

## Standard Enthalpies of Formation at 298.15 K

<u>Substance</u>	<u>Chemical Formula</u>	<u>H<sub>f</sub><sup>o</sup> (kJ/mol)</u>	
ammonia	NH <sub>3</sub> (g)	-46.11	
ammonium chloride	NH <sub>4</sub> Cl(s)	-314.43	
carbon dioxide	CO <sub>2</sub> (g)	-393.51	
carbon monoxide	CO(g)	-110.53	
hydrogen chloride	HCl(g)	-92.31	
hydrochloric acid	HCl(aq)	-167.16	
hydrogen bromide	HBr(g)	-36.40	
nitric acid	HNO <sub>3</sub> (aq)	-207.36	
nitrogen monoxide	NO(g)	+90.25	
nitrogen dioxide	NO <sub>2</sub> (g)	+33.18	
phosphoric acid	H <sub>3</sub> PO <sub>4</sub> (aq)	-1277	
potassium carbonate	K <sub>2</sub> CO <sub>3</sub> (s)	-1151	
potassium chloride	KCl(s)	-436.75	
potassium hydroxide	KOH(s)	-424.76	
potassium hydroxide	KOH(aq)	-482.37	
potassium phosphate	K <sub>3</sub> PO <sub>4</sub> (s)	-1950	
potassium superoxide	KO <sub>2</sub> (s)	-284.9	
sodium bicarbonate	NaHCO <sub>3</sub> (s)	-950.9	
sodium chloride	NaCl(s)	-411.15	
sodium hydroxide	NaOH(s)	-425.61	
sodium hydroxide	NaOH(aq)	-470.11	
sodium sulfate	Na <sub>2</sub> SO <sub>4</sub> (s)	-1387	
sulfuric acid	H <sub>2</sub> SO <sub>4</sub> (aq)	-909.27	
tetraphosphorous decaoxide	P <sub>4</sub> O <sub>10</sub> (s)	-2984	
water	H <sub>2</sub> O(l)	-285.83	
water	H <sub>2</sub> O(g)	-241.82	
methane	CH <sub>4</sub> (g)	-74.81	
ethane	C <sub>2</sub> H <sub>6</sub> (g)	-84.68	
ethene	C <sub>2</sub> H <sub>4</sub> (g)	+52.26	
propane	C <sub>3</sub> H <sub>8</sub> (g)	-103.85	
propene	C <sub>3</sub> H <sub>6</sub> (g)	+20.42	
butane	C <sub>4</sub> H <sub>10</sub> (g)	-126.15	
pentane	C <sub>5</sub> H <sub>12</sub> (g)	-146.44	
octane	C <sub>8</sub> H <sub>18</sub> (l)	-249.9	
methanol	CH <sub>3</sub> OH(l)	-238.86	
ethanol	C <sub>2</sub> H <sub>5</sub> OH(l)	-277.69	
propanol	C <sub>3</sub> H <sub>7</sub> OH(l)	-304	
butanol	C <sub>4</sub> H <sub>9</sub> OH(l)	-327.1	
ethanoic acid	CH <sub>3</sub> CO <sub>2</sub> H(l)	-484.5	
propanoic acid	C <sub>2</sub> H <sub>5</sub> CO <sub>2</sub> H(l)	-510.8	
aminoethane	C <sub>2</sub> H <sub>5</sub> NH <sub>2</sub> (g)	-46.03	
aminopropane	C <sub>3</sub> H <sub>7</sub> NH <sub>2</sub> (g)	-72.39	
aminobutane	C <sub>4</sub> H <sub>9</sub> NH <sub>2</sub> (l)	-127.7	
chloroethane	C <sub>2</sub> H <sub>5</sub> Cl(g)	-112.3	
dichloroethane	C <sub>2</sub> H <sub>4</sub> Cl <sub>2</sub> (l)	-165.2	
chloropropane	C <sub>3</sub> H <sub>7</sub> Cl(g)	-130.1	
dichloropropane	C <sub>3</sub> H <sub>6</sub> Cl <sub>2</sub> (g)	-165.7	
chlorobutane	C <sub>4</sub> H <sub>9</sub> Cl(g)	-147.3	
bromoethane	C <sub>2</sub> H <sub>5</sub> Br(l)	-92.0	
bromopropane	C <sub>3</sub> H <sub>7</sub> Br(l)	-87.87	
glucose	C <sub>6</sub> H <sub>12</sub> O <sub>6</sub> (s)	-1268	"carbohydrate"
hexadecanoic acid	C <sub>15</sub> H <sub>31</sub> CO <sub>2</sub> H(s)	-892.5	"fat"
glutamic acid	C <sub>5</sub> H <sub>9</sub> NO <sub>4</sub> (s)	-1009.7	"protein"