

# Diffusion coefficient of carbon disulfide in propan-2-one

## 3 Diffusion in Liquid Mixtures

### 3.1. Data

#### 3.1.1. Diffusion in Binary Mixtures

C S <sub>2</sub>	(1)	carbon disulfide	75-15-0
C <sub>3</sub> H <sub>6</sub> O	(2)	propan-2-one	67-64-1
Mutual Diffusion Coefficient: $D_{12}(x_i)$ ; $T = 293.15 \pm 0.5$ K; Method: DLS			Ref.: [1975C10]
$x_2$	$p$ [kPa]	$D \cdot 10^9$ [m <sup>2</sup> /s]	
0.13	101.32	$2.27 \pm 5\%$	
0.36	101.32	$1.97 \pm 5\%$	
0.57	101.32	$2.64 \pm 5\%$	
0.75	101.32	$3.45 \pm 5\%$	
0.92	101.32	$3.79 \pm 5\%$	
Mutual Diffusion Coefficient: $D_{12}(\varphi_2)$ ; $T = 293.15 \pm 0.5$ K; Method: DLS			Ref.: [1975C10]
$\varphi_2$	$p$ [kPa]	$D \cdot 10^9$ [m <sup>2</sup> /s]	
0.10	101.32	$2.56 \pm 0.10$	
0.10 *	101.32	$2.27 \pm 0.09$	
Comment: *: concentration in weight percent; $\varphi_2$ = volume fraction			

### Symbols and Abbreviations

Short Form	Full Form
$D$	diffusion coefficient
$p$	pressure
$T$	temperature
DLS	dynamic light scattering
$x_i$	mole fraction
$\varphi_i$	volume fraction

### References

[1975C10] Czwoziak, K. J., Andersen, H. C., Pecora, R.: Chem. Phys. **11** (1975) 451–473.