

Table 1. Calculated Values of translational and Internal Contributions of Thermal Conductivity Together with Experimental Data in Low Density for The First Series of Interaction Potential Parameters in the R125 Refrigerant

T (K)	$\Omega_1^{(2,2)*}$	$\lambda_{tr,cal-1}$ $\left(\frac{mW}{m.K}\right)$	$\lambda_{int,cal-1}$ $\left(\frac{mW}{m.K}\right)$	λ_{tot-1} $\left(\frac{mW}{m.K}\right)$	λ_{exp} [17-24] $\left(\frac{mW}{m.K}\right)$
260	1.518	2.995	9.954	12.949	11.194
280	1.469	3.211	9.026	12.237	12.647
300	1.426	3.424	9.652	13.076	14.135
320	1.388	3.634	11.168	14.802	15.656
340	1.353	3.841	13.053	16.895	17.212
360	1.322	4.045	14.932	18.977	18.801
380	1.294	4.246	16.568	20.814	20.424
400	1.269	4.444	17.872	22.316	22.082
420	1.246	4.638	18.894	23.532	23.773
440	1.224	4.830	19.829	24.659	25.498
460	1.205	5.019	21.014	26.034	27.257
480	1.187	5.205	22.930	28.136	29.05
500	1.170	5.389	26.200	31.589	30.877

Table 2. Calculated Values of translational and Internal Contributions of Thermal Conductivity Together with Experimental Data in Low Density for The First Series of Interaction Potential Parameters in the R134a Refrigerant

T (K)	$\Omega_1^{(2,2)*}$	$\lambda_{tr,cal-1}$ $\left(\frac{mW}{m.K}\right)$	$\lambda_{int,cal-1}$ $\left(\frac{mW}{m.K}\right)$	λ_{tot-1} $\left(\frac{mW}{m.K}\right)$	λ_{exp} [18,19,25] $\left(\frac{mW}{m.K}\right)$
300	1.496	3.480	9.492	13.208	13.508
320	1.454	3.698	10.999	14.946	15.109
340	1.417	3.914	12.361	16.537	16.711

360	1.383	4.127	13.680	18.082	18.313
380	1.352	4.337	15.017	19.642	19.915
400	1.325	4.545	16.392	21.236	21.517
420	1.299	4.750	17.784	22.845	23.119
440	1.276	4.952	19.133	24.408	24.720

Table 3. Calculated Values of translational and Internal Contributions of Thermal Conductivity Together with Experimental Data in Low Density for The second Series of Interaction Potential Parameters in the R12 Refrigerant

T	λ_{tr}	λ_{int}	$\lambda_{tot,cal}$	λ_{exp}
(K)	$\left(\frac{mW}{m \cdot K}\right)$	$\left(\frac{mW}{m \cdot K}\right)$	$\left(\frac{mW}{m \cdot K}\right)$	[26 – 30] $\left(\frac{mW}{m \cdot K}\right)$
300	3.163	6.844	10.008	10.009
320	3.362	7.640	11.002	11.003
340	3.559	8.446	12.005	12.007
360	3.753	9.259	13.013	13.014
400	4.135	10.890	15.025	15.027
420	4.322	11.702	16.025	16.027
440	4.507	12.509	17.017	17.019
460	4.690	13.309	17.999	18.001
480	4.870	14.101	18.971	18.973
500	5.048	14.884	19.932	19.934

Table 4. Calculated Values of translational and Internal Contributions of Thermal Conductivity Together with Experimental Data in Low Density for The second Series of Interaction Potential Parameters in the R14 Refrigerant

T	λ_{tr}	λ_{int}	$\lambda_{tot,cal}$	λ_{exp}
(K)	$\left(\frac{mW}{m \cdot K}\right)$	$\left(\frac{mW}{m \cdot K}\right)$	$\left(\frac{mW}{m \cdot K}\right)$	[31-43] $\left(\frac{mW}{m \cdot K}\right)$
300	6.153	11.232	16.378	16.38
320	6.503	12.512	17.976	17.983
340	6.845	13.818	19.595	19.6
360	7.180	15.134	21.219	21.228
380	7.508	16.447	22.837	22.849
400	7.830	17.751	24.439	24.455
420	8.145	19.038	26.022	26.04
440	8.455	20.308	27.582	27.604
460	8.759	21.562	29.123	29.149
480	9.057	22.807	30.650	30.681
500	9.351	24.051	32.173	32.209

Table 5. Calculated Values of translational and Internal Contributions of Thermal Conductivity Together with Experimental Data in Low Density for The second Series of Interaction Potential Parameters in the R141b Refrigerant

T	λ_{tr}	λ_{int}	$\lambda_{tot,cal}$	λ_{exp}
(K)	$\left(\frac{mW}{m \cdot K}\right)$	$\left(\frac{mW}{m \cdot K}\right)$	$\left(\frac{mW}{m \cdot K}\right)$	[15,44-56] $\left(\frac{mW}{m \cdot K}\right)$
300	2.591	7.587	10.027	10.026
320	2.757	8.878	11.475	11.475
340	2.923	10.286	13.040	13.040

360	3.087	11.809	14.720	14.719
380	3.250	13.444	16.510	16.509
400	3.411	15.187	18.408	18.407
420	3.571	17.037	20.411	20.410
440	3.730	18.988	22.514	22.513
460	3.886	21.037	24.715	24.713
480	4.042	23.182	27.009	27.007
500	4.195	25.418	29.393	29.392

Table 6. Viscosity and Thermal Conductivity Calculated Values Using Heat Capacity Data in Low Densities Based on The second Series of Potential Parameters in the R125 Refrigerant

T (K)	η ($\mu\text{Pa}\cdot\text{s}$)	$c_{v,\text{cal}}$ ($\frac{\text{J}}{\text{mol}\cdot\text{K}}$)	λ_{cal} ($\frac{\text{mW}}{\text{m}\cdot\text{K}}$)
260	11.683	96.232	11.189
280	12.533	88.492	11.194
300	13.371	81.764	11.193
320	14.198	75.895	11.191
340	15.013	70.750	11.190
360	15.816	66.211	11.191
380	16.608	62.175	11.192
400	17.389	58.557	11.194
420	18.158	55.288	11.195
440	18.916	52.317	11.194
460	19.663	49.609	11.192
480	20.400	47.145	11.193
500	21.126	44.925	11.201

Table 7. Viscosity and Thermal Conductivity Calculated Values Using Heat Capacity Data in Low Densities Based on The second Series of Potential Parameters in the R134a Refrigerant

T	η	$c_{v,cal}$	λ_{cal}
(K)	($\mu\text{Pa}\cdot\text{s}$)	$\left(\frac{\text{J}}{\text{mol}\cdot\text{K}}\right)$	$\left(\frac{\text{mW}}{\text{m}\cdot\text{K}}\right)$
300	11.395	102.321	13.516
320	12.110	108.671	15.118
340	12.816	110.159	16.721
360	13.513	119.641	18.324
380	14.202	124.445	19.926
400	14.882	128.894	21.528
420	15.552	133.042	23.131
440	16.214	136.932	24.733

Table 8. Viscosity and Thermal Conductivity Calculated Values Using Heat Capacity Data in Low Densities Based on The second Series of Potential Parameters in the R12 Refrigerant

T	η	$c_{v,cal}$	λ_{cal}
(k)	($\mu\text{Pa}\cdot\text{s}$)	$\left(\frac{\text{J}}{\text{mol}\cdot\text{K}}\right)$	$\left(\frac{\text{mW}}{\text{m}\cdot\text{K}}\right)$
300	12.266	79.936	10.008
320	13.038	83.314	11.002
340	13.801	86.459	12.005
360	14.556	89.379	13.013

400	16.036	94.580	15.026
420	16.762	96.883	16.025
440	17.478	99.003	17.017
460	18.186	100.954	18.000
480	18.885	102.749	18.971
500	19.574	104.403	19.932

Table 9. Viscosity and Thermal Conductivity Calculated Values Using Heat Capacity Data in Low Densities Based on The First Series of Potential Parameters in the R14 Refrigerant

T	η	$C_{v,cal}$	λ_{cal}
(k)	($\mu\text{Pa}\cdot\text{s}$)	$\left(\frac{\text{J}}{\text{mol}\cdot\text{K}}\right)$	$\left(\frac{\text{mW}}{\text{m}\cdot\text{K}}\right)$
300	17.369	64.286	16.380
320	18.356	67.501	17.981
340	19.322	70.571	19.601
360	20.267	73.466	21.227
380	21.193	76.167	22.848
400	22.101	78.666	24.454
420	22.991	80.966	26.040
440	23.865	83.085	27.604
460	24.723	85.049	29.148
480	25.566	86.898	30.679
500	26.3949	88.682	32.208

Table 10. Viscosity and Thermal Conductivity Calculated Values Using Heat Capacity Data in Low Densities Based on The second Series of Potential Parameters in the R141b Refrigerant

T	η	$C_{v,cal}$	λ_{cal}
(k)	($\mu\text{Pa}\cdot\text{s}$)	$\left(\frac{\text{J}}{\text{mol}\cdot\text{K}}\right)$	$\left(\frac{\text{mW}}{\text{m}\cdot\text{K}}\right)$
300	9.150	109.396	10.024
320	9.742	118.998	11.472
340	10.332	128.850	13.036
360	10.918	138.902	14.715
380	11.501	149.108	16.505
400	12.080	159.430	18.402
420	12.656	169.833	20.404
440	13.226	180.287	22.507
460	13.793	190.768	24.707
480	14.354	201.257	27.000
500	14.911	211.740	29.384