

# Diffusion coefficient of hexafluoro-benzene in 1,3,5-triisopropyl-benzene

## 3 Diffusion in Liquid Mixtures

### 3.1. Data

#### 3.1.1. Diffusion in Binary Mixtures

C <sub>6</sub> F <sub>6</sub>	(1)	hexafluoro-benzene	392-56-3			
C <sub>15</sub> H <sub>24</sub>	(2)	1,3,5-triisopropyl-benzene	717-74-8			
Intradiffusion Coefficient: $D_{2T}(x_i)$ ; $T = 298.2$ K; Method: NMR PG			Ref.: [1986F3]			
$x_2$	$p$ [kPa]	$D \cdot 10^9$ [m <sup>2</sup> /s]				
0.05	101.32	1.15 ± 2%				
0.20	101.32	0.91 ± 2%				
0.35	101.32	0.71 ± 2%				
0.50	101.32	0.60 ± 2%				
0.65	101.32	0.53 ± 2%				
0.80	101.32	0.46 ± 2%				
0.95	101.32	0.40 ± 2%				
1.0	101.32	0.37 ± 2%				
Intradiffusion Coefficient: $D_{2T}(T)$ ; Method: NMR PG			Ref.: [1986F3]			
Equation: $\ln D = A + B \ln T + C T + E/T$			Range: 285 < $T/K$ < 345			
Comment: Std-Dev = $(1 - r^2)$ : least mean square deviation						
Parameter:	$x_2$	$A$	$B$	$C$	$E$	Std-Dev
	0.05	-12.961	0.093	-0.0045	-2031.	$2.58 \cdot 10^{-3}$
	0.20	-16.912	0.183	0.0011	-1572.	$5.21 \cdot 10^{-3}$
	0.35	-28.452	1.056	0.0104	-516.	$6.78 \cdot 10^{-3}$
	0.50	-30.538	1.422	0.0093	-479.	$10.24 \cdot 10^{-3}$
	0.65	-21.705	1.377	-0.0039	-1890.	$8.89 \cdot 10^{-3}$
	0.80	-32.868	2.440	0.0019	-915.	$11.69 \cdot 10^{-3}$
	0.95	-23.291	2.876	-0.0171	-2895.	$9.10 \cdot 10^{-3}$
	1.0	-33.405	1.317	0.0137	-261.	$10.28 \cdot 10^{-3}$

### Symbols and Abbreviations

Short Form	Full Form
$D$	diffusion coefficient
$p$	pressure
$T$	temperature
NMR PG	NMR spin echo pulse gradient
$x_i$	mole fraction

### References

[1986F3] Fischer, J., Weiss, A.: Ber. Bunsen-Ges. Phys. Chem. **90** (1986) 1141–1153.