

INFLUENCE OF PRESSURE ON FREEZING POINTS

This table illustrates the variation of the freezing point of representative types of liquids with pressure. Substances are listed in alphabetical order. Note that 1 MPa = 0.01 kbar = 9.87 atm.

References

1. Isaacs, N. S., *Liquid Phase High Pressure Chemistry*, John Wiley, New York, 1981.
2. Merrill, L., *J. Phys. Chem. Ref. Data*, 6, 1205, 1977; 11, 1005, 1982.

Substance	Molecular formula	Freezing point in °C at:		
		0.1 MPa	100 MPa	1000 MPa
Acetic acid	C ₂ H ₄ O ₂	16.6	37	
Acetophenone	C ₈ H ₈ O	20.0	41.2	
Aniline	C ₆ H ₇ N	-6.0	13.5	140
Benzene	C ₆ H ₆	5.5	33.4	
Benzonitrile	C ₇ H ₅ N	-12.8	7.6	
Benzyl alcohol	C ₇ H ₈ O	-15.2	0.2	
Bromobenzene	C ₆ H ₅ Br	-30.6	-12	108
Bromoethane	C ₂ H ₅ Br	-118.6	-108	
1-Bromonaphthalene	C ₁₀ H ₇ Br	-1.8	6.1	
1-Bromopropane	C ₃ H ₇ Br	-110	-98	
<i>p</i> -Bromotoluene	C ₇ H ₇ Br	28.0	56.7	
Butanoic acid	C ₄ H ₈ O ₂	-5.7	13.8	
1-Butanol	C ₄ H ₁₀ O	-89.8	-77.2	
Carbon disulfide	CS ₂	-111.5	-98	
Chlorobenzene	C ₆ H ₅ Cl	-45.2	-28	84
<i>p</i> -Chlorotoluene	C ₇ H ₇ Cl	6.9	33.1	
<i>o</i> -Cresol	C ₇ H ₈ O	29.8	47.7	
<i>m</i> -Cresol	C ₇ H ₈ O	11.8	25.6	
<i>p</i> -Cresol	C ₇ H ₈ O	35.8	56.2	
Cyclohexane	C ₆ H ₁₂	6.6	32.5	
Cyclohexanol	C ₆ H ₁₂ O	25.5	62.3	
1,2-Dibromoethane	C ₂ H ₄ Br ₂	9.9	34.0	
<i>p</i> -Dichlorobenzene	C ₆ H ₄ Cl ₂	52.7	79.1	
Dichloromethane	CH ₂ Cl ₂	-95.1	-83	
<i>N,N</i> -Dimethylaniline	C ₈ H ₁₁ N	2.5	26.3	
1,4-Dioxane	C ₄ H ₈ O ₂	11	23	
Ethanol	C ₂ H ₆ O	-114.1	-108	
Formamide	CH ₃ NO	-15.5	10.8	
Formic acid	CH ₂ O ₂	8.3	20.6	
Furan	C ₄ H ₄ O	-85.6	-73	
Hexamethyldisiloxane	C ₆ H ₁₈ OSi ₂	-66	-37	
Menthol	C ₁₀ H ₂₀ O	42	60	
Methyl benzoate	C ₈ H ₈ O ₂	-15	31.8	
2-Methyl-2-butanol	C ₅ H ₁₂ O	-8.8	13.4	
2-Methyl-2-propanol	C ₄ H ₁₀ O	25.4	58.1	
Naphthalene	C ₁₀ H ₈	78.2	115.7	
Nitrobenzene	C ₆ H ₅ NO ₂	5.7	13.5	
<i>m</i> -Nitrotoluene	C ₇ H ₇ NO ₂	15.5	40.6	
Pentachloroethane	C ₂ HCl ₅	-29.0	-6.3	
Potassium	K	63.7	78	170
Potassium chloride	ClK	771		945
Propanoic acid	C ₃ H ₆ O ₂	-20.7	-1.2	
Silver chloride	AgCl	455		545
Sodium	Na	97.8	106	167
Sodium chloride	ClNa	800.7		997
Sodium fluoride	FNa	996		1115
Tetrachloromethane	CCl ₄	-23.0	14.2	
Tribromomethane	CHBr ₃	8.1	31.5	
Trichloromethane	CHCl ₃	-63.6	-45.2	
Water	H ₂ O	0.0	-9.0	
<i>o</i> -Xylene	C ₈ H ₁₀	-25.2	-3.5	
<i>m</i> -Xylene	C ₈ H ₁₀	-47.8	-25.2	
<i>p</i> -Xylene	C ₈ H ₁₀	13.2	46.0	