	c	−157.5			
Methyl (CH_3)	g	145.7	147.9	194.2	38.7
Methyl acetate	lq	−445.8			141.9
	g	−413.3		324.4	86.0
Methyl acrylate	lq	−362.2	−243.2	239.5	158.8
	g	−333.0	−237.6		
Methylamine	lq	−47.2	35.7	150.2	102.1
	g	−22.5	32.7	242.9	50.1
N-Methylaniline	lq	32.2			207.1
o-Methylaniline	lq	−6.3			209.6
	g	56.4	167.6	351.0	130.2
m-Methylaniline	lq	−8.1			227.0
	g	54.6	165.4	352.5	125.5
p-Methylaniline	lq	−23.5			
	g	55.3	167.7	347.0	126.2
Methyl benzoate	lq	−343.5			221.3
2-Methylbenzoic acid	c	−416.5			
	lq				174.9
3-Methylbenzoic acid	c	−426.1			
	lq				163.6
4-Methylbenzoic acid	c	−429.2			
	lq				169.0

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ · mol^{-1}	$\Delta_f G°$ kJ · mol^{-1}	$S°$ J · deg^{-1} · mol^{-1}	$C_p°$ J · deg^{-1} · mol^{-1}
2-Methylbenzoic anhydride	c	−533.5			
4-Methylbenzoic anhydride	c	−520.9			
1-Methylbicyclo[4.1.0]heptane	lq	−59.9			
1-Methylbicyclo[3.1.0]hexane	lq	−33.2			
2-Methylbiphenyl	lq	108.0			
3-Methylbiphenyl	lq	85.4			
4-Methylbiphenyl	c	55.2			
2-Methyl-1,3-butadiene	lq	48.2		229.3	152.6
	g	75.5	145.9	315.6	104.6
3-Methyl-1,2-butadiene	g	129.7	198.6	319.7	105.4
2-Methylbutane	lq	−178.4		260.4	164.8
	g	−154.0	−14.8	343.6	118.8
2-Methyl-2-butanethiol	lq	−162.8		290.1	198.1
	g	−127.1	9.2	386.9	143.5
3-Methyl-1-butanethiol	g	−114.9			
3-Methyl-2-butanethiol	lq	−158.8			
2-Methylbutanoic acid	lq	−554.4			
3-Methylbutanoic acid	lq	−561.6			197.1
2-Methyl-1-butanol	lq	−356.6			220.1
3-Methyl-1-butanol	lq	−356.4			210.0
2-Methyl-2-butanol	lq	−379.5	−175.3	229.3	247.1
(±)-3-Methyl-2-butanol	lq	−366.6			232.2
3-Methyl-2-butanone	lq	−299.5		268.5	179.9
	g	−262.5			
2-Methyl-1-butene	lq	−61.1		254.0	157.2
	g	−35.3	65.6	339.5	110.0
3-Methyl-1-butene	lq	−51.5		253.3	156.1
	g	−27.6	74.8	333.5	118.6
2-Methyl-2-butene	lq	−68.6		251.0	152.8
	g	−41.8	59.7	338.6	105.0
trans-2-Methyl-2-butenedioic acid [also *cis*]	c	−824.4			
cis-2-Methyl-2-butenoic acid	c	−455.6			
trans-2-Methyl-2-butenoic acid	c	−490.8			
3-Methylbutyl acetate	lq				248.5
3-Methyl-1-butyne	g	136.4	205.5	319.0	104.7
Methyl *trans*-2-butenoate	lq	−382.8			
Methylcyclobutane	lq	−44.5			
Methylcyclobutanecarboxylic acid	lq	−395.0			
Methylcyclohexane	lq	−190.1	20.3	247.9	184.9
	g	−154.7	27.3	343.3	135.0
cis-2-Methylcyclohexanol	lq	−390.2			200[17]
trans-2-Methylcyclohexanol	lq	−415.8			200[17]
cis-3-Methylcyclohexanol	lq	−416.1			292[17]
trans-3-Methylcyclohexanol	lq	−394.4			202[17]
cis-4-Methylcyclohexanol	lq	−413.2			202[17]
trans-4-Methylcyclohexanol	lq	−433.3			202[17]
2-Methylcyclohexene	lq	−81.2			
Methylcyclopentane	lq	−138.0	31.5	247.9	158.7
	g	−106.2	35.8	339.9	109.8

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ·mol^{-1}	$\Delta_f G°$ kJ·mol^{-1}	$S°$ J·deg^{-1}·mol^{-1}	$C_p°$ J·deg^{-1}·mol^{-1}
1-Methylcyclopentanol	lq	−343.3			
2-Methylcyclopentanone	lq	−265.3			
1-Methylcyclopentene	g	−3.8	102.1	326.4	100.8
3-Methylcyclopentene	g	7.4	115.0	330.5	100.0
4-Methylcyclopentene	g	14.6	121.6	328.9	100.0
1-Methylcyclopropene	lq	1.7			
	g	243.6			
Methylenecyclobutane	g	121.6			
Methylenebutanedioic acid	c	−841.1			
Methylenecyclohexane	lq	−61.3			
Methylenecyclohexene	lq	−12.7			
Methylenecyclopropane	g	200.5			
Methyl decanoate	lq	−640.4			
Methyl 2,2-dimethylpropanoate	lq	−530.0			257.9
2-Methyl-1,3-dioxane	lq	−436.4			
4-Methyl-1,3-dioxane	c	416.1			
N-Methyldiphenylamine	lq	120.5			
4-Methyldiphenylamine	c	49.0			
Methyl dodecanoate	lq	−693.0			
Methylene (CH_2)	g	390.4	372.9	194.9	33.8
Methylenebutanedioic acid	c	−841.1			
Methylenecyclohexane	lq	−61.3			
2-Methylenecyclohexanol	lq	−277.6			
3-Methylenecyclohexene	lq	−12.7			
2-Methylenecyclopentanol	lq	46.9			
Methylenecyclopropane	g	200.5			
Methylenesuccinic acid	c	−841.2			
Methylene sulfate	c	−688.7			
N-Methylformamide	lq				123.8
Methyl formate	lq	−386.1			119.1
	g	−357.4	−297.2	285.3	64.4
Methyl 2-furancarboxylate	lq	−450.0			
2-Methyl-2,5-furandione	lq	−504.5			
α-Methyl-(+)-glucoside	c	−1233.4			
N-Methylglycine	c	−513.3			
Methylglyoxal	g	−27.1			
Methylglyoxime	c	−126.8			
2-Methylheptane	lq	−255.0		356.4	252.0
	g	−215.4	12.8	452.5	
3-Methylheptane	lq	−252.3		362.6	250.2
	g	−212.5	13.7	461.6	
4-Methylheptane	lq	−251.6			251.1
	g	−212.0	16.7	453.3	
Methyl heptanoate	lq	−567.1			285.1
2-Methylhexane	lq	−229.5		323.3	222.9
	g	−194.6	3.2	420.0	166.0
3-Methylhexane	lq	−226.4			214.2
	g	−192.3	4.6	424.1	166.0
Methyl hexanoate	lq	−540.2			
5-Methyl-1-hexene	g	−65.7			
cis-3-Methyl-3-hexene	g	−79.4			

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ · mol^{-1}	$\Delta_f G°$ kJ · mol^{-1}	$S°$ J · deg^{-1} · mol^{-1}	$C_p°$ J · deg^{-1} · mol^{-1}
trans-3-Methyl-3-hexene	g	−76.8			
Methylhydrazine	lq	54.2	179.9	165.9	134.9
	g	94.7	186.9	278.7	71.1
2-Methyl-1*H*-indole	c	60.7			
3-Methyl-1*H*-indole	c	68.2			
Methyl isocyanate	lq	−92.0			
Methyl isocyanide	g	163.5	165.7	246.8	52.9
1-Methyl-4-isopropylbenzene	lq	−78.0			236.4
Methyl isopropyl sulfide	g	−90.4	13.4	359.3	117.2
Methyl isothiocyanate	c	79.4			
	g	131.0	144.4	252.3	65.5
5-Methylisoxazole	lq	−5.6			
Methylmercury bromide	c	−86.2			
Methylmercury chloride	c	−116.3			
Methylmercury iodide	c	−43.5			
Methyl 2-methylbutanoate	lq	−534.3			
Methyl 3-methylbutanoate	lq	−538.9			
7-Methyl-3-methylene-1,6-octadiene	lq	14.5			
(*R*)-1-Methyl-4-(1-methylethenyl)cyclohexene	lq	−54.5			249[20]
1-Methylnaphthalene	lq	56.3	189.4	254.8	224.4
2-Methylnaphthalene	c	44.9	192.6	220.0	196.0
	g	106.7	216.2	380.0	159.8
Methyl nitrate	lq	−156.3	−43.5	217.2	157.3
	g	−124.4	−39.3	318.5	76.5
Methyl nitrite	g	−66.1	1.0	284.3	63.2
Methyl nitroacetate	lq	−464.0			
2-Methyl-5-nitroaniline	c	−91.3			
4-Methyl-3-nitroaniline	c	−71.7			
1-Methyl-2-nitrobenzene	lq	−9.7			
1-Methyl-3-nitrobenzene	lq	−31.5			
1-Methyl-4-nitrobenzene	c	−48.1			
2-Methyl-2-nitropropane	c	−229.8			
2-Methyl-2-nitro-1,3-propanediol	c	−575.3			
2-Methyl-2-nitro-1-propanol	c	−410.0			
2-Methylnonane	lq	−309.8		420.1	313.3
5-Methylnonane	lq	−307.9		423.8	314.4
Methyl phenylcarbamate	c	−186.7			
Methyl *cis*-9-octadecanoate	lq	−734.5			
Methyl octanoate	lq	−590.3			
2-Methyl-2-oxazoline	g	−130.5			
2-Methylpentane	lq	−204.6		290.6	193.7
	g	−174.8	−5.0	380.5	144.2
3-Methylpentane	lq	−202.4		292.5	190.7
	g	−172.1	2.1	379.8	143.1
2-Methyl-2,4-pentanediol	lq				236.0
Methyl pentanoate	lq	−514.2			229.3
2-Methyl-1-pentanol	lq				248.0
2-Methyl-3-pentanol	lq	−396.4			

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ · mol^{-1}	$\Delta_f G°$ kJ · mol^{-1}	$S°$ J · deg^{-1} · mol^{-1}	$C_p°$ J · deg^{-1} · mol^{-1}
3-Methyl-2-pentanol	lq				275.9
3-Methyl-3-pentanol	lq				293.4
4-Methyl-2-pentanol	lq	−394.7			273.0
2-Methyl-3-pentanone	lq	−325.9			
4-Methyl-2-pentanone	lq				213.3
2-Methyl-1-pentene	g	−59.4	77.6	382.2	135.6
2-Methyl-2-pentene	g	−66.9	71.2	378.4	126.6
3-Methyl-1-pentene	g	−49.5	86.4	376.8	142.4
cis-3-Methyl-2-pentene	g	−62.3	73.2	378.4	126.6
trans-3-Methyl-2-pentene	g	−63.1	71.3	381.8	126.6
4-Methyl-1-pentene	g	−51.3	90.0	367.7	126.5
cis-4-Methyl-2-pentene	g	−57.5	82.1	373.3	133.6
trans-4-Methyl-2-pentene	g	−61.5	79.6	368.3	141.4
Methyl 2-methylpropenoate	lq				191.2
4-Methyl-3-penten-2-one	lq				212.5
Methyl pentyl sulfide	g	122.9	35.1	450.7	163.7
3-Methyl-1-phenyl-1-butanone	lq	−220.2			
Methyl phenyl sulfide	lq	43.0			
Methyl phenyl sulfone	c	−345.4			
Methylphosphonic acid	c	−1054			
(±)-2-Methylpiperidine	lq	−124.9			
2-Methylpropanal	lq	−247.4			
	g	−215.8			
N-Methylpropanamide	lq				179
2-Methylpropanamine	lq	−132.6			183.2
2-Methylpropane	g	−134.2	−20.9	294.6	130.5[−12]
2-Methyl-1,2-propanediamine	lq	−133.9			
2-Methyl-1,2-propanediol	lq	−539.7			
2-Methylpropanenitrile	lq	−13.8			
2-Methyl-1-propanethiol	g	−97.3	5.6	362.9	118.3
2-Methyl-2-propanethiol	g	−109.6	0.7	338.0	121.0
2-Methylpropanoic acid	lq				173
2-Methyl-1-propanol	lq	−334.7		214.7	181.2
	g	−283.9	−167.35	359.0	111.3
2-Methyl-2-propanol	lq	−359.2		193.3	219.8
	g	−312.5	−177.7	326.7	113.6
2-Methylpropene	g	−16.9	58.1	293.6	89.1
2-Methylpropenoic acid	lq				161.1
1-Methyl-2-propylbenzene	lq	−72.5			
1-Methyl-3-propylbenzene	lq	−76.2			
1-Methyl-4-propylbenzene	lq	−75.1			
(2-Methylpropyl)benzene	lq	−69.8			240.6
Methyl propyl ether	lq	−266.0		262.9	165.4
	g	−238.2	−109.9	349.5	112.5
Methyl propyl sulfide	g	−82.3	18.4	371.7	117.4
2-Methylpyridine	lq	56.7	166.5	217.9	158.4
	g	99.2	177.1	325.0	100.0
3-Methylpyridine	lq	61.9	214.0	216.3	158.7
	g	106.4	184.3	325.0	99.6
4-Methylpyridine	lq	59.2		209.1	159.0
1-Methyl-1*H*-pyrrole	lq	62.4			

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ · mol^{-1}	$\Delta_f G°$ kJ · mol^{-1}	$S°$ J · deg^{-1} · mol^{-1}	$C_p°$ J · deg^{-1} · mol^{-1}
2-Methyl-1*H*-pyrrole	lq	23.3			
3-Methyl-1*H*-pyrrole	lq	20.5			
N-Methylpyrrolidone	lq	−262.2			307.8
2-Methylquinoline	c	164.4			
Methyl salicylate	lq	−531.8			249.0
Methylsilane	g			256.5	65.9
α-Methylstyrene	g	113.0	208.5	383.7	145.2
cis-(β)-Methylstyrene	g	121.3	216.9	383.7	145.2
trans-(β)-Methylstyrene	g	117.2	213.7	380.3	146.0
Methylsuccinic acid	c	−958.2			
Methylsuccinic anhydride	lq	−617.6			
Methyl tetradecanoate	lq	−743.9			
2-Methylthiacyclopentane	g	−63.3			
4-Methylthiazole	lq	68.0			
Methylthiirane	g	45.8			
2-Methylthiophene	lq	44.6			149.8
	g	83.5	122.9	320.6	95.4
3-Methylthiophene	lq	43.1			
	g	82.6	121.8	321.3	94.9
Methyl *p*-tolyl sulfone	c	−372.8			
5-Methyluracil	c	−462.8			
Methylurea	c	−332.8			
Morphine monohydrate	c	−711.7			
Morpholine	lq				164.8
Murexide	c	−1212.1			
Naphthalene	c	77.9	201.6	167.4	165.7
	g	150.6	224.1	333.1	131.9
1-Naphthaleneacetic acid	c	−359.2			
2-Naphthaleneacetic acid	c	−371.9			
1-Naphthoic acid	c	333.5			
2-Naphthoic acid	c	−346.1			
1-Naphthol	c	−121.0			166.9
2-Naphthol	lq	−124.2			
1,4-Naphthoquinone	c	−183.4			
1-Naphthyl acetate	c	−288.2			
2-Naphthyl acetate	c	−304.3			
1-Naphthylamine	c	67.8			
2-Naphthylamine	c	59.7			
Nicotine	lq	39.3			
Nitrilotriacetic acid	c	−1311.9	−1307.5		
Nitroacetone	lq	−278.6			
2-Nitroaniline	c	−26.1	178.2	176.2	166.0
3-Nitroaniline	c	−38.3	174.1	176.2	158.8
4-Nitroaniline	c	−42.0	151.0	176.2	167.0
Nitrobenzene	lq	12.5	146.2	224.3	185.8
2-Nitrobenzoic acid	c	−378.5	−196.4	208.4	
3-Nitrobenzoic acid	c	−394.7	−220.5	205.0	
4-Nitrobenzoic acid	c	−392.2	−222.0	210.0	181.2
3-Nitrobiphenyl	c	65.1			
4-Nitrobiphenyl	c	40.5			
1-Nitrobutane	g	−143.9	10.1	394.5	124.9

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ · mol^{-1}	$\Delta_f G°$ kJ · mol^{-1}	$S°$ J · deg^{-1} · mol^{-1}	$C_p°$ J · deg^{-1} · mol^{-1}
2-Nitrobutane	g	−163.6	−6.2	383.3	123.5
3-Nitro-2-butanol	lq	−390.0			
N-Nitrodiethylamine	lq	−106.2			
2-Nitrodiphenylamine	c	64.4			
Nitroethane	lq	−143.9			134.4
	g	−102.3	−4.9	315.4	78.2
2-Nitroethanol	lq	−350.7			
2-Nitrofuran	c	−104.1			
5-Nitrofurancarboxylic acid	c	−516.8			
1-Nitroguanidine	c	−92.4			
Nitromethane	lq	−113.1	−14.4	171.8	106.6
	g	−74.3	−6.8	275.0	57.3
(Nitromethyl)benzene	lq	−22.8			
1-Nitronaphthalene	c	42.6			
1-Nitroso-2-naphthol	c	−50.5			
2-Nitroso-1-naphthol	c	−61.8			
4-Nitroso-1-naphthol	c	−107.8			
1-Nitropropane	lq	−167.2			175.3
	g	−123.8			
2-Nitropropane	lq	−180.3			170.3
	g	−139.0			
1-Nitro-2-propanone	c	−294.7			
4-Nitrosodiphenylamine	c	213.0			
β-Nitrostyrene	c	30.5			
4-Nitrotoluene	c	−48.1			172.3
Nonadecane	g	−435.1	108.9	895.2	440.4
1-Nonadecene	g	−309.6	196.7	891.0	429.7
1-Nonanal	g	−310.3	−74.9	539.6	216.8
Nonane	lq	−274.7			284.4
	g	−228.2	24.8	505.7	211.7
1-Nonanethiol	g	−190.8	53.0	571.2	232.7
Nonanoic acid	lq	−659.7			362.4
1-Nonanol	g	−376.3	−110.5	558.6	224.3
2-Nonanone	lq	−397.2			
5-Nonanone	lq	−398.2		401.4	303.6
1-Nonene	g	−103.5	112.7	501.5	201.0
Norleucine	c	−639.1			
Octadecane	c	−567.4		480.2	485.6
	g	−414.6	100.5	856.2	417.6
Octadecanoic acid	c	−947.7			501.5
1,8-Octadecanoic acid	c	−1038.1			
1-Octadecene	g	−289.0	188.3	852.0	406.8
cis-9-Octadecenoic acid	lq	−743.5			577.0[50]
trans-9-Octadecenoic acid	c	−910.9			
1,7-Octadiyne	lq	334.4			
Octafluorocyclobutane	lq				209.8[−6]
	g	−1542.6	−1398.8	400.4	156.2
Octafluoropropane	g	−1783.1			
Octafluorotoluene	lq	−1311.1		355.5	262.3
1-Octanal	g	−289.6	−83.3	500.7	194.0
Octanamide	c	−473.2			

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ · mol^{-1}	$\Delta_f G°$ kJ · mol^{-1}	$S°$ J · deg^{-1} · mol^{-1}	$C_p°$ J · deg^{-1} · mol^{-1}
Octane	lq	−250.1			254.6
	g	−208.6	16.4	466.7	188.9
1-Octanenitrile	lq	−107.3			
1-Octanethiol	g	−44.9	44.6	582.2	209.8
Octanoic acid	lq	−636.0			297.9
1-Octanol	lq	−426.5	−143.1	377.4	305.1
2-Octanol	lq				330.1
2-Octanone	lq	−384.5	−140.3	373.8	273.3
1-Octene	lq	−121.8			241.0
	g	−81.4	104.2	462.5	178.1
cis-2-Octene	lq	−135.7			239.0
trans-2-Octene	lq	−135.7			239.0
1-Octyne	g	82.4	235.4	496.6	174.0
(±)-Ornithine	c	−652.7			
Oxalic acid	c	−821.7	−697.9	109.8	91.0
Oxalic acid dihydrate	c	−1492.0			
Oxaloyl dichloride	lq	−367.6			
Oxaloyl dihydrazide	c	−295.2			
Oxamic acid	c	−661.2			
Oxamide	c	−504.4	−342.7	118.0	
Oxazole	g	−5.5			
2-Oxetanone	lq	−329.9		175.3	122.1
Oxindole	c	−172.4			
2-Oxohexamethyleneimine	c	−329.4	−95.1	168.6	156.8
Oxomethyl (HCO)	g	43.1	28.0	224.7	34.6
2-Oxo-1,5-pentanedioic acid	c	−1026.2			
4-Oxopentanoic acid	c	−697.1			
2-Oxopropanoic acid	lq	−584.5	−463.4	179.5	
8-Oxypurine	c	−64.4			
Papaverine	c	−502.3			
Paraformaldehyde	c	−177.6			
Paraldehyde	lq	−687.0			
Pentachloroethane	lq	−187.6			173.8
	g	−142.0	−70.3	381.5	118.1
Pentachlorofluoroethane	g	−317.2	−234.0	391.8	
Pentachlorophenol	c	−292.4	−144.1	251.9	202.0
Pentacyclo[4.2.0.0^{2,5}.0^{3,8}.0^{4,7}]-octane	c	541.8			
Pentadecane	g	−352.8	75.2	739.4	349.0
Pentadecanoic acid	c	−861.7			443.3
1-Pentadecene	g	−227.2	163.1	735.2	338.2
1-Pentadecyne	g	−61.8	293.9	719.3	33.41
1,2-Pentadiene	g	140.7	210.4	333.5	105.4
cis-1,3-Pentadiene	g	81.5	145.8	324.3	94.6
trans-1,3-Pentadiene	g	76.5	146.73	319.7	103.3
1,4-Pentadiene	g	105.7	170.3	333.5	105.0
2,3-Pentadiene	g	133.1	205.9	324.7	101.3
Pentaerythritol	c	−920.6	−613.8	198.1	190.4
Pentaerythritol tetranitrate	c	−538.6			
Pentafluorobenzoic acid	c	−1239.6			
Pentafluoroethane	g	−1104.6	−1029.3	333.7	95.7

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ·mol^{-1}	$\Delta_f G°$ kJ·mol^{-1}	$S°$ J·deg^{-1}·mol^{-1}	$C_p°$ J·deg^{-1}·mol^{-1}
Pentafluorophenol	c	−1024.1			
2,3,4,5,6-Pentafluorotoluene	lq	−883.8		306.4	225.8
Pentamethylbenzene	c	−133.6			
	g	−74.5	123.3	443.9	216.5
Pentamethylbenzoic acid	c	−536.1			
Pentanal	g	−228.5	−108.3	383.0	125.4
Pentanamide	c	−379.5			
1-Pentanamine	lq				218.0
Pentane	lq	−173.5	−9.3	262.7	167.2
	g	−146.9	−8.4	349.0	120.2
1,5-Pentanediol	lq	−531.5			321.3
2,4-Pentanedione	lq	−423.8			208.2
	g	−380.6		397.9	120.1
1,5-Pentanedithiol	g	−71.0			
Pentanenitrile	lq	−33.1			180
1-Pentanethiol	lq	−151.3			
Pentanoic acid	lq	−559.4		259.8	210.3
	g	−491.9	−357.2	439.8	
1-Pentanol	lq	−351.6			208.1
	g	−294.7	−146.0	402.5	133.1
2-Pentanol	lq	−365.2			
	g	−311.0			
3-Pentanol	lq	−368.9			239.7
	g	−311.4	−158.2	382.0	
2-Pentanone	lq	−297.3			184.1
	g	−259.0	−137.1	376.2	121.0
3-Pentanone	lq	−296.5		266.0	190.9
1-Pentene	lq	−46.0		262.6	154.0
	g	−21.2	79.1	345.8	109.6
cis-2-Pentene	lq	−53.7		258.6	151.7
	g	−27.6	71.8	346.3	101.8
trans-2-Pentene	lq	−58.2		256.5	157.0
	g	−31.9	69.9	340.4	108.5
cis-2-Pentenenitrile	lq	71.8			
trans-2-Pentenenitrile	lq	74.9			
trans-3-Pentenenitrile	lq	80.9			
2-Pentenoic acid	lq	−446.4			
3-Pentenoic acid	lq	−434.8			
4-Pentenoic acid	lq	−430.6			
cis-3-Penten-1-yne	lq	226.5			
trans-3-Penten-1-yne	lq	228.2			
Pentyl acetate	lq				261.0
1-Pentyne	g	144.4	210.3	329.8	106.7
2-Pentyne	g	128.9	194.2	331.8	98.7
Perfluoropiperidine	lq	−2020.5	−1768.5	393.4	296.8
Perylene	c	182.8			
α-Phellandrene	lq	41.3			
Phenanthrene	c	116.2	268.3	215.1	220.6
9,10-Phenanthrenedione	c	−154.7			
Phenazine	c	237.0			
Phenol	c	−165.1	−50.4	144.0	127.4

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ·mol^{-1}	$\Delta_f G°$ kJ·mol^{-1}	$S°$ J·deg^{-1}·mol^{-1}	$C_p°$ J·deg^{-1}·mol^{-1}
	lq				199.8[41]
	g	−96.4	−32.9	315.6	103.6
Phenoxyacetic acid	c	−513.8			
Phenyl acetate	lq	−334.9			
Phenylacetic acid	c	−398.7			
Phenylacetylene	g	327.3	363.5	321.7	114.9
(±)-3-Phenyl-2-alanine	c	−466.9	−211.7	213.6	203.0
Phenyl benzoate	c	−241.0			
Phenylboron dichloride	lq	−299.4			
1-Phenylcyclohexene	lq	−16.8			
Phenylcyclopropane	lq	100.3			
N-Phenyldiacetimide	c	−362.5			
1,3-Phenylenediamine	c	−7.8		154.5	159.6
Phenyl formate	lq	−268.7			
N-Phenylglycine	c	−402.5			
(±)-2-Phenylglycine	c	−431.8			
Phenylhydrazine	lq	141.0			217.0
Phenyl 2-hydroxybenzoate	c	−436.6			
Phenylmethanethiol	lq	43.5			
Phenylmethyl acetate	lq				148.5
N-Phenyl-2-naphthylamine	c	159.8			
1-Phenyl-1-propanone	lq	−167.2			
1-Phenyl-2-propanone	lq	−151.9			
1-Phenylpyrrole	c	154.3			
2-Phenylpyrrole	c	139.2			
Phenylsuccinic acid	c	−841.0			
S-Phenyl thioacetate	lq	−122.0			
Phenyl vinyl ether	lq	−26.2			
Phosgene	g	−220.9	−206.8	283.8	57.7
Phthalamide	c	−433.1			
l,2-Phthalic acid	c	−782.0	−591.6	207.9	188.3
l,3-Phthalic acid	c	−803.0			
1,4-Phthalic acid	c	−816.1			
Phthalic anhydride	c	−460.1	−331.0	180.0	160.0
Phthalonitrile	c	280.6			
Picric acid	c	−214.4			
α-Pinene	lq	−16.4			
β-Pinene	lq	−7.7			
Piperazine	c	−45.6	240.2	85.8	
2,5-Piperazinedione	c	−446.5			
Piperidine	lq	−86.4		210.0	179.9
2-Piperidone	c	−306.6	−112.1	164.9	(lq 307.8)
L-Proline	c	515.2			
Propadiene	g	190.5	202.4	243.9	59.0
Propanal	lq	−215.3			137.2
	g	−185.6	−130.5	304.5	80.7
Propanamide	c	−338.2			
Propane	lq				98.3[−43]
	g	−103.8	−23.4	270.2	73.6
Propanediamide	c	−546.1			
(±)-1,2-Propanediamine	lq	−97.8			

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ · mol^{-1}	$\Delta_f G°$ kJ · mol^{-1}	$S°$ J · deg^{-1} · mol^{-1}	$C_p°$ J · deg^{-1} · mol^{-1}
1,2-Propanediol	lq	−485.7			190.8
1,3-Propanediol	lq	−464.9			
1,2-Propanedione	lq	−309.1			
Propanedinitrile	lq	186.4			
1,2-Propanedithiol	lq	−79.4			
1,3-Propanedithiol	lq	−79.4			
Propanenitrile	lq	15.5	89.2	189.3	119.3
1-Propanethiol	lq	−99.9		242.5	144.6
	g	−67.9	2.2	336.4	94.8
2-Propanethiol	lq	−105.0		233.5	145.3
	g	−76.2	−2.6	324.3	96.0
1,2,3-Propanetriol tris(acetate)	lq	−1330.8		458.3	384.7
Propanoic acid	lq	−510.7	−383.5	191.0	152.8
Propanoic anhydride	lq	−679.1	−475.6		235.0
1-Propanol	lq	−302.6	−170.6	193.6	143.7
	g	−255.1	−161.8	322.7	85.6
2-Propanol	lq	−318.1	−180.3	181.1	155.0
	g	−272.6	−173.4	309.2	89.3
2-Propenal	g	−85.8	−64.6		
Propene	g	20.0	62.8	266.6	64.3
trans-1-Propene-1,2-dicarboxylic acid	c	−824.4			
2-Propenenitrile	lq	147.1			108.8
	g	180.6	195.4	274.1	63.8
cis-1,2,3-Propenetricarboxylic acid	c	−1224.7			
trans-1,2,3-Propenetricarboxylic acid	c	−1233.0			
2-Propenoic acid	lq	−383.8			145.7
	g	−336.5	−286.3	315.2	77.8
2-Propen-1-ol	lq	−171.8			138.9
	g	−124.5	−71.3	307.6	76.0
2-Propenyl acetate	lq	−386.2			184.1
cis-1-Propenylbenzene	g	121.3	216.9	383.7	145.2
trans-1-Propenylbenzene	g	117.2	213.7	380.3	146.0
2-Propenylbenzene	lq	88.0			
Propyl acetate	lq				196.2
Propylamine	lq	−101.5			162.5
	g	−70.2	39.8	325.1	91.2
Propylbenzene	lq	−38.3		287.8	214.7
	g	7.9	137.2	400.7	152.3
Propylcarbamate	c	−552.6			
Propylchloroacetate	lq	−515.6			
Propylchlorocarbonate	g	−492.7			
Propylcyclohexane	lq	−237.4		311.9	242.0
	g	−192.5	47.3	419.5	184.2
Propylcyclopentane	lq	−188.8		310.8	216.8
	g	−147.1	52.6	417.3	154.6
Propylene carbonate	lq	−613.2			218.6
Propylene oxide	lq	−123.0		196.5	120.4
	g	−94.7	−25.8	286.9	72.6

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ · mol^{-1}	$\Delta_f G°$ kJ · mol^{-1}	$S°$ J · deg^{-1} · mol^{-1}	$C_p°$ J · deg^{-1} · mol^{-1}
Propyl formate	lq	−500.3			171.4
Propyl nitrate	g	−173.9	−27.3	385.4	121.3
S-Propyl thioacetate	lq	−294.1			
Propyl trichloroacetate	lq	−513.0			
Propyl vinyl ether	lq	−190.9			
2-Propynyl-1-amine	lq	205.7			
Propyne	g	184.9	194.4	248.1	60.7
2-Propynoic acid	lq	−193.2			
1*H*-Purine	c	169.4			
Pyrazine	c	139.8			
1*H*-Pyrazole	c	116.0			
	lq	105.4			
Pyrene	c	125.5		224.9	229.7
Pyridazine	lq	224.8			
Pyridine	lq	100.2	181.3	177.9	132.7
	g	140.4	190.2	282.8	78.1
3-Pyridinecarbonitrile	c	193.4			
3-Pyridinecarboxylic acid	c	−344.9			
Pyrimidine	lq	145.9			
1*H*-Pyrrole	lq	63.1		156.4	127.7
Pyrrole-2-carboxaldehyde	c	−106.4			
Pyrrole-2-carboldoxime	c	12.1			
Pyrrolidine	lq	−41.0		204.1	156.6
	g	−3.6	114.7	309.5	81.1
(±)-2-Pyrrolidinecarboxylic acid	c	−524.2			
2-Pyrrolidone	c	−286.2			164.4
Quinhydrone	c	−82.8	−323.0	325.9	277.0
Quinidine	c	−160.3			
Quinine	c	−155.2			
Quinoline	lq	141.2	275.7	217.2	194.9
Raffinose	c	−3184			
L-(+)-Rhamnose	c	−1073.2			
D-(−)-Ribose	c	−1047.2			
Salicylaldehyde	lq	−279.9			222[18]
Salicylaldoxime	c	−183.7			
Salicylic acid	c	−589.5	−418.1	178.2	
Semicarbazide std. state	aq	−166.9	−40.6	297.9	
(−)-Serine	c	−732.7			
(±)-Serine	c	−739.0			
L-(−)-Sorbose	c	−1271.5	−908.4	220.9	
5,5′-Spirobis(1,3-dioxane)	c	−702.1			
Spiro[2.2]pentane	lq	157.5		193.7	134.5
	g	185.2	265.3	282.2	88.1
cis-Stilbene	lq	183.3			
trans-Stilbene	c	136.9	317.6	251.0	
(−)-Strychnine	c	−171.5			
Styrene	lq	103.8	202.4	237.6	182.0
	g	147.9	213.8	345.1	122.1
Succinic acid	c	−940.5	−747.4	167.3	153.1
Succinic acid monoamide	c	−581.2			

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ · mol^{-1}	$\Delta_f G°$ kJ · mol^{-1}	$S°$ J · deg^{-1} · mol^{-1}	$C_p°$ J · deg^{-1} · mol^{-1}
Succinic anhydride	c	−608.6			
Succinimide	c	−459.0			
Succinonitrile	lq	139.7		191.6	145.6
(+)-Sucrose	c	−2226.1	−1544.7	360.2	
(±)-Tartaric acid	c	−1290.8			
(−)-Tartaric acid	c	−1282.4			
meso-Tartaric acid	c	−1279.9			
α-Terpinene	g	−20.5			
1,1,2,2,-Tetrabromoethane	lq				165.7
Tetrabromoethylene	g			387.1	102.7
Tetrabromomethane	c	29.4	47.7	212.5	144.3
	g	83.9	67.0	358.1	91.2
Tetrabutyltin	lq	−304.6			
Tetracene	c	158.8			
Tetrachloro-1,4-benzo-quinone	c	−288.7			
1,1,2,2,-Tetrachloro-1,2-difluoroethane	lq				178.6
	g	−489.9	−407.1	382.8	123.4
1,1,1,2-Tetrachloroethane	lq				153.8
	g	−149.4	−80.3	355.9	102.7
1,1,2,2,-Tetrachloroethane	lq	−195.0	−95.0	246.9	162.3
	g	−149.2	−85.6	362.7	100.8
Tetrachloroethylene	lq	−50.6			143.4
	g	−10.9	3.0	266.9	
Tetrachloromethane	lq	−128.2	−62.6	216.2	130.7
	g	−95.7	−53.6	309.9	83.4
1,1,1,3-Tetrachloropropane	lq	−207.8			
1,2,2,3-Tetrachloropropane	lq	−251.8			
1,1,2,2-Tetracyanocyclo-propane	c	590			
Tetracyanoethylene	c	623.8			
Tetracyanomethane	c	611.6			
Tetradecane	g	−332.1	66.9	700.4	326.1
Tetradecanoic acid	c	−833.5			432.0
1-Tetradecanol	c	−629.6			388.0
1-Tetradecene	g	−206.5	154.8	696.2	315.3
Tetraethylene glycol	lq	−981.6			428.8
Tetraethylgermanium	lq	−210.5			
Tetraethyllead	lq	52.7	336.4	464.6	307.4
Tetraethylsilane	lq				298.1
Tetraethyltin	lq	−95.8			
1,1,1,2-Tetrafluoroethane	g	−895.8	−826.2	316.2	86.3
Tetrafluoroethylene	g	−658.9	−623.7	300.0	80.5
Tetrafluoromethane	g	−933.6	−888.3	261.6	61.0
2,2,3,3-Tetrafluoro-1-propanol	g	−1061.3			
Tetrahydrofuran	lq	−216.2		204.3	124.0
	g	−184.2		302.4	76.3
Tetrahydro-2-furanmethanol	lq	−435.6			181.2
1,2,3,4-Tetrahydronaphthalene	lq	−29.2			217
5,6,7,8-Tetrahydro-1-naphthol	c	−285.3			

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ · mol^{-1}	$\Delta_f G°$ kJ · mol^{-1}	$S°$ J · deg^{-1} · mol^{-1}	$C_p°$ J · deg^{-1} · mol^{-1}
Tetrahydro-2*H*-pyran	lq	−258.3			156.5
Tetrahydro-2*H*-pyran-2-one	lq	−436.7			
1,2,3,6-Tetrahydropyridine	lq	33.5			
Tetrahydrothiophene	lq	−72.9			
	g	−34.1	−45.8	309.6	92.5
Tetrahydrothiophene-1,1-dioxide	lq				180[20]
Tetraiodoethylene	c	305.0			
Tetraiodomethane	g	474.0	217.1	391.9	95.9
Tetramethylammonium bromide	c	−251.0			
Tetramethylammonium chloride	c	−276.4			
Tetramethylammonium iodide	c	−203.4			
1,2,3,4-Tetramethylbenzene	lq	−90.2	106.7	290.6	
1,2,3,5-Tetramethylbenzene	lq	−96.4	98.7	416.5	240.7
1,2,4,5-Tetramethylbenzene	c	−119.9	101.3	245.6	215.1
2,3,5,6-Tetramethylbenzoic acid	c	−506.1			
2,2,3,3-Tetramethylbutane	c	−269.0		273.7	239.2
	g	−225.6	22.0	389.4	192.5
1,1,2,2-Tetramethylcyclopropane	lq	−119.7			
Tetramethyllead	lq	97.9	262.8	320.1	
	g	135.9	270.7	420.5	144.0
2,2,3,3-Tetramethylpentane	lq	−278.3			271.5
2,2,3,4-Tetramethylpentane	lq	−277.7			
2,2,4,4-Tetramethylpentane	lq	−280.0			266.3
2,3,3,4-Tetramethylpentane	lq	−277.9			
Tetramethylsilane	lq	−264.0			204.1
	g	−239.1	−100.0	359.1	143.9
Tetramethylsuccinic acid	c	−1012.5			
Tetramethylthiacyclopropane	c	−83.0			
Tetramethyltin	g	−18.8			
Tetranitromethane	lq	38.4			
1,1,1,2-Tetraphenylethane	c	223.0			
1,1,2,2-Tetraphenylethane	c	216.0			
Tetraphenylethylene	c	311.5			
Tetraphenylhydrazine	c	457.9			
Tetraphenylmethane	c	247.1	574.0		
Tetraphenyltin	c	412.1			
Tetrapropylgermanium	g	−229.7			
Tetrapropyltin	lq	−211.3			
1,2,3,4-(1*H*)-Tetrazole	c	237.0			
Theobromine	c	−361.5			
2-Thiaadamantane	c	−143.5			
Thiacyclobutane	g	60.6	107.1	285.0	68.3
Thiacycloheptane	g	−61.3	84.1	361.9	124.6
Thiacyclohexane	lq	−106.3		218.2	163.3
	g	−63.5	53.1	323.0	109.7
Thiacyclopentane	g	−33.8	46.0	309.4	90.9
Thiacyclopropane	g	82.2	96.9	255.3	53.7
Thianthrene	c	−182.5			
Thiirane	g	82.0	96.8	255.2	53.3

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ·mol^{-1}	$\Delta_f G°$ kJ·mol^{-1}	$S°$ J·deg^{-1}·mol^{-1}	$C_p°$ J·deg^{-1}·mol^{-1}
Thiirene	g	300.0	275.8	255.3	54.7
Thioacetamide	c	−71.7			
Thioacetic acid	lq	−216.9			
	g	−175.1	−154.0	313.2	80.9
1,2-Thiocresol	lq	44.2			
Thiohydantoic acid	c	−554.8			
Thiohydantoin	c	−249.0			
2-Thiolactic acid	lq	−468.4			
Thiophene	lq	80.2	121.2	181.2	123.8
	g	115.0	126.8	278.9	72.9
Thiophenol	lq	64.1	134.0	222.8	173.2
	g	111.6	147.6	336.9	104.9
Thiosemicarbazide	c	25.1			
Thiourea	c	−89.1	21.8	115.9	
	g	22.9			
(−)-Threonine	c	−807.2			
(±)-Threonine	c	−758.8			
Thymine	c	−462.8			150.8
Thymol	c	−309.7			
Toluene	lq	12.4	113.8	221.0	157.0
	g	50.4	122.0	320.7	103.6
1*H*-1,2,4-Triazol-3-amine	c	76.8			
2,4,6-Triamino-1,3,5-triazine	c	−72.4	184.5	149.1	
2-Triazoethanol	lq	94.6			
Tribenzylamine	c	140.6			
Tribromoacetaldehyde	lq	−130.3			
Tribromochloromethane	g	12.6	9.1	357.8	89.4
Tribromofluoromethane	g	−190.0	−193.1	345.9	84.4
Tribromomethane	lq	−28.5	8.0	220.9	130.7
	g	23.8	−5.0	330.9	71.2
Tributoxyborane	lq	−1199.6			
Tributylamine	lq	−281.6			
Tributyl phosphate	lq	−1456			
Tributylphosphine oxide	c	−460			
Trichloroacetaldehyde	lq	−234.5			151.0
2,2,2-Trichloroacetamide	c	−358.2			
Trichloroacetic acid	c	−503.3			
ionized	aq	−517.6			
Trichloroacetonitrile	g			336.6	96.1
Trichloroacetyl chloride	lq	−280.8			
Trichlorobenzoquinone	c	−269.9			
1,1,1-Trichloroethane	lq	−177.4		227.4	144.3
	g	−144.6	−76.2	323.1	93.3
1,1,2-Trichloroethane	lq	−191.5		232.6	150.9
	g	−151.2	−77.5	337.1	89.0
Trichloroethylene	lq	−43.6			124.4
	g	−9.0	19.9	324.8	80.3
Trichlorofluoromethane	lq	−301.3	−236.8	255.4	121.6
	g	−268.3	−249.3	309.7	78.0
Trichloromethane	lq	−134.5	73.7	201.7	114.2
	g	−102.7	−76.0	295.7	65.7

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ·mol^{-1}	$\Delta_f G°$ kJ·mol^{-1}	$S°$ J·deg^{-1}·mol^{-1}	$C_p°$ J·deg^{-1}·mol^{-1}
1,2,2-Trichloropropane	g	−185.8	−97.8	382.9	112.2
1,2,3-Trichloropropane	lq	−230.6			183.6
	g	−182.9			
1,2,3-Trichloropropene	lq	−101.8			
1,1,2-Trichlorotrifluoroethane	lq	−805.8			170.1
1,1,1-Tricyanoethane	c	351.0			
Tricyanoethylene	c	439.3			
Tridecane	g	−311.5	58.5	661.5	303.2
Tridecanoic acid	c	−806.6			
1-Tridecene	g	−186.0	146.3	657.3	292.4
Triethanolamine	c	−664.2			389.0
Triethoxyborane	lq	−1047.4			
Triethoxymethane	lq	−687.3			
Triethylaluminum	lq	−236.8			
Triethylamine	lq	−127.7			219.9
	g	−92.8	110.3	405.4	160.9
Triethylaminoborane	lq	−198.6			
Triethyl arsenite	lq	−706.7			
Triethylarsine	lq	13.0			
Triethylbismuthine	lq	169.9			
Triethylborane	lq	−194.6	9.4	336.7	241.2
	g	−157.7	16.1	437.8	
Triethylenediamine	c	−14.2	239.7	157.6	
Triethylene glycol	lq	−804.2			
Triethyl phosphate	lq	−1243			
Triethylphosphine	lq	−89.1			
Triethyl phosphite	lq	−861.5			
Triethylstibine	lq	5.0			
Triethylsuccinic acid	c	−1066.5			
Triethyl thiophosphate	lq	−972.8			
Trifluoroacetic acid	lq	−1069.9			
Trifluoroacetonitrile	g	−497.9	−461.9	298.1	77.9
1,1,1-Trifluoroethane	g	−744.6	−678.3	279.9	78.2
1,1,2-Trifluoroethane	g	−730.7			
2,2,2-Trifluoroethanol	lq	−932.4			
Trifluoroethylene	g	−490.4	−469.5	292.6	69.2
Trifluoroiodoethane	g	−644.5			
Trifluoroiodomethane	g	−587.8	−572.0	307.5	70.9
Trifluoromethane	g	−695.4	−658.9	259.6	51.1
(Trifluoromethyl)benzene	g	−599.1	−511.3	372.6	130.4
1,1,1-Trifluoro-2,4-pentane-dione	lq	−1040.2			
3,3,3-Trifluoropropene	g	−614.2			
Trihexylamine	lq	−433.0			
(±)-Trihydroxyglutaric acid	c	−1490			
2,4,6-Trihydroxypryimidine	c	−634.7			
Triiodomethane	g	251.0	178.0	356.2	75.1
Triisopropyl phosphite	lq	−980.3			
Trimethoxyborane	g	−899.1			
Trimethoxyethane	lq	−612.0			
Trimethoxymethane	lq	−570.0			

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ·mol^{-1}	$\Delta_f G°$ kJ·mol^{-1}	$S°$ J·deg^{-1}·mol^{-1}	$C_p°$ J·deg^{-1}·mol^{-1}
Trimethylacetic acid	lq	−564.4			
Trimethylacetic anhydride	lq	−779.9			
2′,4′,5′-Trimethylacetophenone	lq	−252.3			
2′,4′,6′-Trimethylaceto-phenone	lq	−267.4			
Trimethylaluminum	lq	−136.4	−9.9	209.4	155.6
Trimethylamine	lq	−45.7		208.5	137.9
	g	−23.7	98.9	287.1	91.8
std. state	aq	−76.0	93.0	133.5	
Trimethylamine-aluminum chloride adduct	c	−879.1			
Trimethylamine-borane	c	−142.5	70.7	187.0	
Trimethylammonium ion, std. state	aq	−112.9	37.2	196.7	
Trimethyl arsenite	lq	−590.8			
Trimethylarsine	g	11.7			
1,2,3-Trimethylbenzene	lq	−58.5	107.5	267.8	216.4
1,2,4-Trimethylbenzene	lq	−61.8	102.3	284.2	215.0
1,3,5-Trimethylbenzene	lq	−63.4	103.9	273.6	209.3
2,3,4-Trimethylbenzoic acid	c	−486.6			
2,3,5-Trimethylbenzoic acid	c	−488.7			
2,3,6-Trimethylbenzoic acid	c	−475.7			
2,4,5-Trimethylbenzoic acid	c	−495.7			
2,4,6-Trimethylbenzoic acid	c	−477.9			
3,4,5-Trimethylbenzoic acid	c	−500.9			
2,6,6-Trimethylbicyclo-[3.1.1]-2-heptene	lq	16.4			
Trimethylbismuthine	g	192.9			
Trimethylborane	g	−124.3	−35.9	314.7	88.5
2,2,3-Trimethylbutane	g	−204.5	4.3	383.3	164.6
2,2,3-Trimethylbutane	lq	−236.5		292.2	213.5
2,3,3-Trimethyl-1-butene	lq	−117.7			
Trimethylchlorosilane	lq	−382.8	−246.4	278.2	
	g	−352.8	−243.5	369.1	
cis,*cis*-1,3,5-Trimethyl-cyclohexane	g	−215.4	33.9	390.4	179.6
1,1,2-Trimethylcyclopropane	lq	−96.2			
Trimethylene oxide (Oxetane)	lq	−110.8			
	g	−80.5	−9.8	273.9	
Trimethylgallium	g	−46.9			
2,3,5-Trimethylhexane	lq	−284.0			
Trimethylindium	g	170.7			
2,2,3-Trimethylpentane	lq	−256.9	9.3	327.6	188.9
	g	−220.0	17.1	425.2	
2,2,4-Trimethylpentane	lq	−259.2	6.9	328.0	239.1
	g	−224.0	13.7	423.2	
2,3,3-Trimethylpentane	lq	−253.5	10.6	334.4	245.6
	g	−216.3	18.9	431.5	
2,3,4-Trimethylpentane	lq	−255.0	10.7	329.3	247.3
2,2,4-Trimethyl-3-pentanone	lq	−381.6			
2,4,4-Trimethyl-1-pentene	lq	−145.9	86.4	306.3	

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ · mol^{-1}	$\Delta_f G°$ kJ · mol^{-1}	$S°$ J · deg^{-1} · mol^{-1}	$C_p°$ J · deg^{-1} · mol^{-1}
2,4,4-Trimethyl-2-pentene	lq	−142.4	88.0	311.7	
Trimethylphosphine	lq	−122.2			
Trimethylphosphine oxide	c	−477.8			
Trimethyl phosphite	lq	−741.0			
Trimethylsilane	g			331.0	117.9
Trimethylsilanol	lq	−545.0			
Trimethylstibine	g	32.2			
Trimethylsuccinic acid	c	−1000.8			
Trimethylsuccinic anhydride	c	−688.3			
Trimethylthiacyclopropane	lq	−60.5			
Trimethyltin bromide	lq	−185.4			
Trimethyltin chloride	lq	−213.0			
Trimethylurea	c	−330.5			
Trinitroacetonitrile	lq	183.7			
2,4,6-Trinitroanisole	c	−157.3			
1,3,5-Trinitrobenzene	c	−37.2			
1,1,1-Trinitroethane	lq	−96.9			
Trinitroglycerol	lq	−370.9			
Trinitromethane	lq	−32.8			
	g	−0.2			
2,4,6-Trinitrophenetole	c	−204.6			
2,4,6-Trinitrophenol	c	−214.3			
2,4,6-Trinitrophenylhydrazine	c	36.8			
2,4,6-Trinitrotoluene	c	−65.5			
2,4,6-Trinitro-1,3-xylene	c	−102.5			
Trioctylamine	lq	−584.9			
1,3,6-Trioxacyclooctane	lq	−515.9			
1,3,5-Trioxane	c	−522.5		133.0	114.4
Triphenylamine	c	234.7	504.2		
Triphenylarsine	c	310.0			
Triphenylbismuthine	c	469.0			
Triphenylborane	c	48.5			
Triphenylene	c	151.8	329.2	254.7	
1,1,1-Triphenylethane	c	157.2			
1,1,2-Triphenylethane	c	130.2			
Triphenylethylene	c	233.5	514.6		
2,4,6-Triphenylimidazole	c	272			
Triphenylmethane	c	171.2	412.5	312.1	295.0
Triphenylmethanol	c	−3.4	272.8	329.3	
Triphenyl phosphate	c	−757			
Triphenylphosphine	c	232.2			
Triphenylphosphine oxide	c	−60.3			
Triphenylstibine	c	329.3			
Tripropoxyborane	lq	−1127.2			
Tripropylamine	lq	−207.2			
Tripropynylamine	lq	814.2			
Tris(acetylacetonato)-chromium	c	−1533.0			
Tris(diethylamino)phosphine	lq	−289.5			
1,1,1-Tris(hydroxymethyl)-ethane	c	−744.6			

TABLE 6.1 Enthalpies and Gibbs Energies of Formation, Entropies, and Heat Capacities of Organic Compounds (*Continued*)

Substance	Physical State	$\Delta_f H°$ kJ·mol^{-1}	$\Delta_f G°$ kJ·mol^{-1}	$S°$ J·deg^{-1}·mol^{-1}	$C_p°$ J·deg^{-1}·mol^{-1}
Tris(hydroxymethyl)nitro-methane	c	−735.6			
Tris(isopropoxy)borane	lq	−293.3			
Tris(trimethylsilyl)amine	c	−725.1			
(−)-Tryptophane	c	−415.3	−119.4	251.0	238.2
(−)-Tyrosine	c	−685.1	−385.7	214.0	216.4
Undecane	lq	−327.2	22.8	458.1	344.9
Undecanoic acid	c	−735.9			
1-Undecanol	lq	−504.8			
1-Undecene	g	−144.8	129.5	579.4	246.7
10-Undecenoic acid	c	−577			
Uracil	c	−429.4			120.5
Urea	c	−333.1	−196.8	104.6	93.1
	g	−245.8			
Urea nitrate	c	−564.0			
Urea oxalate	c	−1528.4			
5-Ureidohydantoin	c	−718.0	−434.0	195.1	
Uric acid	c	−618.8	−358.8	173.2	166.1
(±)-Valine	c	−628.9	−359.0	178.9	168.8
Valylphenylalanine	c	−767.8			
Vinyl acetate	g	−314.4			
Vinylbenzene	lq	103.8			
Vinylcyclohexane	lq	−88.7			
4-Vinylcyclohexene	lq	26.8			
Vinylcyclopentane	lq	−34.8			
Vinylcyclopropane	lq	122.5			
2-Vinylpyridine	lq	157.1			
Xanthine	c	−379.6	−165.9	161.1	151.3
Xanthone	c	−191.5			
1,2-Xylene	lq	−24.4	110.3	246.5	186.1
	g	19.1	122.1	352.8	133.3
1,3-Xylene	lq	−25.4	107.7	252.2	183.3
	g	17.3	118.9	357.7	127.6
1,4-Xylene	lq	−24.4	110.1	247.4	181.5
	g	18.0	121.1	352.4	126.9
Xylitol	c	−1118.5			
D-(+)-Xylose	c	−1057.8			