

van der Waal's Constants for Real Gases

The van der Waal's equation of state for a real gas is: $(P + n^2a / V^2)(V - nb) = nRT$

Molecular Formula	Name	<i>a</i> atm L²/mol²	<i>b</i> L/mol
NH ₃	Ammonia	4.166	0.03713
Ar	Argon	1.336	0.03201
Cl ₂	Chlorine	6.254	0.05422
F ₂	Fluorine	1.154	0.02896
He	Helium	0.0341	0.0238
HBr	Hydrogen bromide	4.437	0.04415
HCl	Hydrogen chloride	3.348	0.04061
HCN	Hydrogen cyanide	11.13	0.08806
HF	Hydrogen fluoride	9.431	0.0739
HI	Hydrogen iodide	6.221	0.05303
H ₂	Hydrogen	0.2419	0.02651
H ₂ O	Water	5.459	0.03049
H ₂ S	Hydrogen sulfide	4.480	0.04339
NO	Nitric oxide	1.44	0.0289
NO ₂	Nitrogen dioxide	5.28	0.0443
N ₂	Nitrogen	1.351	0.0387
N ₂ O	Nitrous oxide	3.798	0.04435
N ₂ H ₄	Hydrazine	8.34	0.0462
Ne	Neon	0.205	0.01672
O ₂	Oxygen	1.363	0.03186
O ₃	Ozone	3.520	0.0487
PH ₃	Phosphine	4.630	0.05157
Rn	Radon	6.508	0.06239
SO ₂	Sulfur dioxide	6.769	0.05679
CO	Carbon monoxide	1.696	0.03948
CO ₂	Carbon dioxide	3.607	0.04286
CH ₄	Methane	2.268	0.04301