

Estimate the specific volume of isobutane
 case 1- saturated liquid at 310.93 K
 case 2- compressed liquid at 310.93 K and 137.9 bar

Solution:

Fluid name	isobutane
Fluid index	274
Tc in Kelvin	408.1 K
Pc	36.5 bar
T	310.93 K
P	137.9 bar
Pr	3.78
Acentric Fac.	0.176
Tr	0.76
R	83.14 cm ³ .bar/(mol.K)

Table look up from file: "Chemical component properties.xls" Index 274
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P_sat(reduced)	0.139353
P_sat	5.086 bar
P_sat experimental	4.958 bar
Error	2.6%

Z(T_sat)	0.021138
V(T_sat)	107.4 cm ³ /mol
V(T_sat) experimental	108.2 cm ³ /mol
Error	-0.7%

Z(P,T)	0.556481
V(P,T)	104.3 cm ³ /mol
V(P,T) experimental	102.7 cm ³ /mol
Error	1.6%

Temperature range for Lee-Kesler method		Pressure range for Lee-Kesler method	
Tmin	122.43 K	Pmin	0.365 bar
Tmax	1632.4 K	Pmax	365 bar

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