

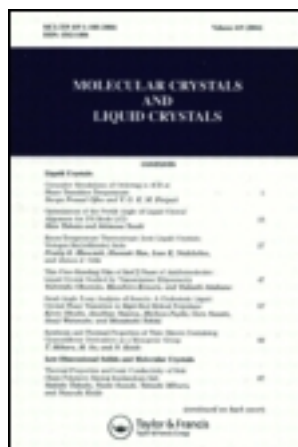
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Globular Mesogens

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GLOBULAR MESOGENS

● Regular tetrahedron

Formula	K	KP ₁	KP ₂	I	Ref.
CH ₄	• -263	• -253 0.018	• -182 0.24	•	116, 117, 118
SiH ₄	• -210 0.166	-	• 185 0.16	•	117
GeH ₄	• -200 0.26	-	• -186 0.2	•	117
CF ₄	• -197 0.354	-	• -184 0.167	•	117
CCl ₄	• -48 1.1 1.08	-	• -23 0.644 0.577	•	116, 117, 119 120
CBr ₄	• 47 1.593	-	• 90 0.945	•	117, 121
C(CH ₃) ₄	• -133 0.615	-	• -17 0.778	•	117, 122
C(CH ₂ F) ₄	• -23 3.157	-	• 94 1.230	•	123
C(CH ₂ OH) ₄	• 184 10.42	-	• 266 1.70	•	123

• Irregular tetrahedron

Formula	K_1	K_2	KP_1	KP_2	I	Ref.
NF_3	• - 216 0.361	—	—	• - 207 0.095	•	124
CH_3OH	• - 115 0.154	—	—	• - 98 0.757	•	116, 125
CH_3-C-Cl_3	• - 68 0.05	• - 50 1.78	—	• - 33 0.45 1.08	•	126, 126 bis 116, 117
$(CH_3)_2-C-Cl_2$	• - 86 0.748	—	—	• - 35 0.773	•	123
$(CH_3)_2-C-ClNO_2$	• - 59 2.286	—	• - 57	• - 22 0.319	•	126 bis
$(CH_3)_3-C-Cl$	• - 90 0.421	• - 53.5 1.405	—	• - 25 0.471	•	127
$(CH_3)_3-C-Br$	• - 64.5 1.356	—	• - 41.8 0.255	• - 17 0.461	•	127
$(CH_3)_3-C-NO_2$	• - 58 1.009	—	• - 13 1.114	• 26 0.621	•	128
$(CH_3)_3-C-SH$	• - 122 0.972	KP_1 - 116 0.154	KP_2 - 74 0.232	KP_3 1 0.593	•	117, 128 bis
$(CH_3)_3-C-COOH$	• 7 1.7	—	—	• 35 0.48	•	129
$(CH_3)_3-C-C_2H_5$	• - 146 1.29	—	• - 132 0.067	• - 99 0.139	•	130
$(CH_3)_3-C-CH=CH_2$	• - 148 1.039	—	—	• - 115 0.261	•	131

• Regular octahedron

Formula	K	KP	I	Ref.
SF ₆	• - 179 0.384	• - 51 1.20	•	117
MoF ₆	• 10 2.033	• 17 1.060	•	132
WF ₆	• - 8 2.067	• 2 0.98	•	132
ReF ₆	• - 3 2.020	• 18 1.038	•	132
OsF ₆	• 1 2.00	• 33 1.112	•	132
IrF ₆	• - 0.2 1.932	• 44 1.195	•	132
PtF ₆	• 3 2.129	• 62 1.071	•	117, 132

• Irregular octahedron

Formula	K_1	K_2	KP	I	Ref.
ClF_5	• -156 0.021	• -112 0.836	• -92 0.383	•	133
F_3CCF_3	• -169 0.893	—	• -100 0.642	•	134
F_3CCCF_2	• -193 0.627	—	• -99 0.448	•	135
Cl_3CCCl_3	• 45	• 71 1.964	• 185 3.519	•	117
$(\text{CH}_3)_3\text{CC}(\text{CH}_3)_3$	• -121 0.478	—	• 101 1.80	•	136
$(\text{CH}_3)_3\text{Si-Si}(\text{CH}_3)_3$	• -51 2.33	—	• 14 0.722	•	117
$(\text{CH}_3)_3\text{C-CH}(\text{CH}_3)_2$	• -152 0.585	—	• -25 0.540	•	137
$(\text{CH}_3)_2\text{-CH-CH}(\text{CH}_3)_2$	• -137 1.552	—	• -128 0.364	•	117
$(\text{CH}_3)_2\text{-C=C}(\text{CH}_3)_2$	• -76 0.844	—	• -73 1.542	•	138

• Monocyclic molecules

Formula	K	KP ₁	KP ₂	KP ₃	I	Ref.
	• -127 1.363	—	—	• -91 0.26	•	117, 139
	• -151 1.167	• -135 0.082	—	• -93 0.145	•	117
	• -87 1.61	—	—	• 6 0.64	•	117, 140
	• -138 1.187	• -75 0.069	• -61 0.107	• -8 0.450	•	141
	• -107 1.507	• -89 0.114	—	• 15 0.576	•	141
	• -186 0.114	—	—	• -135 0.804	•	142
	• -134 1.015	—	—	• -103 0.787	•	142
	• -119 0.561	—	—	• -75 0.277	•	141

Formula	K_1	K_2	KP	I	Ref.
	• -126 1.550	—	• -69 0.258	•	143
	• -132 1.593	—	• -54 0.396	•	143
	• -120 1.43	—	• -33 0.483	•	144
	• -101 1.973	—	• -50 0.393	•	144
	• -29	• -10 1.96	• 24 0.41	•	117, 145
	• -53 2.092	—	• -29 0.325	•	146
	• -72 0.262	• -33 1.858	• 19 0.585	•	147

• Bicyclic molecules

Formula	K_1	K_2	KP	I	Ref.
	• - 109 1.092	—	• 174 2.002	•	148
	• - 162 0.086	• - 97 1.348	• 116 0.945	•	148
	• - 75 1.255	—	• 160 1.385	•	148
	• 78 2.523	—	• 160 1.775	•	148
	• 25 3.465	—	• 194 1.657	•	148
	• - 65 1.709	—	• 175 1.617	•	148

• Norbornane derivatives

Formula	K_1	KP_1	KP_2	I	Ref.
	• -142 0.986	• 33 0.018	• 87 1.09	•	148
	• -144 1.158	—	• 47 0.777	•	148
	• -71 2.094	—	• -19 0.401	•	148
	• -35 1.854	—	• 27 0.702	•	148
	• -96 0.499	—	• 59 0.707	•	148
	• -121 1.122	—	• -86 0.261	•	148
	• -113	—	• -109	•	148

Camphor derivatives



R_1	R_2	K	KP_1	KP_2	I	Ref.
$=O$ camphor	H	• — 31 2.7	—	• 178 1.4	•	149
$=O$ camphoquinone	$=O$	• 64 3.5	• 192	• 202 2.1	•	149
$=NOH$ camphoroxime	H	• 112 3.2	—	• 118 0.53	•	149
$-H$ and $-OH$ borneol	H	• 70 0.78	—	• 208 1.6	•	149
$-OH$ and $-H$ isoborneol	H	• 35	—	• 212 1.8	•	149
$-H$ and $-Cl$ bornylchloride	H	• — 42 0.17	—	• 126.5 1.0	•	149

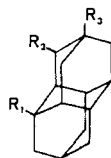


R ₁	R ₂	R ₃	K ₁	K ₂	KP ₁	KP ₂	l	Ref.
H	H	H	• -65 0.7	—	—	• 271 1.9	•	150
F	H	H	• -52 0.35	—	—	• 252 sublimation	•	150
Cl	H	H	• -29 1.44	—	—	• 169 1.16	•	150
Br	H	H	• 6 0.21	• 37 1.66	—	• 123 0.92	•	150
CH ₃	H	H	• -104 0.46	—	• -62 0.35	• 118	•	150
CH ₃	CH ₃	H	• -52 1.76	—	—	• -28 0.22	•	150
CH ₃	CH ₃	CH ₃	• -45 1.5	—	—	• -20 0.41	•	150



X	Y	K	KP	I	Ref.
O	C	• < - 50	• 294 1.940	•	151
S	C	• 188—214 0.465	• 324 1.937	•	151
O	O	• 3 1.396	• 167 0.903	•	151
O	S	• - 49 0.983	• 284 1.941	•	151

• Diadamantane derivatives



Molecules with more than three cycles

R ₁	R ₂	R ₃	K	KP ₁	KP ₂	I	Ref.
H	H	H	• 142 1.07	• 174 1.83	• 251 2.15	•	152
OH	H	H	• 122 4.3	• 135 1.17	• 300 2.3	•	152
H	OH	H	• 152	• 181	• ?	•	153
H	H	OH	• 175 2.34	—	• 211 3.92	•	152

• Heptacyclotetradecane



K	KP	I	Ref.
• 78 2.97	• 168	•	152

Others molecules

Formula	K_1	K_2	KP_1	KP_2	Δ	Ref.
N_2	• -238 0.055	—	—	• -210 0.172	•	117
HCl	• -175 0.284 0.293	• -153	—	• -114 0.47 0.504	•	117 154 155
HBr	• -183 0.113	• -160 0.165	—	• -87 0.62	•	155
HI	• -203 0.07	• -147 0.125	—	• -51 0.70	•	155
H_2S	• -170 0.362	—	• -147 0.108	• -86 0.568	•	117 155 bis
CO	• -212 0.151	—	—	• -205 0.199	•	156
NaO_2	• -230	• -73 0.357	• -42 0.392	• decomposition	•	157
KCN	• -190 0.095	—	• -107 0.339	• 635	•	158
CH_3-NH_3Cl	• -53 0.425	—	• -9 0.673	• 227	•	159
$CN-CH_2-CH_2-CN$	• -50 1.480	—	—	• 54 0.877	•	160

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