

## UNIDADES DE VISCOSIDAD, CONVERSIÓN Y EQUIVALENCIAS

|  | SISTEMA INTERNACIONAL  | CEGESIMAL (c.g.s.)  | OTROS   |
|--|--|---|---|
| <b>COEFICIENTE VISCOSIDAD DINÁMICA</b>   | poiseuille<br>[=N.s/m <sup>2</sup><br>=kg/(m.s)]                             | poise (p)<br>[=dina.s/cm <sup>2</sup><br>=0,1 poiseuille]                             | centipoise (cP)<br>[=0,01 p =viscosidad del agua a 20°C]                                      |
| <b>COEFICIENTE VISCOSIDAD CINEMÁTICA</b> | m <sup>2</sup> /s [=poiseuille/ρ]<br>[densidad ρ=m/V<br>kg.m <sup>-3</sup> ] | stoke(St)<br>[=cm <sup>2</sup> /s=poise/ρ]<br>[densidad ρ=m/V<br>g.cm <sup>-3</sup> ] | cSt=0,01St ;<br>segundos(s)=tiempo de flujo con viscosímetro de copa (ver conversiones abajo) |

| <b>FÓRMULAS DE CONVERSIÓN Y RANGOS PARA COPAS DE VISCOSIDAD (t=tiempo de flujo en s ; v=viscosidad en cSt)</b> |   |                             |  |
|--|---|-----------------------------|--|
| <b>ASTM D1200 ø2,53 FORD-2</b>   | $v=1,44(t-18,0)$ [40-100 s / 25-110 cSt]  | <b>DIN 53211 ( ø4)</b>      | $v=4,570t-452/t$ [25-150 s / 90-700 cSt] |
| <b>ASTM D1200 ø3,40 FORD-3</b>   | $v=2,31(t-6,58)$ [20-100 s / 49-220 cSt]  | <b>ASTM D4212 Shell 1</b>   | $v=0,226(t-13)$ [20-80 s / 2-20 cSt]     |
| <b>ASTM D1200 ø4,12 FORD-4</b>   | $v=3,85(t-4,49)$ [20-100 s / 60-370 cSt]  | <b>ASTM D4212 Shell 2</b>   | $v=0,576(t-5)$ [20-80 s / 10-50 cSt]     |
| <b>ASTM D4212 Zahn 1</b>   | $v=1,1(t-29)$ [35-80 s / 5-60 cSt]        | <b>ASTM D4212 Shell 2.5</b> | $v=0,925(t-3)$ [20-80 s / 20-80 cSt]     |
| <b>ASTM D4212 Zahn 2</b>   | $v=3,5(t-14)$ [20-80 s / 20-250 cSt]      | <b>ASTM D4212 Shell 3</b>   | $v=1,51(t-2)$ [20-80 s / 30-120 cSt]     |
| <b>ASTM D4212 Zahn 3</b>   | $v=11,7(t-7,5)$ [20-80 s / 100-800 cSt]   | <b>ASTM D4212 Shell 3.5</b> | $v=2,17(t-1,5)$ [20-80 s / 40-170 cSt]   |
| <b>ASTM D4212 Zahn 4</b>   | $v=14,8(t-5)$ [20-80 s / 200-1200 cSt]    | <b>ASTM D4212 Shell 4</b>   | $v=3,45(t-1)$ [20-80 s / 70-270 cSt]     |
| <b>ASTM D4212 Zahn 5</b>   | $v=23t$ [20-80 s / 400-1800 cSt]          | <b>ASTM D4212 Shell 5</b>   | $v=6,5(t-1)$ [20-80 s / 125-520 cSt]     |
| <b>ISO 2431 ø3</b>   | $v=0,443t-200/t$ [30-100 s / 5-42 cSt]    | <b>ASTM D4212 Shell 6</b>   | $v=16,2(t-0,5)$ [20-80 s / 320-1300 cSt] |
| <b>ISO 2431 ø4</b>   | $v=1,370t-200/t$ [30-100 s / 35-135 cSt]  |                             |  |
| <b>ISO 2431 ø5</b>   | $v=3,280t-220/t$ [30-100 s / 100-350 cSt] |                             |  |
| <b>ISO 2431 ø6</b>   | $v=6,900t-570/t$ [30-100 s / 190-680 cSt] |                             |  |