



TABLAS DE MAGNITUDES TERMODINÁMICAS

ALBA LÓPEZ VALENZUELA

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| CALORES ESPECÍFICOS | | |
|---------------------|------------|---------------|
| Sustancia | c (J/gK) | c (cal/g°C) |
| Agua | 4.184 | 1 |
| Aluminio | 0.900 | 0.212 |
| Cobre | 0.386 | 0.094 |
| Estaño | 0.230 | 0.055 |
| Etanol | 2.400 | 0.574 |
| Hielo (-10 °C) | 2.103 | 0.550 |
| Hierro | 0.450 | 0.115 |
| Mercurio | 0.140 | 0.033 |
| Oro | 0.126 | 0.030 |
| Plata | 0.233 | 0.056 |
| Plomo | 0.128 | 0.031 |
| Vapor de agua | 2.016 | 0.480 |
| Vidrio | 0.840 | 0.199 |
| Wolframio | 0.143 | 0.034 |
| Zinc | 0.389 | 0.093 |

| CALORES LATENTES Y TEMPERATURAS DE CAMBIO DE ESTADO | | | | |
|---|-----------|-------------|-----------|-------------|
| Sustancia | T_f (K) | L_f (J/g) | T_v (K) | L_v (J/g) |
| Agua | 273 | 333.5 | 373 | 2257 |
| Aluminio | 932 | 109 | 2573 | 9220 |
| Cobre | 1356 | 205 | 2839 | 4726 |
| Etanol | 159 | 109 | 351 | 879 |
| Hierro | 1803 | 293 | 3323 | 6300 |
| Mercurio | 234 | 11.3 | 630 | 296 |
| Oro | 1336 | 62.8 | 3081 | 1701 |
| Plata | 1234 | 1056 | 2436 | 2323 |
| Plomo | 6008 | 24.7 | 2023 | 858 |
| Zinc | 692 | 102 | 1184 | 1768 |



TABLAS DE MAGNITUDES TERMOQUÍMICAS

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| COMPUESTOS ORGÁNICOS | | | | |
|-----------------------|---|-----------------------------|-----------------------------|--------------------|
| Sustancia | Fórmula | ΔH_f° (kJ/mol) | ΔG_f° (kJ/mol) | S° (J/molK) |
| Metano (g) | CH ₄ (g) | -74.8 | -50.7 | +186.3 |
| Acetileno o etino (g) | C ₂ H ₂ (g) | +226.7 | +209.2 | +200.9 |
| Etileno (g) | C ₂ H ₄ | +52.3 | +68.2 | +219.6 |
| Etano (g) | C ₂ H ₆ (g) | -84.7 | -32.8 | +229.6 |
| Propano(g) | C ₃ H ₈ (g) | -103.8 | -23.3 | +270.3 |
| Butano (g) | C ₄ H ₁₀ (g) | -125.6 | -17.1 | +310.2 |
| Benceno (g) | C ₆ H ₆ (g) | +82.6 | +129.8 | +269.3 |
| Benceno (l) | C ₆ H ₆ (l) | +49.0 | +124.5 | +173.4 |
| Ciclohexano (g) | C ₆ H ₁₂ (g) | -123.4 | +32.0 | +298.4 |
| Ciclohexano (l) | C ₆ H ₁₂ (l) | -156.4 | +26.9 | +204.4 |
| Naftaleno (g) | C ₁₀ H ₈ (g) | +150.6 | +224.2 | +333.2 |
| Naftaleno (l) | C ₁₀ H ₈ (l) | +77.9 | +201.7 | +167.5 |
| Formaldehído (g) | HCHO(g) | -108.6 | -102.5 | +218.8 |
| Acetaldehído (g) | CH ₃ CHO(g) | -166.2 | -128.9 | +250.3 |
| Acetaldehído (l) | CH ₃ CHO(l) | -192.3 | -128.1 | +160.2 |
| Metanol (g) | CH ₃ OH(g) | -200.7 | -162.0 | +239.8 |
| Metanol (l) | CH ₃ OH(l) | -238.7 | -166.3 | +126.8 |
| Etanol (g) | CH ₃ CH ₂ OH(g) | -235.1 | -168.5 | +282.7 |
| Etanol (l) | CH ₃ CH ₂ OH(l) | -277.7 | -174.8 | +160.7 |
| Fenol (s) | C ₆ H ₅ OH(s) | -165.1 | -50.4 | +144.0 |
| Acetona (g) | (CH ₃) ₂ CO(g) | -216.6 | -153.0 | +295.0 |
| Acetona (l) | (CH ₃) ₂ CO(l) | -247.6 | -155.6 | +200.5 |
| Ácido acético (g) | CH ₃ - COOH(g) | -432.3 | -374.0 | +282.5 |
| Ácido acético (l) | CH ₃ - COOH(l) | -484.5 | -389.9 | +159.8 |
| Ácido acético (aq) | CH ₃ - COOH(aq) | -485.8 | -396.5 | +178.7 |
| Ácido benzoico (s) | C ₆ H ₅ - COOH(s) | -385.2 | -245.3 | +167.6 |
| Metilamina (g) | CH ₃ NH ₂ | -23.0 | +32.2 | +243.4 |
| Anilina (g) | C ₆ H ₅ NH ₂ (g) | +86.7 | +166.8 | +319.3 |
| Anilina (l) | C ₆ H ₅ NH ₂ (l) | +31.6 | +149.2 | +191.3 |

| COMPUESTOS INORGÁNICOS | | | | |
|------------------------------------|-------------------------------------|-----------------------------|-----------------------------|--------------------|
| Elemento | Fórmula | ΔH_f° (kJ/mol) | ΔG_f° (kJ/mol) | S° (J/molK) |
| Azufre | S ₈ (g) | +102.3 | +49.6 | +431.0 |
| | SO ₂ (g) | -296.8 | -300.2 | +248.2 |
| | SO ₃ (g) | -395.7 | -371.1 | +256.8 |
| Bromo | Br ₂ (g) | +30.9 | +3.1 | +245.5 |
| | Br ₂ (l) | 0.0 | 0.0 | +152.2 |
| Calcio | CaCO ₃ (s) | -1207.0 | -1129.0 | +92.9 |
| | CaO(s) | -635.1 | -604.0 | -39.8 |
| | Ca(OH) ₂ (s) | -986.1 | -898.5 | +83.4 |
| Carbono | C (diamante) | +1.9 | +2.9 | +2.38 |
| | C (grafito) | 0.0 | 0.0 | +5.74 |
| | CCl ₄ (g) | -102.9 | -60.6 | +309.9 |
| | CO(g) | -110.5 | -137.2 | +197.7 |
| | CO ₂ (g) | -393.5 | -394.4 | +213.7 |
| Cloro | Cl ₂ (g) | 0.0 | 0.0 | +223.1 |
| Fósforo | P(rojo) | -17.6 | -12.1 | +22.8 |
| Hidrógeno | H ₂ (g) | 0.0 | 0.0 | +130.7 |
| | HCl(g) | -92.3 | -95.3 | +186.9 |
| | H ₂ S(g) | -20.6 | -33.6 | +205.8 |
| | HF(g) | -271.1 | -273.2 | +173.8 |
| | HBr(g) | -36.4 | -53.5 | +198.7 |
| | HI(g) | +26.5 | +1.7 | +206.6 |
| | HNO ₃ (l) | -174.1 | -80.7 | +155.6 |
| | H ₂ O(g) | -241.8 | -228.6 | +188.8 |
| | H ₂ O(l) | -285.8 | -237.1 | +69.9 |
| | H ₂ O ₂ (g) | -136.3 | -105.6 | +232.7 |
| | H ₂ O ₂ (l) | -187.8 | -120.4 | +109.6 |
| H ₂ SO ₄ (l) | -814.0 | -690.0 | +156.9 | |
| Litio | Li(g) | +159.4 | +126.7 | +138.8 |
| Mercurio | Hg(l) | 0.0 | 0.0 | +76.0 |
| Nitrógeno | NH ₃ (g) | -46.1 | -16.45 | +192.5 |
| | NO ₂ (g) | +33.2 | +51.3 | +240.1 |
| | N ₂ O ₄ (g) | +9.2 | +97.9 | +304.3 |
| Oxígeno | O ₂ (g) | 0.0 | 0.0 | +205.1 |
| | O ₃ (g) | +142.7 | 163.2 | +238.9 |
| Potasio | K(s) | +89.2 | +60.6 | +160.3 |
| | KCl(s) | -436.7 | -409.1 | +82.6 |
| Sodio | Na(g) | +107.3 | +76.8 | +153.7 |
| | Na ₂ CO ₃ (s) | -1131.0 | -1044.0 | +135.0 |
| | NaCl(s) | -411.2 | -384.1 | +72.13 |
| | NaOH(s) | -425.6 | -379.5 | +64.5 |
| Yodo | I ₂ (s) | 0.0 | 0.0 | +260.7 |

| MAGNITUDES DE ENLACE | | | |
|----------------------|---------------|--|--|
| Enlace | Longitud (pm) | $\Delta H_{\text{enl}}^{\circ}$ (kJ/mol) | $\Delta H_{\text{dis}}^{\circ}$ (kJ/mol) |
| H-H | 74 | -436 | +436 |
| H-C | 107 | -414 | +414 |
| H-N | 100 | -389 | +389 |
| H-O | 96 | -464 | +464 |
| H-S | 134 | -368 | +368 |
| H-F | 92 | -565 | +565 |
| H-Cl | 127 | -431 | +431 |
| H-Br | 141 | -364 | +364 |
| H-I | 160 | -297 | +297 |
| C-C | 154 | -347 | +347 |
| C=C | 133 | -611 | +611 |
| C≡C | 120 | -837 | +837 |
| C-N | 143 | -305 | +305 |
| C=N | 138 | -615 | +615 |
| C≡N | 116 | -891 | +891 |
| C-O | 143 | -360 | +360 |
| C=O | 121 | -736 | +736 |
| C-S | 182 | -259 | +259 |
| C-Cl | 178 | -335 | +335 |
| N-N | 147 | -163 | +163 |
| N=N | 124 | -418 | +418 |
| N≡N | 110 | -946 | +946 |
| N-O | 136 | -222 | +222 |
| N=O | 122 | -590 | +590 |
| O-O | 148 | -142 | +142 |
| O=O | 121 | -498 | +498 |
| F-F | 140 | -159 | +159 |
| Cl-Cl | 199 | -243 | +243 |
| Br-Br | 228 | -193 | +193 |
| I-I | 267 | -149 | +149 |