

# Transport Properties of Chemicals and Hydrocarbons

Viscosity, Thermal Conductivity, and Diffusivity of  
C1 to C100 Organics and Ac to Zr Inorganics

Carl L. Yaws

 William  
Andrew

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C1 to C100 Organics and Ac to Zr Inorganics

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Norwich, NY, USA

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Carl L. Yaws, Lamar University, Beaumont, Texas

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## PREFACE

This book is the product of a life's work in analysis and presentation of property data helpful in the application of chemical engineering and scientific principles. It is not meant to be a theoretical treatise, but an aid to the practicing engineer and scientist in the field. The data contained in this volume provides important information that is helpful in design, research, development, and manufacturing operations. It is intended for quick use in both day-to-day operations and long range projects.

I hope that the readers find this information useful and treat this book as a "hands on" manual, something to get dirty and use in the field, in the lab, or in the office. It is not meant to sit on a shelf and gather dust, but to be a helpful tool for the engineer and scientist.

I would like to thank, again, everyone who made this book possible, including all of the contributors, all of the people at the publisher, William Andrew Inc., and my family and friends.

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Carl L. Yaws  
December, 2008

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## Chapter 1

### VISCOSITY OF GAS – ORGANIC COMPOUNDS

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#### Tabulation Results

The results are given in Table 1. For the tabulation, gas viscosity as a function of temperature is given by the equation shown below:

$$\eta_{\text{gas}} = A + B T + C T^2 + D T^3 \quad (1)$$

where  $\eta_{\text{gas}}$  = viscosity of gas, micropoise  
A, B, C, and D = regression coefficients for chemical compound  
T = temperature, K

The tabulation is arranged by carbon number (C, C2, C3, ..... ) to provide ease of use in quickly locating the data by using the chemical formula. The compound name and CAS No (Chemical Abstracts Registry Number) are next provided. Values for regression coefficients are given in the adjacent columns. The temperature range for use is given in the next columns (TMIN and TMAX). The equation should not be used for temperatures outside this range. The next column provides the code for the tabulation. The last three columns provide values for gas viscosity at representative temperatures. The tabulation is applicable to gas at low pressure.

In preparing the tabulation, a literature search was conducted to identify data source publications (1-39). Both experimental values for the property under consideration and parameter values for estimation of the property are included in the source publications. The publications were screened and copies of appropriate data were made. These data were then keyed into the computer to provide a database of values for compounds for which experimental data are available. The database also served as a basis to check the accuracy of the estimation methods. Upon completion of data collection, estimation of values for the remaining compounds was performed.

The compilations of Beaton and Hewitt (1); CRC (2-3); Daubert and Danner (4); and Yaws (19-38) were used extensively for the tabulation. In the absence of experimental data, estimates were primarily based on Chung et al method (11) and Reichenberg equation (11). Experimental data and estimates were then regressed to provide the same equation for all compounds.

Very limited experimental data are available for highly polar and high molecular weight compounds. Thus, the values for these compounds should be considered rough approximations.

A comparison of calculated and data values is shown in Figure 1 for a representative compound. The graph shows favorable agreement of equation and data.

#### Example

In an engineering analysis, gas viscosity is needed for carbon monoxide (CO) at 400 K. Determine the gas viscosity of carbon monoxide at this temperature.

Substitution of the coefficients from the tabulation and temperature into the above equation yields:

$$\eta_{\text{gas}} = 18.0493 + 6.3753\text{E-}01 \cdot 400 - 3.5748\text{E-}04 \cdot 400^2 + 1.0287\text{E-}07 \cdot 400^3$$

$$\eta_{\text{gas}} = 221.83 \text{ micropoise}$$

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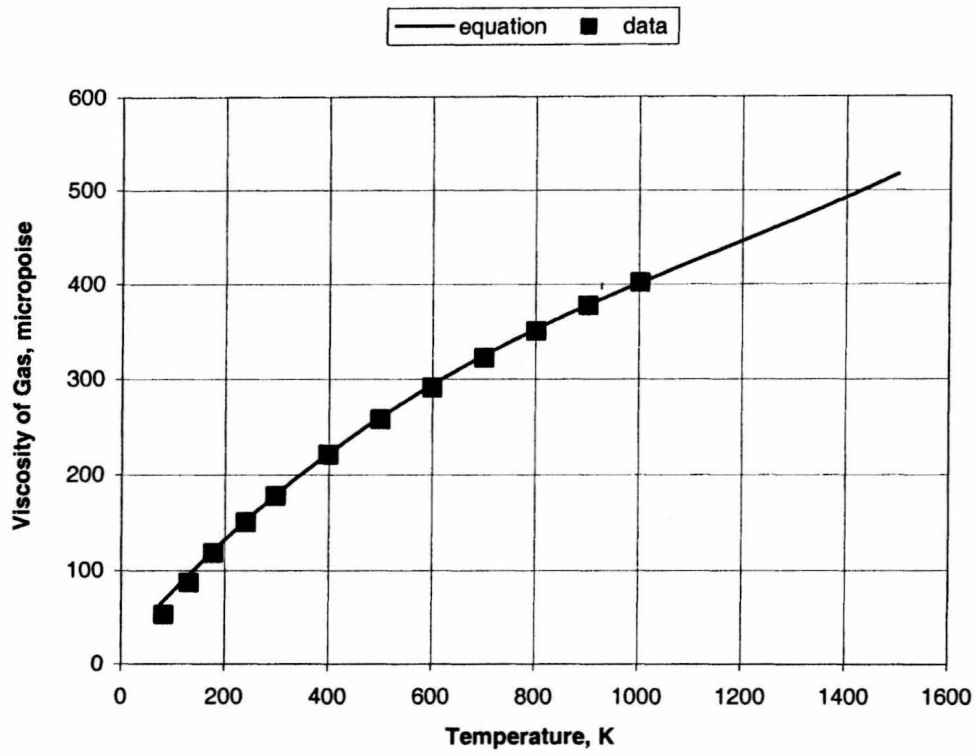


Figure 1 Viscosity of Gas for Carbon Monoxide



Table 1 Viscosity of Gas - Organic Compounds

NO	ID	FORMULA	NAME	CAS No	$\eta_{gas} = A + BT + CT^2 + DT^3$				$(\eta_{gas} - \text{micropoise, } T - K)$					
					A	B	C	D	TMIN	TMAX	code	$\eta_{gas}@TMIN$	$\eta_{gas}@25\text{ C}$	$\eta_{gas}@TMAX$
1	13	CB <sub>2</sub> ClF <sub>2</sub>	bromochlorodifluoromethane	353-59-3	-19.2693	5.4955E-01	-1.8368E-04	3.7319E-08	250	1500	2	107.22	129.24	517.73
2	16	CB <sub>2</sub> Cl <sub>3</sub>	bromotrichloromethane	75-62-7	-8.2909	3.9887E-01	-3.9434E-05	-8.1282E-09	250	1500	2	88.83	106.91	473.85
3	17	CB <sub>2</sub> F <sub>3</sub>	bromotrifluoromethane	75-63-8	-9.5253	6.5020E-01	-3.4459E-04	1.0987E-07	230	1500	1,2	123.13	156.61	561.26
4	23	CB <sub>2</sub> F <sub>2</sub>	dibromodifluoromethane	75-61-6	-19.0309	5.6285E-01	-1.5579E-04	2.5956E-08	250	1500	2	112.35	135.62	562.32
5	29	CB <sub>4</sub>	carbon tetrabromide	558-13-4	-0.2493	3.4411E-01	2.9013E-05	-2.9474E-08	250	1500	2	87.13	104.15	481.73
6	34	CClF <sub>3</sub>	chlorotrifluoromethane	75-72-9	13.8075	4.7487E-01	-1.3368E-04	2.2485E-08	230	1500	1,2	116.23	144.10	501.22
7	39	CClN	cyanogen chloride	506-77-4	-17.4988	5.1088E-01	-1.5570E-04	2.9512E-08	250	1500	2	98.70	119.08	484.59
8	42	CCl <sub>2</sub> F <sub>2</sub>	dichlorodifluoromethane	75-71-8	17.5823	3.4693E-01	6.1783E-05	-6.0646E-08	250	1500	1,2	107.23	124.91	472.31
9	44	CCl <sub>2</sub> O	phosgene	75-44-5	-25.5184	4.2741E-01	1.7541E-04	-1.1835E-07	200	1500	1,2	66.03	114.37	610.84
10	47	CCl <sub>3</sub> F	trichlorofluoromethane	75-69-4	-17.1225	4.7487E-01	-1.3368E-04	2.2485E-08	250	1500	1,2	93.59	113.17	470.29
11	50	CCl <sub>4</sub>	carbon tetrachloride	56-23-5	-16.6378	4.5415E-01	-2.3060E-04	7.3516E-08	280	1500	1,2	94.06	100.22	393.87
12	68	CF <sub>2</sub> O	carbonyl fluoride	353-50-4	-12.5894	6.0533E-01	-2.6057E-04	6.3108E-08	250	1500	2	123.44	146.40	522.12
13	74	CF <sub>4</sub>	carbon tetrafluoride	75-73-0	5.7541	6.4592E-01	-2.9380E-04	7.5413E-08	145	1500	1,2	93.46	174.22	568.10
14	96	CHBr <sub>3</sub>	bromotorm	75-25-2	-16.3565	3.3682E-01	-2.6896E-05	-1.0122E-08	273	1500	1,2	73.39	81.41	394.20
15	97	CHClF <sub>2</sub>	chlorodifluoromethane	75-45-6	-10.7674	5.1510E-01	-1.6466E-04	2.9454E-08	232	1500	1,2	100.24	128.95	490.80
16	101	CHCl <sub>2</sub> F	dichlorofluoromethane	75-43-4	-3.3101	4.2255E-01	-8.4204E-05	5.3856E-09	280	1500	1,2	108.52	115.33	459.24
17	104	CHCl <sub>3</sub>	chloroform	67-66-3	-3.7801	3.6848E-01	-4.1214E-05	-7.3556E-09	250	1500	1,2	85.65	102.22	431.39
18	113	CHF <sub>3</sub>	fluoroform	75-46-7	-14.3078	6.0345E-01	-2.6143E-04	6.4017E-08	191	1500	1,2	91.86	144.07	518.71
19	117	CHI <sub>3</sub>	iodoform	75-47-8	4.4898	3.5256E-01	6.5518E-05	-4.2194E-08	250	1500	2	96.07	114.31	538.34
20	122	CHN	hydrogen cyanide	74-90-8	-16.2433	2.9174E-01	6.9497E-05	-6.4357E-08	250	1500	1,2	60.03	75.21	360.53
21	140	CH <sub>2</sub> BrCl	bromochloromethane	74-97-5	-12.6588	4.6642E-01	-8.0000E-05	3.0331E-09	250	1500	2	98.99	119.37	517.21
22	144	CH <sub>2</sub> Br <sub>2</sub>	dibromomethane	74-95-3	-8.7122	4.3428E-01	-3.9629E-05	-1.0061E-08	250	1500	2	97.22	116.98	519.59
23	145	CH <sub>2</sub> ClF	chlorofluoromethane	593-70-4	-17.3374	4.9454E-01	-1.6590E-04	3.3816E-08	250	1500	2	96.46	116.26	465.32
24	149	CH <sub>2</sub> Cl <sub>2</sub>	dichloromethane	75-09-2	-12.7747	4.0475E-01	-8.4579E-05	7.6057E-09	250	1500	1,2	83.24	100.58	429.71
25	158	CH <sub>2</sub> F <sub>2</sub>	difluoromethane	75-10-5	-10.8710	5.7456E-01	-2.2423E-04	5.2081E-08	222	1500	1,2	106.20	141.88	522.21
26	161	CH <sub>2</sub> I <sub>2</sub>	diiodomethane	75-11-6	-28.1673	5.0953E-01	-6.7997E-05	-1.0457E-10	288	1500	1,2	112.94	117.70	582.79
27	175	CH <sub>2</sub> O	formaldehyde	50-00-0	-18.7341	5.3862E-01	-1.8943E-04	4.0144E-08	250	1500	2	104.71	126.08	498.47
28	176	CH <sub>2</sub> O <sub>2</sub>	formic acid	64-18-6	-8.9761	3.6883E-01	-5.0868E-05	-2.2075E-09	250	1500	2	80.02	96.41	422.36
29	191	CH <sub>3</sub> Br	methyl bromide	74-83-9	-25.5805	5.3962E-01	-1.4303E-05	-5.3942E-08	260	1500	1,2	112.81	132.61	569.62
30	196	CH <sub>3</sub> Cl	methyl chloride	74-87-3	0.7381	3.6953E-01	-9.3042E-06	-2.8205E-08	230	1500	1,2	84.90	109.34	438.91
31	210	CH <sub>3</sub> Cl <sub>3</sub> Si	methyl trichlorosilane	75-79-6	-11.1133	3.5682E-01	-8.1031E-05	9.7547E-09	250	1500	2	73.18	88.33	374.71
32	214	CH <sub>3</sub> F	methyl fluoride	593-53-3	-6.9282	5.1968E-01	-2.1470E-04	5.1734E-08	195	1500	1,2	86.63	130.30	464.11
33	222	CH <sub>3</sub> I	methyl iodide	74-88-4	-15.8317	5.2487E-01	-1.1139E-04	1.1413E-08	250	1500	2	108.60	131.06	559.36
34	232	CH <sub>3</sub> NO	formamide	75-12-7	1.9229	2.3700E-01	3.6146E-05	-2.5768E-08	250	1500	2	63.03	75.12	351.79
35	235	CH <sub>3</sub> NO <sub>2</sub>	nitromethane	75-52-5	-8.9448	3.8447E-01	-4.8360E-05	-4.0263E-09	250	1500	2	84.09	101.28	445.36
36	251	CH <sub>4</sub>	methane	74-82-8	1.2603	4.3804E-01	-2.4322E-04	7.0981E-08	91	1500	1,2	39.16	112.12	350.63
37	254	CH <sub>4</sub> Cl <sub>2</sub> Si	methyl dichlorosilane	75-54-7	-12.4294	3.7052E-01	-1.0030E-04	1.6232E-08	250	1500	2	74.19	89.55	372.46
38	272	CH <sub>4</sub> O	methyl alcohol	67-56-1	-13.6115	3.8512E-01	-5.4956E-05	-4.1970E-09	240	1500	1,2	75.59	96.21	426.25
39	278	CH <sub>4</sub> S	methyl mercaptan	74-93-1	-36.5186	4.4275E-01	4.0154E-06	-5.9411E-08	273	1500	1,2	83.44	94.27	436.13
40	284	CH <sub>5</sub> ClSi	methyl chlorosilane	993-00-0	-13.2383	3.7835E-01	-1.2025E-04	2.3337E-08	250	1500	2	74.20	89.50	362.49
41	286	CH <sub>5</sub> N	methylamine	74-89-5	-11.1776	3.1870E-01	-1.0526E-04	2.1166E-08	250	1500	2	62.25	75.05	301.46
42	322	CH <sub>6</sub> Si	methyl silane	992-94-9	-11.4440	3.6722E-01	-1.4537E-04	3.3494E-08	250	1500	2	71.80	86.01	325.36
43	337	Cl <sub>4</sub>	carbon tetrachloride	507-25-5	12.6315	2.8116E-01	1.0578E-04	-4.9421E-08	250	1500	2	88.76	104.55	505.58
44	363	CN <sub>4</sub> O <sub>8</sub>	trinitromethane	509-14-8	-8.4248	2.8665E-01	-5.6862E-05	4.5104E-09	250	1500	2	60.76	73.30	314.84
45	372	CO	carbon monoxide	630-08-0	18.0493	6.3753E-01	-3.5748E-04	1.0287E-07	68	1500	1,2	59.78	179.08	517.19
46	373	COS	carbonyl sulfide	463-58-1	-18.0013	5.2969E-01	-1.9661E-04	4.3134E-08	250	1500	1,2	102.81	123.59	479.73
47	375	CO <sub>2</sub>	carbon dioxide	124-38-9	11.8109	4.9838E-01	-1.0851E-04	0.0000E+00	195	1500	1,2	104.87	150.76	515.23
48	382	CS <sub>2</sub>	carbon disulfide	75-15-0	-5.0476	3.4548E-01	2.4582E-05	-3.8939E-08	273	1500	1,2	90.31	99.11	437.06
49	404	C <sub>2</sub> BrF <sub>3</sub>	bromotrifluoroethylene	598-73-2	-19.2872	5.4996E-01	-1.8055E-04	3.6109E-08	250	1500	2	107.48	129.59	521.28
50	413	C <sub>2</sub> Br <sub>2</sub> F <sub>4</sub>	1,2-dibromotetrafluoroethane	124-73-2	-16.3705	4.9207E-01	-1.3029E-04	2.0454E-08	250	1500	2	98.82	119.30	497.61
51	423	C <sub>2</sub> ClF <sub>3</sub>	chlorotrifluoroethylene	79-38-9	-17.7952	5.3197E-01	-2.0024E-04	4.4622E-08	250	1500	2	103.38	124.20	480.23
52	427	C <sub>2</sub> ClF <sub>5</sub>	chloropentafluoroethane	76-15-3	2.9698	4.4990E-01	-1.1891E-04	1.6351E-08	250	1500	1,2	108.27	126.97	465.47
53	441	C <sub>2</sub> Cl <sub>2</sub> F <sub>4</sub>	1,2-dichloro-1,1,2,2-tetrafluoroethane	76-14-2	-17.2784	4.9215E-01	-1.6811E-04	3.4792E-08	230	1500	1,2	87.45	115.44	460.13
54	442	C <sub>2</sub> Cl <sub>2</sub> F <sub>4</sub>	1,1-dichloro-1,1,2,2-tetrafluoroethane	374-07-2	-17.2239	4.9215E-01	-1.6811E-04	3.4792E-08	250	1500	2	95.85	115.49	460.19
55	449	C <sub>2</sub> Cl <sub>3</sub> F <sub>3</sub>	1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	26.4207	2.9577E-01	-1.3738E-04	4.4852E-08	237	1500	1,2	89.40	103.58	312.34
56	450	C <sub>2</sub> Cl <sub>3</sub> F <sub>3</sub>	1,1,1-trichloro-2,2,2-trifluoroethane	354-58-5	-14.1592	4.2552E-01	-1.1272E-04	1.7708E-08	250	1500	2	85.45	103.16	430.27
57	455	C <sub>2</sub> Cl <sub>4</sub>	tetrachloroethylene	127-18-4	-6.0412	2.7658E-01	1.2349E-04	-8.1732E-08	251	1500	1,2	69.87	85.23	410.83
58	456	C <sub>2</sub> Cl <sub>4</sub> F <sub>2</sub>	1,1,2,2-tetrachloro-1,2-difluoroethane	76-12-0	-10.4959	3.7735E-01	-6.7964E-05	3.6635E-09	250	1500	2	79.65	96.07	414.98
59	457	C <sub>2</sub> Cl <sub>4</sub> F <sub>2</sub>	1,1,1,2-tetrachloro-2,2-difluoroethane	76-11-9	-9.8550	3.6861E-01	-6.1364E-05	1.7037E-09	250	1500	2	78.49	94.64	410.74
60	459	C <sub>2</sub> Cl <sub>4</sub> O	trichloroacetyl chloride	76-02-8	-7.7971	3.3876E-01	-4.1672E-05	-3.8938E-09	250	1500	2	74.23	89.40	393.44
61	462	C <sub>2</sub> Cl <sub>5</sub> F	pentachlorofluoroethane	354-56-3	-5.4558	3.1765E-01	-1.9679E-05	-1.0752E-08	250	1500	2	72.56	87.22	390.45
62	463	C <sub>2</sub> Cl <sub>6</sub>	hexachloroethane	67-72-1	-1.6228	2.8542E-01	1.2327E-05	-2.0371E-08	250	1500	2	70.18	84.03	385.49
63	488	C <sub>2</sub> F <sub>4</sub>	tetrafluoroethylene	116-14-3	-15.2117	6.2036E-01	-2.6188E-04	6.2711E-08	250	1500	2	124.49	148.13	537.76
64	494	C <sub>2</sub> F <sub>6</sub>	hexafluoroethane	76-16-4	-13.4317	6.1476E-01	-2.6332E-04	6.3595E-08	250	1500	2	124.79	148.14	530.85
65	511	C <sub>2</sub> HBrClF <sub>3</sub>	halothane	151-67-7	-14.3385	4.6554E-01	-1.0322E-04	1.1786E-08	250	1500	2	95.78	115.60	491.50
66	525	C <sub>2</sub> HClF <sub>2</sub>	2-chloro-1,1-difluoroethylene	359-10-4	-17.4709	5.0574E-01	-1.8128E-04	3.8985E-08	250	1500	2	98.24	118.23	464.84
67	528	C <sub>2</sub> HClF <sub>4</sub>	1-chloro-1,1,2,2-tetrafluoroethane	354-25-6	-17.1726	4.9740E-01	-1.7853E-04	3.8434E-08	250	1500	2	96.62	116.28	456.95
68	529	C <sub>2</sub> HClF <sub>4</sub>	2-chloro-1,1,1,2-tetrafluoroethane	2837-89-0	-16.1753	4.7078E-01	-1.7069E-04	3.7025E-08	250	1500	2	91.43	110.00	430.91
69	534	C <sub>2</sub> HCl <sub>2</sub> F <sub>3</sub>	1,1,2-dichloro-1,2,2-trifluoroethane	812-04-4	-14.3985	4.2805E-01	-1.1675E-04	1.9085E-08	250	1500	2	85.62	103.35	429.40
70	535	C <sub>2</sub> HCl <sub>2</sub> F <sub>3</sub>	1,2-dichloro-1,1,2-trifluoroethane	354-23-4	-14.6229									

Table 1 Viscosity of Gas - Organic Compounds

NO	ID	FORMULA	NAME	CAS No	$\eta_{\text{gas}} = A + B T + C T^2 + D T^3$				$(\eta_{\text{gas}} - \text{micropoise, } T - K)$					
					A	B	C	D	TMIN	TMAX	code	$\eta_{\text{gas}}@TMIN$	$\eta_{\text{gas}}@25\text{C}$	$\eta_{\text{gas}}@TMAX$
81	554	C2HF3	trifluoroethene	359-11-5	-15.7982	5.1661E-01	-2.0630E-04	4.7793E-08	250	1500	2	101.21	121.16	456.25
82	556	C2HF3O2	trifluoroacetic acid	76-05-1	-14.6286	4.4253E-01	-1.1527E-04	1.7673E-08	250	1500	2	89.08	107.53	449.47
83	558	C2HF5	pentafluoroethane	354-33-6	-17.0515	5.6914E-01	-2.2916E-04	5.3361E-08	250	1500	2	111.75	133.68	501.15
84	571	C2H2	acetylene	74-86-2	-13.0846	4.3901E-01	-1.8922E-04	4.5679E-08	193	1500	1,2	64.92	102.20	373.84
85	592	C2H2Br4	1,1,2,2-tetrabromoethane	79-27-6	5.3732	2.8956E-01	6.5338E-05	-8.348E-08	250	1500	2	81.25	96.50	457.29
86	593	C2H2Br4	1,1,1,2-tetrabromoethane	630-16-0	3.8170	2.7589E-01	5.3397E-05	-3.3708E-08	250	1500	2	75.60	89.93	424.04
87	604	C2H2ClF3	1-chloro-1,1,2-trifluoroethane	421-04-5	-16.1732	4.6114E-01	-1.5283E-04	3.0822E-08	250	1500	2	90.04	108.55	435.71
88	605	C2H2ClF3	1-chloro-1,2,2-trifluoroethane	431-07-2	-16.0725	4.5828E-01	-1.5200E-04	3.0679E-08	250	1500	2	89.48	107.86	432.87
89	606	C2H2ClF3	2-chloro-1,1,1-trifluoroethane	75-88-7	-16.0704	4.5824E-01	-1.5036E-04	3.0057E-08	250	1500	2	89.56	107.98	434.42
90	615	C2H2Cl2	1,1-dichloroethylene	75-35-4	-13.4807	4.0120E-01	-1.0910E-04	1.7763E-08	250	1500	2	80.28	96.91	402.80
91	616	C2H2Cl2	cis-1,2-dichloroethylene	156-59-2	-11.3828	3.7621E-01	-8.0356E-05	8.3737E-09	250	1500	2	77.78	93.86	400.39
92	617	C2H2Cl2	trans-1,2-dichloroethylene	156-60-5	-12.1899	3.8240E-01	-9.1392E-05	1.2170E-08	250	1500	2	77.89	94.02	396.85
93	618	C2H2Cl2	dichloroethylene	25323-30-2	-12.2990	3.8367E-01	-9.2864E-05	1.2651E-08	250	1500	2	78.01	94.17	396.96
94	619	C2H2Cl2	1,2-dichloroethylene,cis and trans	540-59-0	-12.2990	3.8367E-01	-9.2864E-05	1.2651E-08	250	1500	2	78.01	94.17	396.96
95	620	C2H2Cl2F2	1,1-dichloro-1,2-difluoroethane	1842-05-3	-13.6835	4.1174E-01	-1.0872E-04	1.7001E-08	250	1500	2	82.72	99.86	416.68
96	621	C2H2Cl2F2	1,1-dichloro-2,2-difluoroethane	471-43-2	-12.7898	4.0951E-01	-9.3555E-05	1.1405E-08	250	1500	2	83.92	101.29	429.47
97	622	C2H2Cl2F2	1,2-dichloro-1,1-difluoroethane	1649-08-7	-13.1979	4.0233E-01	-1.0281E-04	1.5320E-08	250	1500	2	81.20	98.02	410.66
98	623	C2H2Cl2F2	1,2-dichloro-1,2-difluoroethane	431-06-1	-13.6275	4.0944E-01	-1.0853E-04	1.7065E-08	250	1500	2	82.22	99.25	413.94
99	625	C2H2Cl2O	chloroacetyl chloride	79-04-9	-8.2044	3.3892E-01	-4.6240E-05	-2.2146E-09	250	1500	2	73.60	88.67	388.66
100	626	C2H2Cl2O	dichloroacetaldehyde	79-02-7	-9.8545	3.6008E-01	-6.2794E-05	2.7273E-09	250	1500	2	76.28	91.99	398.18
101	627	C2H2Cl2O2	dichloroacetic acid	79-43-6	-2.4005	2.6045E-01	6.4244E-06	-1.6894E-08	250	1500	2	63.21	75.74	346.08
102	630	C2H2Cl3F	1,1,1-trichloro-2-fluoroethane	2366-36-1	-9.4623	3.6111E-01	-5.7759E-05	7.9176E-10	250	1500	2	77.22	93.09	404.92
103	631	C2H2Cl3F	1,1,2-trichloro-1-fluoroethane	811-95-0	-9.5637	3.5660E-01	-5.9735E-05	1.7864E-09	250	1500	2	75.88	91.49	396.96
104	632	C2H2Cl3F	1,1,2-trichloro-2-fluoroethane	359-28-4	-9.9051	3.5888E-01	-6.3648E-05	3.1149E-09	250	1500	2	75.88	91.52	395.72
105	635	C2H2Cl4	1,1,1,2-tetrachloroethane	630-20-6	-5.8001	3.2016E-01	-2.2841E-05	-9.7436E-09	250	1500	2	72.66	87.37	390.16
106	636	C2H2Cl4	1,1,2,2-tetrachloroethane	79-34-5	-4.5385	3.0650E-01	-1.1929E-05	-1.2928E-08	250	1500	2	71.14	85.44	384.74
107	642	C2H2F2	1,1-difluoroethylene	75-38-7	-13.5045	5.6650E-01	-2.4012E-04	5.7636E-08	250	1500	2	114.01	135.58	490.51
108	643	C2H2F2	cis-1,2-difluoroethene	1630-77-9	-18.4703	5.3838E-01	-1.9575E-04	4.2550E-08	250	1500	2	104.56	125.77	492.28
109	644	C2H2F2	trans-1,2-difluoroethene	1630-78-0	-16.0203	4.6697E-01	-1.6978E-04	3.6906E-08	250	1500	2	90.69	109.09	426.98
110	650	C2H2F4	1,1,1,2-tetrafluoroethane	811-97-2	-16.5014	4.7644E-01	-1.7085E-04	3.6100E-08	250	1500	1,2	92.49	111.32	435.59
111	651	C2H2F4	1,1,2,2-tetrafluoroethane	359-35-3	-15.2972	4.5567E-01	-1.7085E-04	3.7969E-08	250	1500	2	88.54	106.38	411.94
112	660	C2H2I4	1,1,1,2-tetraiodoethane	---	12.0186	2.5622E-01	9.8767E-05	-4.5614E-08	250	1500	2	81.53	95.98	464.62
113	661	C2H2I4	1,1,2,2-tetraiodoethane	---	11.1758	2.4624E-01	9.3179E-05	-4.3415E-08	250	1500	2	77.88	91.73	443.67
114	681	C2H2O	ketene	463-51-4	-14.6519	4.4690E-01	-1.7136E-04	3.8673E-08	250	1500	2	86.97	104.38	400.65
115	684	C2H2O4	oxalic acid	144-62-7	2.8436	1.9477E-01	3.8729E-05	-2.4130E-08	250	1500	2	53.58	63.72	300.70
116	688	C2H3Br	vinyl bromide	593-60-2	-15.7200	4.6163E-01	-1.3054E-04	2.2337E-08	250	1500	2	91.88	110.90	458.39
117	697	C2H3Br3	1,1,1-tribromoethane	2311-14-0	-1.8971	3.3709E-01	1.4725E-05	-2.4118E-08	250	1500	2	82.92	99.28	455.48
118	698	C2H3Br3	1,1,2-tribromoethane	78-74-0	-1.1247	3.1995E-01	1.9661E-05	-2.4875E-08	250	1500	2	79.70	95.36	439.09
119	701	C2H3Cl	vinyl chloride	75-01-4	-15.0767	4.2990E-01	-1.4114E-04	2.8226E-08	250	1500	2	84.02	101.30	407.48
120	702	C2H3ClF2	1-chloro-1,1-difluoroethane	75-68-3	-16.8167	4.6507E-01	-1.5568E-04	3.1110E-08	250	1500	1,2	90.21	108.83	435.49
121	703	C2H3ClF2	1-chloro-1,2-difluoroethane	338-64-7	-15.2666	4.3548E-01	-1.4154E-04	2.8049E-08	250	1500	2	85.20	102.73	414.17
122	704	C2H3ClF2	2-chloro-1,1-difluoroethane	338-65-8	-13.7176	4.0565E-01	-1.1232E-04	1.8723E-08	250	1500	2	80.97	97.74	405.22
123	707	C2H3ClO	acetyl chloride	75-36-5	-12.9936	4.0761E-01	-9.7417E-05	1.2972E-08	250	1500	2	83.02	100.22	423.01
124	708	C2H3ClO	chloroacetaldehyde	107-20-0	-9.3402	3.4129E-01	-5.9517E-05	2.5849E-09	250	1500	2	72.30	87.19	377.40
125	710	C2H3ClO2	chloroacetic acid	79-11-8	-2.0247	2.5844E-01	6.3748E-06	-1.6763E-08	250	1500	2	62.72	75.15	343.41
126	711	C2H3ClO2	methyl chloroformate	79-22-1	-11.2045	3.6808E-01	-7.9621E-05	8.5695E-09	250	1500	2	75.97	91.69	390.69
127	714	C2H3Cl2F	1,1-dichloro-1-fluoroethane	1717-00-6	-13.9022	4.1077E-01	-1.1402E-04	1.9065E-08	250	1500	2	81.96	98.94	410.05
128	715	C2H3Cl2F	1,1-dichloro-2-fluoroethane	430-53-5	-13.8012	4.0541E-01	-1.1453E-04	1.9573E-08	250	1500	2	80.70	97.41	402.69
129	716	C2H3Cl2F	1,2-dichloro-1-fluoroethane	430-57-9	-10.5299	3.6116E-01	-7.1496E-05	5.9201E-09	250	1500	2	75.38	90.95	390.32
130	720	C2H3Cl3	1,1,1-trichloroethane	71-55-6	-10.5016	3.6894E-01	-6.9587E-05	4.7552E-09	250	1500	2	77.46	93.44	402.39
131	721	C2H3Cl3	1,1,2-trichloroethane	79-00-5	-6.9596	3.2587E-01	-3.4195E-05	-5.9149E-09	250	1500	2	72.28	87.00	384.95
132	728	C2H3F	vinyl fluoride	75-02-5	-13.6223	4.8573E-01	-1.9965E-04	4.7074E-08	250	1500	2	96.07	114.70	424.62
133	735	C2H3F3	1,1,1-trifluoroethane	420-46-2	-17.0915	5.6096E-01	-2.2435E-04	5.2027E-08	250	1500	2	109.94	131.59	495.14
134	736	C2H3F3	1,1,2-trifluoroethane	430-66-0	-15.5125	4.4230E-01	-1.4570E-04	2.9228E-08	250	1500	2	86.41	104.18	418.76
135	743	C2H3I	vinyl iodide	593-66-8	-14.1121	4.8178E-01	-9.6276E-05	8.2345E-09	250	1500	2	100.45	121.19	519.73
136	746	C2H3I3	1,1,1-triiodoethane	594-21-8	6.5681	3.0768E-01	7.5043E-05	-4.2505E-08	250	1500	2	87.51	103.85	493.48
137	747	C2H3I3	1,1,2-triiodoethane	---	5.7781	3.0527E-01	6.9634E-05	-4.0665E-08	250	1500	2	85.81	101.91	483.11
138	753	C2H3N	acetonitrile	75-05-8	-11.6187	4.0895E-01	-7.6845E-05	5.1629E-09	250	1500	2	85.90	103.62	446.33
139	754	C2H3N	methyl isocyanide	593-75-9	-8.9286	2.8735E-01	-6.4926E-05	7.7315E-09	250	1500	2	58.97	71.18	302.10
140	755	C2H3NO	methyl isocyanate	624-83-9	-12.1813	3.7940E-01	-9.2160E-05	1.2635E-08	250	1500	2	77.11	93.08	392.21
141	787	C2H4	ethylene	74-85-1	-8.5954	4.3062E-01	-2.0448E-04	5.3453E-08	150	1500	1,2	51.58	103.04	357.67
142	798	C2H4Br2	1,1-dibromoethane	557-91-5	-6.8660	3.9231E-01	-2.5574E-05	-1.2818E-08	250	1500	2	89.41	107.49	480.80
143	799	C2H4Br2	1,2-dibromoethane	106-93-4	-5.2622	3.7677E-01	-1.1656E-05	-1.6975E-08	250	1500	2	87.94	105.59	476.38
144	801	C2H4ClF	1-chloro-1-fluoroethane	1615-75-4	-14.1173	4.0767E-01	-1.2235E-04	2.2408E-08	250	1500	2	80.50	97.15	397.72
145	802	C2H4ClF	1-chloro-2-fluoroethane	762-50-5	-11.4552	3.6204E-01	-8.5099E-05	1.0984E-08	250	1500	2	73.91	89.21	377.20
146	812	C2H4Cl2	1,1-dichloroethane	75-34-3	-15.6741	4.2348E-01	-1.7980E-04	5.5345E-08	275	1500	1,2	88.33	96.07	401.77
147	813	C2H4Cl2	1,2-dichloroethane	107-06-2	1.0235	3.1793E-01	-4.1887E-05	2.6760E-11	275	1500	1,2	85.29	92.09	383.77
148	814	C2H4Cl2	dichloroethane	1300-21-6	-10.2724	3.5694E-01	-6.8829E-05	5.1644E-09	250	1500	2	74.74	90.17	387.70
149	816	C2H4Cl2O	bis(chloromethyl) ether	542-88-1	-8.0127	3.2751E-01	-4.5654E-05	-1.7806E-09	250	1500	2	70.98	85.53	374.52
150	834	C2H4F2	1,1-difluoroethane	75-37-6	-15.0537	4.2844E-01	-1.5061E-04	3.1266E-08	250	1500	1,2	83.13	100.13	394.25
151	835	C2H4F2	1,2-difluoroethane	624-72-6	-13.5270	3.9889E-01	-1.1137E-04	1.8759E-08	250	1500	2	79.53	96.00	397.54
152	844	C2H4I2												



Table 1 Viscosity of Gas - Organic Compounds

				$\eta_{gas} = A + B T + C T^2 + D T^3$					$(\eta_{gas} - \text{micropoise, } T - K)$					
NO	ID	FORMULA	NAME	CAS No	A	B	C	D	TMIN	TMAX	code	$\eta_{gas}@TMIN$	$\eta_{gas}@25\text{ C}$	$\eta_{gas}@TMAX$
161	914	C2H5Cl	ethyl chloride	75-00-3	2.3849	3.1031E-01	3.9413E-05	-4.6993E-08	213	1500	1,2	69.81	97.16	397.92
162	917	C2H5ClO	2-chloroethanol	107-07-3	-6.7113	2.8337E-01	-3.6975E-05	-2.4752E-09	250	1500	2	61.78	74.42	326.79
163	939	C2H5F	ethyl fluoride	353-36-6	-14.7009	4.4297E-01	-1.6807E-04	3.7659E-08	250	1500	2	86.13	103.43	398.70
164	948	C2H5I	ethyl iodide	75-03-6	-8.5222	3.1946E-01	-5.2950E-05	1.3905E-09	250	1500	2	68.05	82.05	356.22
165	954	C2H5N	ethylenimine	151-56-4	-9.0987	3.1064E-01	-6.2071E-05	5.3077E-09	250	1500	2	64.76	78.14	335.12
166	956	C2H5NO	acetamide	60-35-5	1.4002	2.2700E-01	3.1330E-05	-2.3583E-08	250	1500	2	59.74	71.24	332.79
167	957	C2H5NO	N-methylformamide	123-39-7	-0.3619	2.4847E-01	1.9475E-05	-2.0774E-08	250	1500	2	62.65	74.90	346.06
168	958	C2H5NO2	nitroethane	79-24-3	-7.3728	3.2610E-01	-3.8646E-05	-4.2896E-09	250	1500	2	71.67	86.30	380.34
169	985	C2H6	ethane	74-84-0	-0.4813	3.4385E-01	-9.0981E-05	1.1542E-08	150	1500	1,2	49.09	94.26	349.55
170	986	C2H6AlCl	dimethylaluminum chloride	1184-58-3	-4.6637	2.4709E-01	-1.9525E-05	-6.8290E-09	250	1500	2	55.78	67.09	299.00
171	1065	C2H6O	ethyl alcohol	64-17-5	1.8086	3.0504E-01	-3.9837E-05	-2.5788E-09	200	1500	1,2	61.20	89.15	361.03
172	1066	C2H6O	dimethyl ether	115-10-6	-1.2323	2.7003E-01	1.7686E-04	-1.2828E-07	216	1500	1,2	64.05	91.60	368.82
173	1067	C2H6OS	dimethyl sulfoxide	67-68-5	-0.1418	2.7254E-01	-2.3498E-08	250	1500	2	69.09	82.58	382.08	
174	1072	C2H6O2	ethylene glycol	107-21-1	-3.6536	2.4674E-01	-9.6035E-06	-1.0408E-08	250	1500	2	57.27	68.78	309.73
175	1083	C2H6O4S	dimethyl sulfate	77-78-1	1.3699	2.4519E-01	3.2767E-05	-2.5113E-08	250	1500	2	64.32	76.72	358.13
176	1084	C2H6O4S	ethyl sulfate	540-82-9	1.3699	2.4519E-01	3.2767E-05	-2.5113E-08	250	1500	2	64.32	76.72	358.13
177	1092	C2H6S	ethyl mercaptan	75-08-1	-11.0076	3.3837E-01	-8.4747E-05	1.2233E-08	250	1500	2	68.48	82.67	347.16
178	1093	C2H6S	dimethyl sulfide	75-18-3	-11.0491	3.4259E-01	-8.4088E-05	1.1737E-08	250	1500	2	69.53	83.93	353.25
179	1094	C2H6S2	dimethyl disulfide	624-92-0	-6.1310	2.9496E-01	-2.9161E-05	-6.0107E-09	250	1500	2	65.69	79.06	350.40
180	1115	C2H7N	ethylamine	75-04-7	-11.3451	3.2708E-01	-9.8873E-05	1.8247E-08	250	1500	2	64.53	77.87	318.39
181	1116	C2H7N	dimethylamine	124-40-3	-6.7181	2.6636E-01	6.6802E-05	-6.4942E-08	250	1500	1,2	63.03	76.92	323.95
182	1117	C2H7NO	monoethanolamine	141-43-5	-3.2014	2.0094E-01	-9.9979E-06	-7.6896E-09	250	1500	2	46.29	55.62	249.76
183	1118	C2H7NO	1-aminoethanol	75-39-8	-3.2002	2.0086E-01	-9.9940E-06	-7.6865E-09	250	1500	2	46.27	55.59	249.66
184	1159	C2H8N2	ethylenediamine	107-15-3	-4.9456	2.1874E-01	-2.5924E-05	-2.8774E-09	250	1500	2	48.07	57.89	255.13
185	1168	C2H8Si	dimethyl silane	1111-74-6	-11.6996	3.3817E-01	-1.2077E-04	2.5902E-08	250	1500	2	65.70	79.08	311.23
186	1210	C2N2	cyanogen	460-19-5	4.0097	3.1026E-01	7.4026E-05	-6.6801E-08	252	1500	1,2	85.83	101.33	410.51
187	1284	C3F6	hexafluoropropylene	116-15-4	-17.3897	5.3303E-01	-2.0518E-04	4.6426E-08	250	1500	2	103.77	124.52	477.18
188	1287	C3F6O	hexafluoroacetone	684-16-2	-14.9490	4.7248E-01	-1.8554E-04	4.2533E-08	250	1500	2	92.24	110.55	419.85
189	1299	C3F8	octafluoropropane	76-19-7	-16.6655	5.4951E-01	-2.2020E-04	5.1124E-08	250	1500	2	107.75	128.95	484.70
190	1368	C3H2F6	1,1,1,2,2,3-hexafluoropropane	677-56-5	-14.0912	4.0762E-01	-1.4587E-04	3.1331E-08	250	1500	2	79.19	95.31	374.88
191	1369	C3H2F6	1,1,1,2,3,3-hexafluoropropane	431-63-0	-16.1184	4.6366E-01	-1.6335E-04	3.4665E-08	250	1500	2	90.13	108.52	428.83
192	1370	C3H2F6	1,1,1,3,3,3-hexafluoropropane	690-39-1	-16.2420	4.6740E-01	-1.6487E-04	3.5023E-08	250	1500	2	90.85	109.38	432.09
193	1371	C3H2F6	1,1,2,2,3,3-hexafluoropropane	680-00-2	-14.9426	4.2725E-01	-1.4660E-04	3.0456E-08	250	1500	2	83.18	100.22	398.87
194	1377	C3H2N2	malononitrile	109-77-3	-0.5435	2.1126E-01	1.4629E-05	-1.6996E-08	250	1500	2	52.92	63.29	291.90
195	1402	C3H3Cl	propargyl chloride	624-65-7	-9.9235	3.4358E-01	-6.6735E-05	5.1516E-09	250	1500	2	71.88	86.72	372.68
196	1449	C3H3F5	1,1,1,2,2-pentafluoropropane	1814-88-6	-16.2169	4.7944E-01	-1.7814E-04	3.9336E-08	250	1500	2	93.12	111.94	434.90
197	1450	C3H3F5	1,1,1,2,3-pentafluoropropane	431-31-2	-15.7109	4.5330E-01	-1.6114E-04	3.4437E-08	250	1500	2	88.08	106.03	417.89
198	1451	C3H3F5	1,1,1,3,3-pentafluoropropane	460-73-1	-15.7109	4.5330E-01	-1.6114E-04	3.4437E-08	250	1500	2	88.08	106.03	417.89
199	1452	C3H3F5	1,1,2,2,3-pentafluoropropane	679-86-7	-14.8115	4.2442E-01	-1.3240E-04	2.5232E-08	250	1500	2	83.41	100.63	409.08
200	1453	C3H3F5	1,1,2,3,3-pentafluoropropane	24270-66-4	-13.4263	3.8363E-01	-1.2218E-04	2.3759E-08	250	1500	2	75.22	90.72	367.31
201	1462	C3H3N	acrylonitrile	107-13-1	-10.7572	3.6478E-01	-7.3903E-05	6.6126E-09	250	1500	2	75.92	91.61	392.45
202	1463	C3H3NO	oxazole	288-42-6	-7.9791	2.9036E-01	-5.1051E-05	2.3544E-09	250	1500	2	61.46	74.11	320.64
203	1492	C3H4	methylacetylene	74-99-7	-11.3703	3.7385E-01	-1.6782E-04	4.7169E-08	173	1500	1,2	48.53	86.43	331.00
204	1493	C3H4	allene	463-49-0	-13.0585	3.5241E-01	-1.0492E-04	1.5421E-08	175	1500	1,2	45.48	83.09	331.53
205	1514	C3H4Br4	1,1,1,2-tetrabromopropane	62127-49-5	3.0637	2.6322E-01	4.6873E-05	-3.0836E-08	250	1500	2	71.32	84.89	399.29
206	1515	C3H4Br4	1,1,1,3-tetrabromopropane	62127-50-8	3.3771	2.5454E-01	4.8254E-05	-3.0772E-08	250	1500	2	69.55	82.74	389.90
207	1516	C3H4Br4	1,1,2,2-tetrabromopropane	34570-59-7	1.9682	2.7295E-01	3.9803E-05	-2.9069E-08	250	1500	2	72.24	86.12	402.84
208	1517	C3H4Br4	1,1,2,3-tetrabromopropane	34581-76-5	3.3811	2.5138E-01	4.7977E-05	-3.0495E-08	250	1500	2	68.75	81.79	385.48
209	1518	C3H4Br4	1,1,3,3-tetrabromopropane	51525-97-4	4.0249	2.4570E-01	5.1856E-05	-3.1402E-08	250	1500	2	68.20	81.06	383.28
210	1519	C3H4Br4	1,2,2,3-tetrabromopropane	54268-02-9	2.6907	2.6061E-01	4.3952E-05	-2.9725E-08	250	1500	2	70.13	83.51	392.18
211	1533	C3H4Cl2	2,3-dichloropropene	78-88-6	-7.9326	3.2088E-01	-4.5679E-05	-1.3929E-09	250	1500	2	69.41	83.64	365.91
212	1534	C3H4Cl2	1,1-dichloropropene	563-58-6	-7.8801	3.1876E-01	-4.5377E-05	-1.3837E-09	250	1500	2	68.95	83.09	363.49
213	1535	C3H4Cl2	cis-1,2-dichloropropene	6923-20-2	-7.8801	3.1876E-01	-4.5377E-05	-1.3837E-09	250	1500	2	68.95	83.09	363.49
214	1536	C3H4Cl2	trans-1,2-dichloropropene	7069-38-7	-7.8801	3.1876E-01	-4.5377E-05	-1.3837E-09	250	1500	2	68.95	83.09	363.49
215	1537	C3H4Cl2	cis-1,3-dichloropropene	10061-01-5	-7.8801	3.1876E-01	-4.5377E-05	-1.3837E-09	250	1500	2	68.95	83.09	363.49
216	1538	C3H4Cl2	trans-1,3-dichloropropene	10061-02-6	-7.8801	3.1876E-01	-4.5377E-05	-1.3837E-09	250	1500	2	68.95	83.09	363.49
217	1539	C3H4Cl2	3,3-dichloropropene	563-57-5	-7.8801	3.1876E-01	-4.5377E-05	-1.3837E-09	250	1500	2	68.95	83.09	363.49
218	1540	C3H4Cl2	1,2-dichloropropene; (cis+trans)	542-75-6	-7.8801	3.1876E-01	-4.5377E-05	-1.3837E-09	250	1500	2	68.95	83.09	363.49
219	1541	C3H4Cl2	1,2-dichloropropene	563-54-2	-7.8801	3.1876E-01	-4.5377E-05	-1.3837E-09	250	1500	2	68.95	83.09	363.49
220	1542	C3H4Cl2	dichloropropylene	26952-23-8	-7.8801	3.1876E-01	-4.5377E-05	-1.3837E-09	250	1500	2	68.95	83.09	363.49
221	1565	C3H4Cl4	1,1,1,2-tetrachloropropane	812-03-3	-4.1071	2.8316E-01	-1.0203E-05	-1.2239E-08	250	1500	2	65.86	79.09	356.38
222	1566	C3H4Cl4	1,1,1,3-tetrachloropropane	1070-78-6	-3.6141	2.7377E-01	-6.5024E-06	-1.3041E-08	250	1500	2	64.22	77.09	348.40
223	1567	C3H4Cl4	1,1,2,2-tetrachloropropane	13116-60-4	-3.6992	2.7926E-01	-6.7515E-06	-1.3260E-08	250	1500	2	65.49	78.61	355.24
224	1568	C3H4Cl4	1,1,2,3-tetrachloropropane	18495-30-2	-2.4188	2.6058E-01	3.1056E-06	-1.5727E-08	250	1500	2	62.67	75.13	342.35
225	1569	C3H4Cl4	1,1,3,3-tetrachloropropane	1653-17-4	-3.2648	2.6855E-01	-3.7795E-06	-1.3723E-08	250	1500	2	63.42	76.10	344.73
226	1570	C3H4Cl4	1,2,2,3-tetrachloropropane	13116-53-5	-3.2219	2.7004E-01	-3.2383E-06	-1.4001E-08	250	1500	2	63.87	76.63	347.30
227	1578	C3H4F4	1,1,1,2-tetrafluoropropane	421-48-7	-15.4136	4.4120E-01	-1.5235E-04	3.1816E-08	250	1500	2	85.86	103.43	410.98
228	1579	C3H4F4	1,1,1,3-tetrafluoropropane	460-36-6	-13.9774	4.0329E-01	-1.2148E-04	2.2334E-08	250	1500	2	79.60	96.06	393.01
229	1580	C3H4F4	1,1,2,2-tetrafluoropropane	40723-63-5	-14.3143	4.1307E-01	-1.2435E-04	2.2848E-08	250	1500	2	81.54	98.39	402.61
230	1581	C3H4F4	1,1,2,3-tetrafluoropropane	---	-14.1321	4.0543E-01	-1.2559E-04	2.3767E-08	250	1500	2	79.75	96.21	391.66
231	1582	C3H4F4	1,1,3,3-tetrafluoropropane	---	-14.1321	4.0543E-01	-1.2559E-04	2.3767E-08	250	1500	2	79.75	96.21	391.66
232	1583	C3H4F4	1,2,2,3-tetrafluoropropane	813-75-2	-14.1088	4.0582E-01	-1.2400E-04	2.3140E						

Table 1 Viscosity of Gas - Organic Compounds

NO	ID	FORMULA	NAME	CAS No	$\eta_{\text{gas}} = A + BT + CT^2 + DT^3$				$(\eta_{\text{gas}} - \text{micropoise, T - K})$					
					A	B	C	D	TMIN	TMAX	code	$\eta_{\text{gas}} @ T_{\text{MIN}}$	$\eta_{\text{gas}} @ 25 \text{ C}$	$\eta_{\text{gas}} @ T_{\text{MAX}}$
241	1626	C3H4O2	acrylic acid	79-10-7	-5.1590	2.6495E-01	-2.2559E-05	-6.7299E-09	250	1500	2	59.56	71.65	318.79
242	1627	C3H4O2	beta-propiolactone	57-57-8	-2.6608	3.3963E-01	8.3775E-06	-2.2030E-08	250	1500	2	82.43	98.76	451.29
243	1628	C3H4O2	vinyl formate	692-45-5	-11.2439	3.4479E-01	-8.6861E-05	1.2656E-08	250	1500	2	69.72	84.17	353.22
244	1633	C3H4O3	ethylene carbonate	96-49-1	3.7355	3.1554E-01	5.6637E-05	-3.7112E-08	250	1500	2	85.58	101.87	479.23
245	1634	C3H4O3	pyruvic acid	127-17-3	-4.0154	2.4360E-01	-1.3430E-05	-8.8478E-09	250	1500	2	55.91	67.19	301.30
246	1642	C3H5Br	cis-1-bromo-1-propene	590-13-6	-11.9538	3.9064E-01	-8.5437E-05	9.4465E-09	250	1500	2	80.51	97.17	413.65
247	1643	C3H5Br	trans-1-bromo-1-propene	590-15-8	-11.4655	3.8469E-01	-7.9650E-05	7.6172E-09	250	1500	2	79.85	96.35	412.06
248	1644	C3H5Br	2-bromo-1-propene	557-93-7	-12.6585	3.9938E-01	-9.4235E-05	1.2252E-08	250	1500	2	81.49	98.37	415.73
249	1645	C3H5Br	3-bromo-1-propene	106-95-6	-11.0537	3.8162E-01	-7.4551E-05	5.8821E-09	250	1500	2	79.78	96.25	413.49
250	1647	C3H5Br	1-bromo-1-propene; (cis+trans)	590-14-7	-11.7602	3.8795E-01	-8.3191E-05	8.7580E-09	250	1500	2	80.16	96.74	412.54
251	1663	C3H5Br3	1,1,1-tribromopropane	62127-61-1	-1.0091	3.0001E-01	1.8814E-05	-2.3456E-08	250	1500	2	74.80	89.49	412.18
252	1664	C3H5Br3	1,1,2-tribromopropane	14602-62-1	-0.5825	2.9336E-01	2.1728E-05	-2.4090E-08	250	1500	2	73.74	88.18	407.05
253	1665	C3H5Br3	1,1,3-tribromopropane	23511-78-6	-0.5793	2.8726E-01	2.1203E-05	-2.3563E-08	250	1500	2	72.19	86.33	398.48
254	1666	C3H5Br3	1,2,2-tribromopropane	14476-30-3	-1.0964	3.0081E-01	1.8161E-05	-2.3274E-08	250	1500	2	74.88	89.59	412.43
255	1667	C3H5Br3	1,2,3-tribromopropane	96-11-7	0.7829	2.7493E-01	3.0962E-05	-2.6208E-08	250	1500	2	71.04	84.81	394.39
256	1668	C3H5Cl	cis-1-chloro-1-propene	16136-84-8	-11.7010	3.5032E-01	-9.3729E-05	1.4930E-08	250	1500	2	70.25	84.81	353.28
257	1669	C3H5Cl	trans-1-chloro-1-propene	16136-85-9	-11.4002	3.4594E-01	-8.9407E-05	1.3551E-08	250	1500	2	69.71	84.15	352.08
258	1670	C3H5Cl	2-chloro-1-propene	557-98-2	-12.2755	3.6306E-01	-1.0049E-04	1.6742E-08	250	1500	2	72.47	87.48	362.71
259	1671	C3H5Cl	3-chloro-1-propene	107-05-1	-10.7694	3.4314E-01	-7.9228E-05	9.8715E-09	250	1500	2	70.22	84.76	359.00
260	1672	C3H5Cl	1-chloro-1-propene	590-21-6	-11.4762	3.4810E-01	-9.0059E-05	1.3672E-08	250	1500	2	70.13	84.67	354.18
261	1676	C3H5ClO	alpha-epichlorohydrin	106-89-8	-6.1798	3.0582E-01	-2.8373E-05	-6.9144E-09	250	1500	2	68.39	82.30	365.38
262	1688	C3H5ClO2	methyl chloroacetate	96-34-4	-6.2072	2.8685E-01	-3.0969E-05	-4.8876E-09	250	1500	2	63.49	76.44	337.90
263	1689	C3H5ClO2	ethyl chloroformate	541-41-3	-9.8205	3.0818E-01	-7.3594E-05	9.7850E-09	250	1500	2	62.78	75.78	319.89
264	1703	C3H5ClO3	1,1,1-trichloropropane	7789-89-1	-7.3538	3.1125E-01	-4.0412E-05	-2.7933E-09	250	1500	2	67.89	81.78	359.17
265	1704	C3H5Cl3	1,1,2-trichloropropane	598-77-6	-5.4296	2.8989E-01	-2.2480E-05	-8.1675E-09	250	1500	2	65.51	78.79	351.27
266	1705	C3H5Cl3	1,1,3-trichloropropane	20395-25-9	-4.5312	2.7620E-01	-1.5017E-05	-1.0108E-08	250	1500	2	63.42	76.21	341.86
267	1706	C3H5Cl3	1,2,2-trichloropropane	3175-23-3	-5.9190	2.9653E-01	-2.6750E-05	-6.9829E-09	250	1500	2	66.43	79.93	355.12
268	1707	C3H5Cl3	1,2,3-trichloropropane	96-18-4	-3.7473	2.7429E-01	-7.6989E-06	-1.2641E-08	250	1500	2	64.15	77.01	347.70
269	1711	C3H5F	cis-1-fluoro-1-propene	19184-10-2	-13.1033	3.7361E-01	-1.2323E-04	2.4750E-08	250	1500	2	72.98	87.99	353.56
270	1712	C3H5F	trans-1-fluoro-1-propene	20327-65-5	-13.1033	3.7361E-01	-1.2323E-04	2.4750E-08	250	1500	2	72.98	87.99	353.56
271	1713	C3H5F	2-fluoro-1-propene	1184-60-7	-13.4678	3.9161E-01	-1.4172E-04	3.0700E-08	250	1500	2	76.06	91.51	358.68
272	1714	C3H5F	3-fluoro-1-propene	818-92-8	-13.4187	3.9111E-01	-1.4218E-04	3.0905E-08	250	1500	2	75.96	91.37	357.63
273	1721	C3H5F3	1,1,1-trifluoropropane	421-07-8	-14.5722	4.2629E-01	-1.5597E-04	3.4060E-08	250	1500	2	82.78	99.56	388.89
274	1722	C3H5F3	1,1,2-trifluoropropane	---	-14.7381	4.2496E-01	-1.5079E-04	3.2179E-08	250	1500	2	82.58	99.41	392.02
275	1723	C3H5F3	1,1,3-trifluoropropane	---	-14.3917	4.1612E-01	-1.4874E-04	3.1921E-08	250	1500	2	80.84	97.30	382.86
276	1724	C3H5F3	1,2,2-trifluoropropane	811-94-9	-14.8355	4.2776E-01	-1.5178E-04	3.2388E-08	250	1500	2	83.12	100.07	394.61
277	1725	C3H5F3	1,2,3-trifluoropropane	---	-14.3917	4.1612E-01	-1.4874E-04	3.1921E-08	250	1500	2	80.84	97.30	382.86
278	1734	C3H5I	cis-1-iodo-1-propene	7796-36-3	-9.4493	3.9413E-01	-5.2727E-05	-2.9625E-09	250	1500	2	85.74	103.30	453.12
279	1735	C3H5I	trans-1-iodo-1-propene	7796-54-5	-9.4493	3.9413E-01	-5.2727E-05	-2.9625E-09	250	1500	2	85.74	103.30	453.12
280	1736	C3H5I	2-iodo-1-propene	4375-96-6	-8.4231	3.8326E-01	-4.2778E-05	-6.0147E-09	250	1500	2	84.62	101.88	449.91
281	1737	C3H5I	3-iodo-1-propene	556-56-9	-8.5618	3.8527E-01	-4.4030E-05	-5.6680E-09	250	1500	2	84.91	102.24	451.14
282	1742	C3H5I3	1,1,1-triodopropane	---	6.7097	2.7734E-01	7.2651E-05	-3.9854E-08	250	1500	2	79.96	94.80	451.68
283	1743	C3H5I3	1,1,2-triodopropane	---	6.4629	2.7692E-01	7.1055E-05	-3.9340E-08	250	1500	2	79.52	94.30	448.94
284	1744	C3H5I3	1,1,3-triodopropane	---	6.0274	2.7492E-01	6.8071E-05	-3.8295E-08	250	1500	2	78.41	93.03	442.32
285	1745	C3H5I3	1,2,2-triodopropane	---	6.7097	2.7734E-01	7.2651E-05	-3.9854E-08	250	1500	2	79.96	94.80	451.68
286	1746	C3H5I3	1,2,3-triodopropane	---	6.0274	2.7492E-01	6.8071E-05	-3.8295E-08	250	1500	2	78.41	93.03	442.32
287	1752	C3H5N	propionitrile	107-12-0	-8.6111	3.2773E-01	-5.2706E-05	8.2496E-09	250	1500	2	70.04	84.44	367.18
288	1753	C3H5N	ethyl isocyanide	624-79-3	-7.7798	2.6411E-01	-5.3386E-05	4.7425E-09	250	1500	2	54.98	66.34	284.27
289	1755	C3H5NO	acrylamide	79-06-1	-0.7331	2.0968E-01	1.2919E-05	-1.6314E-08	250	1500	2	52.24	62.50	287.80
290	1756	C3H5NO	hydracrylonitrile	109-78-4	-1.3213	1.8549E-01	5.7224E-06	-1.2436E-08	250	1500	2	45.22	54.16	247.82
291	1757	C3H5NO	lactonitrile	78-97-7	-3.0872	2.0404E-01	-8.5733E-06	-8.3783E-09	250	1500	2	47.25	56.76	255.40
292	1760	C3H5NO	ethyl isocyanate	109-90-0	-9.0490	2.9817E-01	-6.4092E-05	6.7893E-09	250	1500	2	61.59	74.33	316.90
293	1796	C3H5N3O9	nitroglycerine	55-63-0	-1.8778	2.1118E-01	3.2473E-06	-1.3004E-08	250	1500	2	50.92	61.03	278.30
294	1809	C3H6	cyclopropane	75-19-4	-11.7229	3.9090E-01	-1.9309E-04	5.9972E-08	240	1500	1,2	71.80	89.25	342.58
295	1810	C3H6	propylene	115-07-1	-12.6908	3.8471E-01	-1.7939E-04	4.7431E-08	193	1500	1,2	55.22	87.32	320.81
296	1824	C3H6Br2	1,1-dibromopropane	598-17-4	-6.1124	3.3772E-01	-2.4035E-05	-1.0300E-08	250	1500	2	76.65	92.17	411.63
297	1825	C3H6Br2	1,2-dibromopropane	78-75-1	-5.5032	3.3256E-01	-1.8545E-05	-1.2003E-08	250	1500	2	76.29	91.68	411.10
298	1826	C3H6Br2	1,3-dibromopropane	109-64-8	-3.2321	3.0382E-01	-6.7256E-06	-1.7027E-08	250	1500	2	72.45	86.89	394.88
299	1827	C3H6Br2	2,2-dibromopropane	594-16-1	-7.4134	3.5927E-01	-3.4944E-05	-7.5322E-09	250	1500	2	80.10	96.40	427.45
300	1844	C3H6Cl2	1,1-dichloropropane	78-99-9	-8.5989	3.2093E-01	-5.3658E-05	1.5697E-09	250	1500	2	68.30	82.36	357.36
301	1845	C3H6Cl2	1,2-dichloropropane	78-87-5	-7.8682	3.1038E-01	-4.6471E-05	-4.9954E-09	250	1500	2	66.82	80.53	351.46
302	1846	C3H6Cl2	1,3-dichloropropane	142-28-9	-6.2067	2.9256E-01	-3.0256E-05	-5.4731E-09	250	1500	2	64.96	78.19	346.09
303	1847	C3H6Cl2	2,2-dichloropropane	594-20-7	-9.8558	3.3937E-01	-6.6649E-05	5.3625E-09	250	1500	2	70.91	85.55	367.34
304	1848	C3H6Cl2	1,2-dichloropropane, (±)	26198-63-0	-8.0455	3.1225E-01	-4.8298E-05	7.2585E-11	250	1500	2	67.00	80.76	351.90
305	1849	C3H6Cl2	dichloropropane	26638-19-7	-8.0455	3.1225E-01	-4.8298E-05	7.2585E-11	250	1500	2	67.00	80.76	351.90
306	1865	C3H6F2	1,1-difluoropropane	430-61-5	-13.3528	3.8072E-01	-1.2577E-04	2.5293E-08	250	1500	2	74.36	89.65	360.11
307	1866	C3H6F2	1,2-difluoropropane	62126-90-3	-12.6433	3.6154E-01	-1.1440E-04	2.2109E-08	250	1500	2	70.94	85.57	346.88
308	1867	C3H6F2	1,3-difluoropropane	462-39-5	-11.6309	3.4552E-01	-9.4431E-05	1.5477E-08	250	1500	2	69.09	83.40	346.42
309	1868	C3H6F2	2,2-difluoropropane	420-45-1	-13.9674	3.9825E-01	-1.3198E-04	2.6617E-08	250	1500	2	77.76	93.74	375.28
310	1871	C3H6I2	1,1-diiodopropane	10250-52-9	-1.2677	3.3243E-01	1.9603E-05	-2.5558E-08	250	1500	2	82.67	98.91	455.23
311	1872	C3H6I2	1,2-diiodopropane	598-29-8	2.9421	2.9510E-01	4.9012E-05	-3.3410E-08	250	1500	2	79.26	94.40	443.11
312	1873	C3H6I2	1,3-diiodopropane	627-31-6	2.1638	2.9528E-01	4.3317E-05	-3.1533E-08	250	1500	2	78.20	93.22	4



Table 1 Viscosity of Gas - Organic Compounds

NO	ID	FORMULA	NAME	CAS No	$\eta_{gas} = A + B T + C T^2 + D T^3$				$(\eta_{gas} - \text{micropoise, T - K})$					
					A	B	C	D	TMIN	TMAX	code	$\eta_{gas@TMIN}$	$\eta_{gas@25\text{C}}$	$\eta_{gas@TMAX}$
321	1928	C3H6O	(R)-(+)-propylene oxide	15448-47-2	-11.0361	3.4071E-01	-8.4470E-05	1.1991E-08	250	1500	2	69.05	83.36	350.45
322	1930	C3H6O2	propanoic acid	79-09-4	-5.8594	2.7806E-01	-2.8334E-05	-5.3565E-09	250	1500	2	61.80	74.38	329.40
323	1931	C3H6O2	ethyl formate	109-94-4	-10.6202	3.3348E-01	-7.9526E-05	1.0547E-08	250	1500	2	67.94	82.02	346.27
324	1932	C3H6O2	methyl acetate	79-20-9	-15.9858	3.4493E-01	-8.2437E-05	1.0046E-08	200	1500	1,2	49.78	79.79	349.84
325	1942	C3H6O2S	3-mercaptpropionic acid	107-96-0	0.0093	2.1132E-01	1.9123E-05	-1.8549E-08	250	1500	2	53.75	64.22	297.42
326	1948	C3H6O3	lactic acid	50-21-5	-4.6063	2.3838E-01	-1.9932E-05	-6.1884E-09	250	1500	2	53.65	64.53	287.23
327	1949	C3H6O3	methoxyacetic acid	625-45-6	-1.5616	2.2488E-01	7.2848E-06	-1.5199E-08	250	1500	2	54.88	65.73	300.85
328	1950	C3H6O3	trioxane	110-88-3	-6.9098	3.2791E-01	-3.3414E-05	-6.3168E-09	250	1500	2	72.88	87.72	388.45
329	1967	C3H6S	thiacyclobutane	287-27-4	-6.5785	3.1009E-01	-3.2069E-05	-5.8010E-09	250	1500	2	68.85	82.87	366.82
330	1968	C3H6S	2-methylthiacyclopropane	1072-43-1	-8.7148	3.2683E-01	-5.4122E-05	1.4042E-09	250	1500	2	69.63	83.95	364.49
331	1978	C3H7Br	1-bromopropane	106-94-5	-10.4327	3.6517E-01	-6.9389E-05	4.8991E-09	250	1500	2	76.60	92.40	397.72
332	1979	C3H7Br	2-bromopropane	75-26-3	-11.2749	3.7857E-01	-7.8266E-05	7.4515E-09	250	1500	2	78.59	94.84	405.64
333	1986	C3H7Cl	1-chloropropane	540-54-5	-10.8264	3.3577E-01	-8.2365E-05	1.1485E-08	250	1500	2	68.15	82.26	346.26
334	1987	C3H7Cl	2-chloropropane	75-29-6	-11.5159	3.4690E-01	-9.1333E-05	1.4224E-08	250	1500	2	69.72	84.17	351.34
335	2020	C3H7F	1-fluoropropane	460-13-9	-12.5834	3.5917E-01	-1.2152E-04	2.4952E-08	250	1500	2	70.00	84.36	336.95
336	2021	C3H7F	2-fluoropropane	420-26-8	-12.9927	3.7174E-01	-1.2806E-04	2.6690E-08	250	1500	2	72.36	87.17	346.57
337	2025	C3H7I	1-iodopropane	107-08-4	-8.3635	3.6992E-01	-4.3840E-05	-4.8660E-09	250	1500	2	81.30	97.90	431.45
338	2026	C3H7I	2-iodopropane	75-30-9	-9.3954	3.8202E-01	-5.3819E-05	-1.8675E-09	250	1500	2	82.72	99.67	436.25
339	2030	C3H7N	allylamine	107-11-9	-8.7402	2.7223E-01	-6.6126E-05	9.0654E-09	250	1500	2	55.32	66.79	281.41
340	2031	C3H7N	propyleneimine	75-55-8	-8.9490	2.9761E-01	-6.2754E-05	6.3186E-09	250	1500	2	61.63	74.37	317.60
341	2036	C3H7NO	N,N-dimethylformamide	68-12-2	-3.6560	2.5245E-01	-9.0430E-06	-1.0930E-08	250	1500	2	58.72	70.52	317.78
342	2037	C3H7NO	N-methylacetamide	79-16-3	-0.4264	2.1154E-01	1.5616E-05	-1.7353E-08	250	1500	2	53.16	63.57	293.45
343	2038	C3H7NO	N-ethylformamide	627-45-2	-3.2079	2.2151E-01	-7.9347E-06	-9.5906E-09	250	1500	2	51.52	61.88	278.83
344	2045	C3H7NO2	1-nitropropane	108-03-2	-5.8065	2.7743E-01	-2.7849E-05	-5.4989E-09	250	1500	2	61.72	74.29	329.12
345	2046	C3H7NO2	2-nitropropane	79-46-9	-6.5055	2.8949E-01	-3.3873E-05	-3.9684E-09	250	1500	2	63.69	76.69	338.12
346	2094	C3H8	propane	74-98-6	-9.1536	3.5910E-01	-1.8324E-04	5.4096E-08	193	1500	1,2	53.72	83.06	299.79
347	2129	C3H8O	propyl alcohol	71-23-8	-15.6072	3.2718E-01	-6.8721E-05	5.9445E-09	200	1500	1,2	47.13	75.99	340.60
348	2130	C3H8O	isopropyl alcohol	67-63-0	-10.1701	3.0345E-01	-3.7761E-05	-5.7427E-09	200	1500	1,2	48.96	76.79	340.66
349	2131	C3H8O	methyl ethyl ether	540-67-2	-12.1871	3.4783E-01	-1.1210E-04	2.2042E-08	250	1500	2	68.11	82.14	331.74
350	2138	C3H8O2	2-methoxyethanol	109-86-4	-6.7271	2.5556E-01	-4.1248E-05	6.9858E-10	250	1500	2	54.60	65.82	286.16
351	2139	C3H8O2	methylal	109-87-5	-12.2843	3.6478E-01	-9.9815E-05	1.6386E-08	250	1500	2	72.93	88.04	365.60
352	2140	C3H8O2	1,2-propanediol (propylene glycol)	1,2-55-6	-4.8283	2.7110E-01	-1.8508E-05	-8.5541E-09	250	1500	2	61.66	74.13	331.31
353	2141	C3H8O2	1,3-propanediol	504-63-2	-3.0449	2.4043E-01	-4.5099E-06	-1.1884E-08	250	1500	2	56.60	67.92	307.35
354	2143	C3H8O2	(R)-(-)-1,2-propanediol	4254-14-2	-3.7219	2.4339E-01	-1.0604E-05	-9.8583E-09	250	1500	2	56.31	67.64	304.23
355	2144	C3H8O2	(S)-(+)-1,2-propanediol	4254-15-3	-3.7219	2.4339E-01	-1.0604E-05	-9.8583E-09	250	1500	2	56.31	67.64	304.23
356	2148	C3H8O3	glycerol	56-81-5	-0.2082	1.9231E-01	1.5657E-05	-1.6280E-08	250	1500	2	48.59	58.09	268.54
357	2156	C3H8O4S	ethyl methyl sulfate	814-40-4	1.9829	2.2292E-01	3.5279E-05	-2.4662E-08	250	1500	2	59.53	70.93	332.51
358	2158	C3H8S	propyl mercaptan	107-03-9	-8.8398	3.0077E-01	-6.0518E-05	5.2958E-09	250	1500	2	62.65	75.60	324.03
359	2159	C3H8S	isopropyl mercaptan	75-33-2	-9.7779	3.1394E-01	-7.1294E-05	8.5826E-09	250	1500	2	64.39	77.71	329.69
360	2160	C3H8S	methyl ethyl sulfide	624-89-5	-8.9026	2.9970E-01	-6.1629E-05	5.7749E-09	250	1500	2	62.26	75.13	321.47
361	2161	C3H8S2	bis(methylthio)methane	1618-26-4	-4.7617	2.6284E-01	-1.8752E-05	-7.9993E-09	250	1500	2	59.65	71.73	320.31
362	2200	C3H9N	propylamine	107-10-8	-8.9425	2.7361E-01	-6.9297E-05	1.0182E-08	250	1500	2	55.29	66.75	279.93
363	2201	C3H9N	isopropylamine	75-31-0	-10.9843	3.2207E-01	-9.1514E-05	1.5750E-08	250	1500	2	64.06	77.32	319.37
364	2202	C3H9N	methyl ethylamine	624-78-2	-10.2285	3.0120E-01	-8.4453E-05	1.4301E-08	250	1500	2	60.02	72.44	299.81
365	2203	C3H9N	trimethylamine	75-50-3	-11.0876	3.1619E-01	-1.0340E-04	2.0606E-08	250	1500	2	61.82	74.54	300.10
366	2204	C3H9NO	1-amino-2-propanol	78-96-6	-3.9705	2.0237E-01	-1.7540E-05	-5.0274E-09	250	1500	2	45.45	54.67	243.15
367	2205	C3H9NO	3-amino-1-propanol	156-87-6	-2.7495	1.9424E-01	-6.3558E-06	-8.6269E-09	250	1500	2	45.28	54.37	245.20
368	2206	C3H9NO	methyl ethanolamine	109-83-1	-3.9302	2.2861E-01	-1.4199E-05	-7.7252E-09	250	1500	2	52.22	62.76	280.97
369	2207	C3H9NO	2-amino-1-propanol, (±)	6168-72-5	-3.4789	2.0421E-01	-1.2368E-05	-7.0149E-09	250	1500	2	46.69	56.12	251.33
370	2210	C3H9NO	s(+)-2-amino-1-propanol	2749-11-3	-3.4789	2.0421E-01	-1.2368E-05	-7.0149E-09	250	1500	2	46.69	56.12	251.33
371	2211	C3H9NO	(R)-(-)-1-amino-2-propanol	2799-16-8	-3.4789	2.0421E-01	-1.2368E-05	-7.0149E-09	250	1500	2	46.69	56.12	251.33
372	2212	C3H9NO	(S)-(+)-1-amino-2-propanol	2799-17-9	-3.4789	2.0421E-01	-1.2368E-05	-7.0149E-09	250	1500	2	46.69	56.12	251.33
373	2213	C3H9NO	(R)-(-)-2-amino-1-propanol	35320-23-1	-3.4789	2.0421E-01	-1.2368E-05	-7.0149E-09	250	1500	2	46.69	56.12	251.33
374	2214	C3H9NO	2-aminopropanol	78-91-1	-3.4789	2.0421E-01	-1.2368E-05	-7.0149E-09	250	1500	2	46.69	56.12	251.33
375	2241	C3H9O4P	trimethyl phosphate	512-56-1	2.1842	3.2356E-01	4.6072E-05	-3.4088E-08	250	1500	2	85.42	101.85	476.14
376	2255	C3H10N2	1,2-propanediamine	78-90-0	-5.6591	2.4165E-01	-3.0810E-05	-2.3772E-09	250	1500	2	52.79	63.59	279.46
377	2257	C3H10N2	1,2-propanediamine, (±)	10424-38-1	-5.6591	2.4165E-01	-3.0810E-05	-2.3772E-09	250	1500	2	52.79	63.59	279.46
378	2258	C3H10N2	1,3-propanediamine	109-76-2	-5.6591	2.4165E-01	-3.0810E-05	-2.3772E-09	250	1500	2	52.79	63.59	279.46
379	2268	C3H10Si	trimethyl silane	993-07-7	-10.9824	3.1316E-01	-1.0281E-04	2.0561E-08	250	1500	2	61.20	73.79	296.83
380	2317	C4Cl4S	tetrachlorothiophene	6012-97-1	1.0869	2.3518E-01	2.9701E-05	-2.3507E-08	250	1500	2	61.37	73.22	341.35
381	2318	C4Cl6	hexachloro-1,3-butadiene	87-68-3	0.5852	2.5226E-01	2.7371E-05	-2.3694E-08	250	1500	2	64.99	77.60	360.60
382	2334	C4F8	octafluoro-2-butene	360-89-4	-16.7325	4.8949E-01	-1.7909E-04	3.9109E-08	250	1500	2	95.06	114.33	446.55
383	2335	C4F8	perfluoroisobutene	382-21-8	-16.7325	4.8949E-01	-1.7909E-04	3.9109E-08	250	1500	2	95.06	114.33	446.55
384	2336	C4F8	octafluorocyclobutane	115-25-3	-17.1376	5.0405E-01	-1.8595E-04	4.0854E-08	250	1500	2	97.89	117.70	458.42
385	2337	C4F8	1,1,2,3,3,4,4,4-octafluoro-1-butene	357-26-6	-16.7325	4.8949E-01	-1.7909E-04	3.9109E-08	250	1500	2	95.06	114.33	446.55
386	2338.1	C4F8O	pentafluoroethyl trifluorovinyl ether	10493-43-3	-10.3486	4.5594E-01	-1.6819E-04	4.1235E-08	100	1500	2	33.61	111.73	434.31
387	2344	C4F10	decafluorobutane	355-25-9	-16.2642	4.7991E-01	-1.7785E-04	3.9201E-08	250	1500	2	93.21	112.05	435.74
388	2345	C4F10	perfluoroisobutane	354-92-7	-16.2642	4.7991E-01	-1.7785E-04	3.9201E-08	250	1500	2	93.21	112.05	435.74
389	2374	C4H2	biacetylene	460-12-8	-11.7223	3.4670E-01	-9.5954E-05	1.5985E-08	250	1500	2	69.21	83.54	346.39
390	2420.1	C4H2N2	maleonitrile	928-53-0	-6.0292	2.2031E-01	-4.1719E-05	8.4741E-09	100	1500	2	15.59	56.17	259.17
391	2430	C4H2O3	maleic anhydride	108-31-6	-0.4242	2.9125E-01	2.2828E-05	-2.4351E-08	250	1500	2	73.44	87.80	405.63
392	2510	C4H4	vinylacetylene	689-97-4	-11.8158	3.4006E-01	-1.0362E-04	1.9282E-08	250	1500	2	67.02	80.87	330.21
393	2562	C4H4N2	succinonitrile	110-61-2	1.4034	1.7723E-01	2.6774E-05	-1.9184E-0						

Table 1 Viscosity of Gas - Organic Compounds

NO	ID	FORMULA	NAME	CAS No	$\eta_{\text{gas}} = A + B T + C T^2 + D T^3$				$(\eta_{\text{gas}} - \text{micropoise, T - K})$					
					A	B	C	D	TMIN	TMAX	code	$\eta_{\text{gas}}@TMIN$	$\eta_{\text{gas}}@25\text{C}$	$\eta_{\text{gas}}@TMAX$
401	2635	C4H5Cl	4-chloro-1,2-butadiene	25790-55-0	-9.6587	3.1730E-01	-6.8637E-05	7.3872E-09	250	1500	2	65.49	79.04	336.79
402	2636	C4H5Cl	1-chloro-1,3-butadiene	627-22-5	-9.6587	3.1730E-01	-6.8637E-05	7.3872E-09	250	1500	2	65.49	79.04	336.79
403	2695	C4H5N	trans-crotonitrile	627-26-9	-6.9778	2.9627E-01	-3.8218E-05	-2.7512E-09	250	1500	2	64.66	77.89	342.16
404	2696	C4H5N	cis-crotonitrile	1190-76-7	-7.8897	3.0531E-01	-4.7499E-05	1.7294E-10	250	1500	2	65.47	78.92	343.79
405	2697	C4H5N	methacrylonitrile	126-98-7	-8.2824	3.0139E-01	-5.2992E-05	2.4439E-09	250	1500	2	63.79	76.93	332.82
406	2698	C4H5N	vinylacetonitrile	109-75-1	-5.7877	2.4302E-01	-3.2073E-05	-1.9889E-09	250	1500	2	52.93	63.77	279.87
407	2699	C4H5N	2-butenenitrile	4786-20-3	-6.1452	2.4361E-01	-3.6116E-05	-5.2491E-10	250	1500	2	52.49	63.26	276.24
408	2701	C4H5N	pyrrole	109-97-7	-3.8571	2.4641E-01	-1.1594E-05	-9.6709E-09	250	1500	2	56.87	68.32	307.04
409	2713	C4H5NO2	methyl cyanoacetate	105-34-0	-1.5921	2.0793E-01	5.4504E-06	-1.3600E-08	250	1500	2	50.52	60.53	276.67
410	2753	C4H6	cyclobutene	822-35-5	-12.3899	3.5481E-01	-1.1111E-04	2.1257E-08	250	1500	2	69.70	84.08	341.57
411	2754	C4H6	dimethylacetylene	503-17-3	-10.3153	3.1026E-01	-8.2013E-05	1.2845E-08	250	1500	2	62.32	75.24	313.89
412	2755	C4H6	ethylacetylene	107-00-6	-11.5257	3.1047E-01	-8.1240E-05	9.8882E-09	213	1500	1,2	51.01	74.08	304.76
413	2756	C4H6	1,2-butadiene	590-19-2	-11.3352	3.2424E-01	-1.0235E-04	1.9735E-08	250	1500	2	63.64	76.76	311.33
414	2757	C4H6	butadiene (1,3 butadiene)	106-99-0	10.2673	2.6824E-01	-4.0929E-05	-1.6194E-10	250	1500	1,2	74.77	86.60	319.99
415	2806	C4H6Cl2	1,3-dichloro-trans-2-butene	7415-31-8	-5.3606	2.8177E-01	-2.2697E-05	-7.6298E-09	250	1500	2	63.55	76.43	340.48
416	2807	C4H6Cl2	1,4-dichloro-cis-2-butene	1476-11-5	-3.9298	2.5170E-01	-1.1745E-05	-9.9136E-09	250	1500	2	58.11	69.81	313.74
417	2808	C4H6Cl2	1,4-dichloro-trans-2-butene	1170-57-6	-4.0299	2.5811E-01	-1.2044E-05	-1.0166E-08	250	1500	2	59.59	71.59	321.73
418	2809	C4H6Cl2	3,4-dichloro-1-butene	760-23-6	-4.0703	2.6070E-01	-1.2165E-05	-1.0268E-08	250	1500	2	60.18	72.30	324.95
419	2810	C4H6Cl2	3-chloro-2-(chloromethyl)-1-propene	1871-57-4	-4.0521	2.5953E-01	-1.2110E-05	-1.0222E-08	250	1500	2	59.91	71.98	323.50
420	2811	C4H6Cl2	1,3-dichloro-1-butene	52497-07-1	-4.0521	2.5953E-01	-1.2110E-05	-1.0222E-08	250	1500	2	59.91	71.98	323.50
421	2812	C4H6Cl2	2,3-dichloro-1-butene	7013-11-8	-4.0521	2.5953E-01	-1.2110E-05	-1.0222E-08	250	1500	2	59.91	71.98	323.50
422	2813	C4H6Cl2	1,1-dichloro-2-butene	56800-09-0	-4.0521	2.5953E-01	-1.2110E-05	-1.0222E-08	250	1500	2	59.91	71.98	323.50
423	2814	C4H6Cl2	1,2-dichloro-2-butene	13602-13-6	-4.0521	2.5953E-01	-1.2110E-05	-1.0222E-08	250	1500	2	59.91	71.98	323.50
424	2815	C4H6Cl2	cis-1,3-dichloro-2-butene	10075-38-4	-4.0521	2.5953E-01	-1.2110E-05	-1.0222E-08	250	1500	2	59.91	71.98	323.50
425	2816	C4H6Cl2	cis-2,3-dichloro-2-butene	1587-26-4	-4.0521	2.5953E-01	-1.2110E-05	-1.0222E-08	250	1500	2	59.91	71.98	323.50
426	2817	C4H6Cl2	trans-2,3-dichloro-2-butene	1587-29-7	-4.0521	2.5953E-01	-1.2110E-05	-1.0222E-08	250	1500	2	59.91	71.98	323.50
427	2818	C4H6Cl2	1,1-dichloro-2-methyl-1-propene	6065-93-6	-4.0521	2.5953E-01	-1.2110E-05	-1.0222E-08	250	1500	2	59.91	71.98	323.50
428	2819	C4H6Cl2	3,3-dichloro-2-methyl-1-propene	22227-75-4	-4.0521	2.5953E-01	-1.2110E-05	-1.0222E-08	250	1500	2	59.91	71.98	323.50
429	2820	C4H6Cl2	1,4-dichloro-2-butene	764-41-0	-4.0521	2.5953E-01	-1.2110E-05	-1.0222E-08	250	1500	2	59.91	71.98	323.50
430	2821	C4H6Cl2	1,3-dichloro-2-butene, cis and trans	926-57-8	-4.0521	2.5953E-01	-1.2110E-05	-1.0222E-08	250	1500	2	59.91	71.98	323.50
431	2822	C4H6Cl2	dichlorobutene	11069-19-5	-4.0521	2.5953E-01	-1.2110E-05	-1.0222E-08	250	1500	2	59.91	71.98	323.50
432	2856	C4H6Cl4	1,1,1,2-tetrachlorobutane	39966-95-5	-1.9132	2.6859E-01	8.2860E-06	-1.8007E-08	250	1500	2	65.47	78.43	358.84
433	2857	C4H6Cl4	1,1,2,3-tetrachlorobutane	79630-70-9	-1.9132	2.6859E-01	8.2860E-06	-1.8007E-08	250	1500	2	65.47	78.43	358.84
434	2858	C4H6Cl4	1,2,3,3-tetrachlorobutane	13138-51-7	-1.9132	2.6859E-01	8.2860E-06	-1.8007E-08	250	1500	2	65.47	78.43	358.84
435	2859	C4H6Cl4	1,1,1,2-tetrachloro-2-methylpropane	7086-07-9	-1.9132	2.6859E-01	8.2860E-06	-1.8007E-08	250	1500	2	65.47	78.43	358.84
436	2860	C4H6Cl4	1,1,2,3-tetrachloro-2-methylpropane	18963-01-4	-1.9132	2.6859E-01	8.2860E-06	-1.8007E-08	250	1500	2	65.47	78.43	358.84
437	2861	C4H6Cl4	1,2,3-trichloro-2-(chloromethyl)propane	18963-00-3	-1.9132	2.6859E-01	8.2860E-06	-1.8007E-08	250	1500	2	65.47	78.43	358.84
438	2862	C4H6Cl4	1,2,3,4-tetrachlorobutane	3405-32-1	-1.9132	2.6859E-01	8.2860E-06	-1.8007E-08	250	1500	2	65.47	78.43	358.84
439	2939-1	C4H6O	cis-crotonaldehyde	15798-64-8	-10.0079	2.7778E-01	-3.2652E-05	-2.6513E-10	100	1500	2	17.44	69.90	332.30
440	2940	C4H6O	trans-crotonaldehyde	123-73-9	-7.8928	3.0984E-01	-4.6844E-05	-3.2988E-10	250	1500	2	66.63	80.31	350.35
441	2941	C4H6O	methacrolein	78-85-3	-9.8282	3.2789E-01	-6.8688E-05	6.7924E-09	250	1500	2	67.96	82.00	350.38
442	2942	C4H6O	2,5-dihydrofuran	1708-29-8	-9.1843	3.1913E-01	-6.1538E-05	4.6174E-09	250	1500	2	66.82	80.62	346.63
443	2944	C4H6O	divinyl ether	109-93-3	-11.1795	3.2438E-01	-9.5529E-05	1.7136E-08	250	1500	2	64.21	77.50	318.29
444	2946	C4H6O	3-buten-2-one	78-94-4	-7.7889	2.8460E-01	-4.9632E-05	2.1556E-09	250	1500	2	60.29	72.71	314.72
445	2956	C4H6O	crotonaldehyde	4170-30-3	-7.9429	2.8500E-01	-5.1534E-05	2.8428E-09	250	1500	2	60.13	72.52	313.20
446	2958	C4H6O	2-methyl-1-propen-1-one	598-26-5	-7.7889	2.8460E-01	-4.9632E-05	2.1556E-09	250	1500	2	60.29	72.71	314.72
447	2959	C4H6O	methyl vinyl ketone	---	-7.7889	2.8460E-01	-4.9632E-05	2.1556E-09	250	1500	2	60.29	72.71	314.72
448	2963	C4H6O2	2-butene-1,4-diol	110-65-6	-1.1250	1.8067E-01	6.9677E-06	-1.2602E-08	250	1500	2	44.28	53.03	243.02
449	2965	C4H6O2	gamma-butyrolactone	96-48-0	0.4424	2.2821E-01	2.4079E-05	-2.1203E-08	250	1500	2	58.67	70.06	325.37
450	2966	C4H6O2	cis-2-butenoic acid	503-64-0	-3.2473	2.2423E-01	-8.0323E-06	-9.7085E-09	250	1500	2	52.16	62.64	282.26
451	2967	C4H6O2	trans-2-butenoic acid	107-93-7	-2.4785	2.1909E-01	-1.3887E-06	-1.1801E-08	250	1500	2	52.02	62.41	283.20
452	2968	C4H6O2	vinylacetic acid	625-38-7	-2.4635	2.3065E-01	-1.3990E-07	-1.2895E-08	250	1500	2	54.99	65.95	299.68
453	2969	C4H6O2	methacrylic acid	79-41-4	-3.5514	2.3471E-01	-9.8624E-06	-9.6381E-09	250	1500	2	54.36	65.30	293.80
454	2970	C4H6O2	methyl acrylate	96-33-3	-8.6721	2.9507E-01	-5.9370E-05	5.1954E-09	250	1500	2	61.47	74.16	317.88
455	2971	C4H6O2	vinyl acetate	108-05-4	-9.3254	3.0544E-01	-6.6485E-05	7.2670E-09	250	1500	2	62.99	76.02	323.76
456	2972	C4H6O2	allyl formate	1838-59-1	-8.9545	2.9874E-01	-6.2582E-05	6.1886E-09	250	1500	2	61.92	74.71	319.23
457	2978	C4H6O2	cyclopropanecarboxylic acid	1759-53-1	-2.9233	2.2612E-01	-4.7949E-06	-1.0978E-08	250	1500	2	53.14	63.78	288.42
458	2981	C4H6O2	crotonic acid	3724-65-0	-2.9233	2.2612E-01	-4.7949E-06	-1.0978E-08	250	1500	2	53.14	63.78	288.42
459	2996	C4H6O3	acetic anhydride	108-24-7	-6.6243	2.5774E-01	-6.5266E-05	-1.5012E-11	250	1500	2	55.33	66.70	290.69
460	3006	C4H6O4	succinic acid	110-15-6	2.4406	1.6276E-01	3.2808E-05	-2.0307E-08	250	1500	2	44.86	53.35	251.86
461	3023	C4H6O5	diglycolic acid	110-99-6	2.7022	1.5211E-01	3.3521E-05	-1.9891E-08	250	1500	2	42.51	50.51	239.15
462	3024	C4H6O5	malic acid	6915-15-7	1.3980	1.3883E-01	2.3158E-05	-1.5750E-08	250	1500	2	37.31	44.43	208.59
463	3033	C4H6O6	tartaric acid	87-69-4	2.2033	1.1387E-01	2.6291E-05	-1.5268E-08	250	1500	2	32.08	38.09	180.64
464	3047	C4H7Br	cis-1-bromo-1-butene	31849-78-2	-9.2212	3.3577E-01	-5.8962E-05	2.6954E-09	250	1500	2	71.08	85.72	370.86
465	3048	C4H7Br	trans-1-bromo-1-butene	32620-08-9	-8.4956	3.2774E-01	-5.1305E-05	3.0327E-10	250	1500	2	70.24	84.67	368.70
466	3049	C4H7Br	2-bromo-1-butene	23074-36-4	-9.5496	3.3954E-01	-6.2525E-05	3.8089E-09	250	1500	2	71.49	86.23	371.93
467	3050	C4H7Br	3-bromo-1-butene	22037-73-6	-7.5713	3.2199E-01	-4.1399E-05	-3.0402E-09	250	1500	2	70.29	84.67	372.00
468	3051	C4H7Br	4-bromo-1-butene	5162-44-7	-8.2288	3.2359E-01	-4.8753E-05	-4.0737E-10	250	1500	2	69.62	83.90	366.09
469	3052	C4H7Br	1-bromo-cis-2-butene	39616-19-8	-7.6987	3.1920E-01	-4.3226E-05	-2.2054E-09	250	1500	2	69.36	83.57	366.39
470	3053	C4H7Br	1-bromo-trans-2-butene	29576-14-5	-7.6987	3.1920E-01	-4.3226E-05	-2.2054E-09	250	1500	2	69.36	83.57	366.39
471	3054	C4H7Br	2-bromo-cis-2-butene	3017-68-3	-9.0670	3.3533E-01	-5.7091E-05	2.0222E-09	250	1500	2	71.23	85.89	372.30
472	3055	C4H7Br	2-bromo-trans-2-butene	3017-71-8	-8.2903	3								



Table 1 Viscosity of Gas - Organic Compounds

NO	ID	FORMULA	NAME	CAS No	$\eta_{gas} = A + BT + CT^2 + DT^3$				$(\eta_{gas} - \text{micropoise, T - K})$					
					A	B	C	D	TMIN	TMAX	code	$\eta_{gas}@TMIN$	$\eta_{gas}@25\text{C}$	$\eta_{gas}@TMAX$
481	3087	C4H7Br3	1,2,2-tribromobutane	3675-69-2	-0.0642	2.6857E-01	2.3693E-05	-2.3364E-08	250	1500	2	68.19	81.50	377.24
482	3088	C4H7Br3	1,2,3-tribromobutane	632-05-3	0.1004	2.6442E-01	2.4637E-05	-2.3453E-08	250	1500	2	67.38	80.51	373.01
483	3089	C4H7Br3	1,2,4-tribromobutane	38300-67-3	-0.5552	2.6507E-01	1.9396E-05	-2.1685E-08	250	1500	2	66.59	79.63	367.51
484	3090	C4H7Br3	1,3,3-tribromobutane	62127-46-2	-2.3465	2.8951E-01	6.4557E-06	-1.8537E-08	250	1500	2	70.14	84.05	383.88
485	3091	C4H7Br3	2,3,3-tribromobutane	62127-47-3	-0.3539	2.7656E-01	2.2074E-05	-2.3259E-08	250	1500	2	69.80	83.45	385.65
486	3092	C4H7Br3	1,1,1-tribromo-2-methylpropane	---	0.1589	2.7191E-01	2.5778E-05	-2.4269E-08	250	1500	2	69.37	82.88	384.11
487	3093	C4H7Br3	1,1,2-tribromo-2-methylpropane	15331-16-5	1.4594	2.6022E-01	3.4816E-05	-2.6666E-08	250	1500	2	68.27	81.43	380.12
488	3094	C4H7Br3	1,1,3-tribromo-2-methylpropane	---	-0.2437	2.6754E-01	2.2154E-05	-2.2776E-08	250	1500	2	67.67	80.89	374.04
489	3095	C4H7Br3	1,2,3-tribromo-2-methylpropane	631-28-7	0.3999	2.6437E-01	2.7008E-05	-2.4261E-08	250	1500	2	67.80	80.98	375.85
490	3096	C4H7Br3	1,3-dibromo-2-(bromomethyl)propane	62127-48-4	-0.1889	2.6174E-01	2.2074E-05	-2.2421E-08	250	1500	2	66.28	79.22	366.42
491	3098	C4H7Cl	cis-1-chloro-1-butene	7611-86-1	-9.4264	3.0612E-01	-6.7846E-05	7.7391E-09	250	1500	2	62.98	76.02	323.22
492	3099	C4H7Cl	trans-1-chloro-1-butene	7611-87-2	-9.1109	3.0223E-01	-6.4063E-05	6.5423E-09	250	1500	2	62.55	75.48	322.18
493	3100	C4H7Cl	2-chloro-1-butene	2211-70-3	-9.6797	3.0927E-01	-7.0982E-05	8.7369E-09	250	1500	2	63.34	76.45	324.00
494	3101	C4H7Cl	3-chloro-1-butene	563-52-0	-9.4325	3.0950E-01	-6.7114E-05	7.2673E-09	250	1500	2	63.86	77.07	328.34
495	3102	C4H7Cl	4-chloro-1-butene	927-73-1	-8.7508	2.9689E-01	-6.0089E-05	5.3599E-09	250	1500	2	61.80	74.57	319.47
496	3103	C4H7Cl	1-chloro-cis-2-butene	4628-21-1	-7.9670	2.8887E-01	-5.1157E-05	2.4794E-09	250	1500	2	61.09	73.68	318.60
497	3104	C4H7Cl	1-chloro-trans-2-butene	4894-61-5	-7.9017	2.8813E-01	-5.0452E-05	2.2587E-09	250	1500	2	61.01	73.58	318.40
498	3105	C4H7Cl	2-chloro-cis-2-butene	2211-69-0	-9.0625	3.0261E-01	-6.3277E-05	6.2252E-09	250	1500	2	62.73	75.70	323.49
499	3106	C4H7Cl	2-chloro-trans-2-butene	2211-68-9	-9.3561	3.0619E-01	-6.6763E-05	7.3275E-09	250	1500	2	63.13	76.19	324.45
500	3107	C4H7Cl	1-chloro-2-methyl-1-propene	513-37-1	-8.9707	3.0150E-01	-6.2205E-05	5.8867E-09	250	1500	2	62.61	75.55	323.19
501	3108	C4H7Cl	3-chloro-2-methyl-1-propene	513-47-3	-8.7349	2.9768E-01	-5.9702E-05	5.1691E-09	250	1500	2	62.03	74.85	320.89
502	3110	C4H7Cl	1-chloro-2-butene	591-97-9	-8.9506	3.0076E-01	-6.2081E-05	5.8832E-09	250	1500	2	62.45	75.36	322.36
503	3111	C4H7Cl	2-chloro-2-butene, cis and trans	4461-41-0	-8.9506	3.0076E-01	-6.2081E-05	5.8832E-09	250	1500	2	62.45	75.36	322.36
504	3156	C4H7Cl3	1,1,1-trichlorobutane	13279-85-1	-5.3906	2.7529E-01	-2.3750E-05	-6.8792E-09	250	1500	2	61.84	74.39	330.90
505	3157	C4H7Cl3	1,1,2-trichlorobutane	---	-4.6441	2.6615E-01	-1.7211E-05	-8.7466E-09	250	1500	2	60.68	72.95	326.34
506	3158	C4H7Cl3	1,1,3-trichlorobutane	13279-87-3	-4.6441	2.6615E-01	-1.7211E-05	-8.7466E-09	250	1500	2	60.68	72.95	326.34
507	3159	C4H7Cl3	1,1,4-trichlorobutane	---	-4.8093	2.6357E-01	-1.9150E-05	-7.8958E-09	250	1500	2	59.76	71.86	320.81
508	3160	C4H7Cl3	1,2,2-trichlorobutane	---	-2.9379	2.5146E-01	-2.4442E-06	-1.3241E-08	250	1500	2	59.57	71.47	324.06
509	3161	C4H7Cl3	1,2,3-trichlorobutane	18338-40-4	-3.2416	2.5259E-01	-5.1340E-06	-1.2343E-08	250	1500	2	59.39	71.29	322.44
510	3162	C4H7Cl3	1,2,4-trichlorobutane	1790-22-3	-3.3768	2.4965E-01	-6.6892E-06	-1.1620E-08	250	1500	2	58.44	70.15	316.83
511	3163	C4H7Cl3	1,3,3-trichlorobutane	---	-4.4154	2.6566E-01	-1.5004E-05	-9.5193E-09	250	1500	2	60.91	73.20	328.18
512	3164	C4H7Cl3	2,3,3-trichlorobutane	10403-60-8	-4.5146	2.7090E-01	-1.5419E-05	-9.6643E-09	250	1500	2	62.10	74.63	334.53
513	3165	C4H7Cl3	1,1,1-trichloro-2-methylpropane	---	-4.6037	2.7177E-01	-1.6202E-05	-9.4292E-09	250	1500	2	62.18	74.73	334.78
514	3166	C4H7Cl3	1,1,2-trichloro-2-methylpropane	29559-52-2	-4.3987	2.6977E-01	-1.4403E-05	-9.9686E-09	250	1500	2	61.99	74.49	334.21
515	3167	C4H7Cl3	1,1,3-trichloro-2-methylpropane	62108-85-0	-5.0173	2.6984E-01	-2.0553E-05	-7.7383E-09	250	1500	2	61.04	73.40	327.38
516	3168	C4H7Cl3	1,2,3-trichloro-2-methylpropane	1871-58-5	-3.1448	2.5342E-01	-4.1548E-06	-1.2740E-08	250	1500	2	59.75	71.71	324.64
517	3169	C4H7Cl3	1,3-dichloro-2-(chloromethyl)-propane	---	-6.0720	2.7629E-01	-3.0837E-05	-4.3367E-09	250	1500	2	61.01	73.45	324.34
518	3177	C4H7F	cis-1-fluoro-1-butene	66675-34-1	-11.6114	3.3451E-01	-1.0146E-04	1.8790E-08	250	1500	2	65.97	79.60	325.28
519	3178	C4H7F	trans-1-fluoro-1-butene	66675-35-2	-11.6114	3.3451E-01	-1.0146E-04	1.8790E-08	250	1500	2	65.97	79.60	325.28
520	3179	C4H7F	2-fluoro-1-butene	430-44-4	-11.4038	3.3055E-01	-9.7722E-05	1.7605E-08	250	1500	2	65.40	78.93	323.97
521	3180	C4H7F	3-fluoro-1-butene	---	-12.0990	3.4630E-01	-1.0882E-04	2.0888E-08	250	1500	2	68.00	82.03	333.01
522	3181	C4H7F	4-fluoro-1-butene	---	-11.8912	3.3983E-01	-1.0805E-04	2.0977E-08	250	1500	2	66.64	80.38	325.55
523	3182	C4H7F	cis-1-fluoro-2-butene	---	-11.6114	3.3451E-01	-1.0146E-04	1.8790E-08	250	1500	2	65.97	79.60	325.28
524	3183	C4H7F	trans-1-fluoro-2-butene	---	-11.6114	3.3451E-01	-1.0146E-04	1.8790E-08	250	1500	2	65.97	79.60	325.28
525	3184	C4H7F	cis-2-fluoro-2-butene	66675-38-5	-11.2844	3.2920E-01	-9.5101E-05	1.6691E-08	250	1500	2	65.33	78.86	324.87
526	3185	C4H7F	trans-2-fluoro-2-butene	66675-39-6	-11.2844	3.2920E-01	-9.5101E-05	1.6691E-08	250	1500	2	65.33	78.86	324.87
527	3186	C4H7F	1-fluoro-2-methyl-1-propene	---	-11.0327	3.2506E-01	-9.0993E-05	1.5377E-08	250	1500	2	64.78	78.20	323.72
528	3187	C4H7F	3-fluoro-2-methyl-1-propene	---	-11.0385	3.2434E-01	-9.1554E-05	1.5632E-08	250	1500	2	64.57	77.94	322.23
529	3192	C4H7F3	1,1,1-trifluorobutane	460-34-4	-13.1149	3.7404E-01	-1.2515E-04	2.5451E-08	250	1500	2	72.97	87.96	352.26
530	3193	C4H7F3	1,1,2-trifluorobutane	---	-13.2096	3.7664E-01	-1.2452E-04	2.5058E-08	250	1500	2	73.56	88.68	356.16
531	3194	C4H7F3	1,1,3-trifluorobutane	---	-13.2096	3.7664E-01	-1.2452E-04	2.5058E-08	250	1500	2	73.56	88.68	356.16
532	3195	C4H7F3	1,1,4-trifluorobutane	---	-12.9727	3.6994E-01	-1.2338E-04	2.5021E-08	250	1500	2	72.19	87.02	348.78
533	3196	C4H7F3	1,2,2-trifluorobutane	---	-13.3051	3.7936E-01	-1.2539E-04	2.5229E-08	250	1500	2	74.09	89.32	358.75
534	3197	C4H7F3	1,2,3-trifluorobutane	---	-13.2096	3.7664E-01	-1.2452E-04	2.5058E-08	250	1500	2	73.56	88.68	356.16
535	3198	C4H7F3	1,2,4-trifluorobutane	---	-12.9727	3.6994E-01	-1.2338E-04	2.5021E-08	250	1500	2	72.19	87.02	348.78
536	3199	C4H7F3	1,3,3-trifluorobutane	---	-13.3051	3.7936E-01	-1.2539E-04	2.5229E-08	250	1500	2	74.09	89.32	358.75
537	3200	C4H7F3	2,3,3-trifluorobutane	---	-13.5369	3.8602E-01	-1.2637E-04	2.5209E-08	250	1500	2	75.46	90.99	366.24
538	3201	C4H7F3	1,1,1-trifluoro-2-methylpropane	---	-13.5369	3.8602E-01	-1.2637E-04	2.5209E-08	250	1500	2	75.46	90.99	366.24
539	3202	C4H7F3	1,1,2-trifluoro-2-methylpropane	---	-13.5369	3.8602E-01	-1.2637E-04	2.5209E-08	250	1500	2	75.46	90.99	366.24
540	3203	C4H7F3	1,1,3-trifluoro-2-methylpropane	---	-13.2096	3.7664E-01	-1.2452E-04	2.5058E-08	250	1500	2	73.56	88.68	356.16
541	3204	C4H7F3	1,3-difluoro-2-(fluoromethyl)-propane	---	-12.9727	3.6994E-01	-1.2338E-04	2.5021E-08	250	1500	2	72.19	87.02	348.78
542	3209	C4H7I	cis-1-iodo-1-butene	54068-75-6	-2.3150	2.9603E-01	7.3387E-06	-1.9215E-08	250	1500	2	71.85	86.09	393.40
543	3210	C4H7I	trans-1-iodo-1-butene	62154-92-1	-6.0575	3.3183E-01	-2.4136E-05	-9.9308E-09	250	1500	2	75.24	90.47	403.87
544	3211	C4H7I	2-iodo-1-butene	24308-61-0	-5.9811	3.3115E-01	-2.3443E-05	-1.0144E-08	250	1500	2	75.18	90.40	403.75
545	3212	C4H7I	3-iodo-1-butene	62154-74-9	-6.0086	3.3571E-01	-2.3215E-05	-1.0485E-08	250	1500	2	76.30	91.74	409.94
546	3213	C4H7I	4-iodo-1-butene	7766-51-0	-6.2467	3.3235E-01	-2.5996E-05	-9.2822E-09	250	1500	2	75.07	90.29	402.46
547	3214	C4H7I	1-iodo-cis-2-butene	53121-23-6	-5.6271	3.2759E-01	-2.0299E-05	-1.1087E-08	250	1500	2	74.83	89.95	402.67
548	3215	C4H7I	1-iodo-trans-2-butene	38169-04-9	-5.6271	3.2759E-01	-2.0299E-05	-1.1087E-08	250	1500	2	74.83	89.95	402.67
549	3216	C4H7I	2-iodo-cis-2-butene	24298-09-7	-7.0087	3.4276E-01	-3.2665E-05	-7.4327E-09	250	1500	2	76.52	92.08	408.55
550	3217	C4H7I	2-iodo-trans-2-butene	24298-08-6	-7.0087	3.4276E-01	-3.2665E-05	-7.4327E-09	250	1500	2	76.52	92.08	408.55
551	3218	C4H7I	1-iodo-2-methyl-1-propene	20687-01-8	-7.0087	3.4276E-01	-3.2665E-05	-7.4327E-09	250	1500	2	76.52	92.08	408.55
552	3219	C4H7I	3-iodo-2-methyl-1-propene	3756-30-7	-7.8633	3.5								

Table 1 Viscosity of Gas - Organic Compounds

NO	ID	FORMULA	NAME	CAS No	$\eta_{\text{gas}} = A + B T + C T^2 + D T^3$				$(\eta_{\text{gas}} - \text{micropoise, T - K})$					
					A	B	C	D	TMIN	TMAX	code	$\eta_{\text{gas}}@TMIN$	$\eta_{\text{gas}}@25\text{C}$	$\eta_{\text{gas}}@TMAX$
561	3232	C4H7I3	2,2,3-triodobutane	---	7.2385	2.5401E-01	7.3205E-05	-3.8504E-08	250	1500	2	74.72	88.46	423.02
562	3233	C4H7I3	1,1,1-triodo-2-methylpropane	---	7.2385	2.5401E-01	7.3205E-05	-3.8504E-08	250	1500	2	74.72	88.46	423.02
563	3234	C4H7I3	1,1,2-triodo-2-methylpropane	---	7.2385	2.5401E-01	7.3205E-05	-3.8504E-08	250	1500	2	74.72	88.46	423.02
564	3235	C4H7I3	1,1,3-triodo-2-methylpropane	---	6.6168	2.5173E-01	6.9194E-05	-3.7159E-08	250	1500	2	73.29	86.84	414.49
565	3236	C4H7I3	1,2,3-triodo-2-methylpropane	---	6.8319	2.5237E-01	7.0574E-05	-3.7613E-08	250	1500	2	73.75	87.35	417.23
566	3237	C4H7I3	1,3-diiodo-2-(iodomethyl)-propane	---	6.2356	2.4990E-01	6.6642E-05	-3.6270E-08	250	1500	2	72.31	85.71	408.62
567	3238	C4H7N	butyronitrile	109-74-0	-6.8518	2.8496E-01	-3.8350E-05	-2.0578E-09	250	1500	2	61.96	74.65	327.36
568	3239	C4H7N	isobutyronitrile	78-82-0	-8.1799	3.1217E-01	-4.9931E-05	6.8446E-10	250	1500	2	66.75	80.47	350.04
569	3240	C4H7N	propyl isocyanide	627-36-1	-6.6974	2.4380E-01	-4.2836E-05	1.9656E-09	250	1500	2	51.61	62.24	269.26
570	3241	C4H7N	isopropyl isocyanide	598-45-8	-7.3824	2.5564E-01	-4.9638E-05	3.8273E-09	250	1500	2	53.48	64.52	277.30
571	3246	C4H7NO	acetone cyanohydrin	75-86-5	-3.0510	2.1067E-01	-7.5465E-06	-9.1214E-09	250	1500	2	49.00	58.85	265.19
572	3247	C4H7NO	2-methacrylamide	79-39-0	0.4307	1.8565E-01	2.0143E-05	-1.7437E-08	250	1500	2	47.83	57.11	265.37
573	3248	C4H7NO	3-methoxypropionitrile	110-67-8	-3.3095	2.0773E-01	-1.0335E-05	-7.9492E-09	250	1500	2	47.85	57.49	258.20
574	3249	C4H7NO	2-pyrrolidone	616-45-5	2.3515	1.9224E-01	3.5042E-05	-2.2784E-08	250	1500	2	52.24	62.18	292.65
575	3254	C4H7NO	propyl isocyanate	110-78-1	-7.5472	2.6715E-01	-4.9633E-05	3.1608E-09	250	1500	2	56.19	67.78	292.17
576	3318	C4H8	methylcyclopropane	594-11-6	-11.9713	3.4182E-01	-1.1033E-04	2.1739E-08	250	1500	2	66.88	80.65	325.58
577	3319	C4H8	cyclobutane	287-23-0	-11.6506	3.3702E-01	-1.0044E-04	1.8254E-08	250	1500	2	66.61	80.39	329.50
578	3320	C4H8	1-butene	106-98-9	-11.2711	3.3481E-01	-1.2977E-04	3.1182E-08	175	1500	1,2	43.51	77.84	304.20
579	3321	C4H8	2-butene; (cis+trans)	107-01-7	-11.4529	3.2666E-01	-1.0942E-04	2.2273E-08	250	1500	2	63.72	76.81	307.52
580	3322	C4H8	cis-2-butene	590-18-1	-11.8639	3.4288E-01	-1.4929E-04	4.2833E-08	277	1500	1,2	72.57	78.23	311.11
581	3323	C4H8	trans-2-butene	624-64-6	-11.8262	3.4256E-01	-1.4839E-04	4.2006E-08	277	1500	1,2	72.57	78.23	309.91
582	3324	C4H8	isobutene	115-11-7	-10.7353	3.4187E-01	-1.0806E-04	2.0479E-08	175	1500	1,2	45.89	82.13	328.06
583	3333	C4H8Br2	1,1-dibromobutane	62168-25-6	-4.3079	2.9685E-01	-1.0718E-05	-1.2822E-08	250	1500	2	69.03	82.91	373.58
584	3334	C4H8Br2	1,2-dibromobutane	533-98-2	-3.6196	2.9073E-01	-4.8758E-06	-1.4577E-08	250	1500	2	68.53	82.24	372.31
585	3335	C4H8Br2	1,3-dibromobutane	107-80-2	-2.8994	2.8346E-01	9.8346E-07	-1.6259E-08	250	1500	2	67.77	81.27	369.64
586	3336	C4H8Br2	1,4-dibromobutane	110-52-1	-1.4353	2.6459E-01	1.2015E-05	-1.9090E-08	250	1500	2	65.16	78.01	358.05
587	3337	C4H8Br2	2,2-dibromobutane	50341-35-0	-5.0222	3.1135E-01	-1.6092E-05	-1.1697E-08	250	1500	2	71.63	86.07	386.31
588	3338	C4H8Br2	DL-2,3-dibromobutane	598-71-0	-3.8633	2.9794E-01	-6.4254E-06	-1.4426E-08	250	1500	2	69.99	84.01	379.90
589	3339	C4H8Br2	meso-2,3-dibromobutane	5780-13-2	-4.1386	3.0057E-01	-8.7404E-06	-1.3743E-08	250	1500	2	70.24	84.33	380.66
590	3340	C4H8Br2	1,1-dibromo-2-methylpropane	33693-78-6	-5.0367	3.0924E-01	-1.6456E-05	-1.1447E-08	250	1500	2	71.07	85.40	383.16
591	3341	C4H8Br2	1,2-dibromo-2-methylpropane	594-34-3	-4.5770	3.0703E-01	-1.2243E-05	-1.2845E-08	250	1500	2	71.22	85.54	385.07
592	3342	C4H8Br2	1,3-dibromo-2-methylpropane	28148-04-1	-2.8994	2.8346E-01	9.8346E-07	-1.6259E-08	250	1500	2	67.77	81.27	369.64
593	3343	C4H8Br2	2,3-dibromobutane	5408-86-6	-3.7516	2.9414E-01	-5.7632E-06	-1.4450E-08	250	1500	2	69.20	83.05	375.73
594	3360	C4H8Cl2	1,1-dichlorobutane	541-33-3	-6.6201	2.7850E-01	-3.6614E-05	-2.3314E-09	250	1500	2	60.68	73.10	320.87
595	3361	C4H8Cl2	1,2-dichlorobutane	616-21-7	-5.8672	2.7069E-01	-2.9329E-05	-4.5736E-09	250	1500	2	59.90	72.11	318.74
596	3362	C4H8Cl2	1,3-dichlorobutane	1190-22-3	-5.1687	2.6362E-01	-2.2813E-05	-6.5621E-09	250	1500	2	59.21	71.23	316.79
597	3363	C4H8Cl2	1,4-dichlorobutane	110-56-5	-3.9622	2.5641E-01	-1.1568E-05	-1.0242E-08	250	1500	2	59.26	71.19	320.06
598	3364	C4H8Cl2	2,2-dichlorobutane	4279-22-5	-7.1158	2.8959E-01	-4.0724E-05	-1.4427E-09	250	1500	2	62.71	75.57	330.77
599	3365	C4H8Cl2	DL-2,3-dichlorobutane	2211-67-8	-6.0659	2.7706E-01	-3.0673E-05	-4.4409E-09	250	1500	2	61.21	73.70	325.53
600	3366	C4H8Cl2	meso-2,3-dichlorobutane	4028-56-2	-6.3319	2.7980E-01	-3.3224E-05	-3.6574E-09	250	1500	2	61.49	74.04	326.28
601	3367	C4H8Cl2	1,1-dichloro-2-methylpropane	598-76-5	-7.1676	2.8859E-01	-4.1470E-05	-1.1092E-09	250	1500	2	62.37	75.16	328.67
602	3368	C4H8Cl2	1,2-dichloro-2-methylpropane	594-37-6	-6.8071	2.8633E-01	-3.7652E-05	-2.3935E-09	250	1500	2	62.38	75.15	329.89
603	3369	C4H8Cl2	1,3-dichloro-2-methylpropane	616-19-3	-5.0589	2.6252E-01	-2.1808E-05	-6.8671E-09	250	1500	2	59.10	71.09	316.48
604	3370	C4H8Cl2	2,3-dichlorobutane, dl and meso	7581-97-7	-6.0040	2.7482E-01	-3.0286E-05	-4.4556E-09	250	1500	2	60.74	73.12	323.04
605	3371	C4H8Cl2	mixture-dichlorobutane	26761-81-9	-6.0040	2.7482E-01	-3.0286E-05	-4.4556E-09	250	1500	2	60.74	73.12	323.04
606	3389	C4H8F2	1,1-difluorobutane	2358-38-5	-11.4902	3.3350E-01	-9.8099E-05	1.7574E-08	250	1500	2	66.03	79.69	327.36
607	3390	C4H8F2	1,2-difluorobutane	686-65-7	-10.8240	3.2506E-01	-8.6269E-05	1.3588E-08	250	1500	2	65.26	78.78	328.52
608	3391	C4H8F2	1,3-difluorobutane	691-42-9	-10.2280	3.1666E-01	-7.7992E-05	1.0951E-08	250	1500	2	64.23	77.54	326.23
609	3392	C4H8F2	1,4-difluorobutane	372-90-7	-9.0630	2.9749E-01	-6.4459E-05	6.9662E-09	250	1500	2	61.39	74.09	315.65
610	3393	C4H8F2	2,2-difluorobutane	353-81-1	-11.9026	3.4676E-01	-1.0065E-04	1.7762E-08	250	1500	2	68.77	83.01	341.71
611	3394	C4H8F2	2,3-difluorobutane	666-21-7	-11.0851	3.3273E-01	-8.8422E-05	1.3953E-08	250	1500	2	66.79	80.63	336.15
612	3395	C4H8F2	1,1-difluoro-2-methylpropane	62126-91-4	-11.8521	3.4492E-01	-1.0049E-04	1.7809E-08	250	1500	2	68.38	82.52	339.53
613	3396	C4H8F2	1,2-difluoro-2-methylpropane	62126-92-5	-11.6857	3.4313E-01	-9.7055E-05	1.6612E-08	250	1500	2	68.29	82.43	340.70
614	3397	C4H8F2	1,3-difluoro-2-methylpropane	62126-93-6	-10.0408	3.1415E-01	-7.5530E-05	1.0167E-08	250	1500	2	63.93	77.18	325.55
615	3401	C4H8I2	1,1-diiodobutane	66587-65-3	-0.1316	2.9649E-01	2.5669E-05	-2.5626E-08	250	1500	2	75.19	89.87	415.87
616	3402	C4H8I2	1,2-diiodobutane	53161-72-1	-0.1317	2.9703E-01	2.5717E-05	-2.5673E-08	250	1500	2	75.33	90.03	416.64
617	3403	C4H8I2	1,3-diiodobutane	18371-24-9	-0.1316	2.9649E-01	2.5669E-05	-2.5626E-08	250	1500	2	75.19	89.87	415.87
618	3404	C4H8I2	1,4-diiodobutane	628-21-7	-0.4439	2.9399E-01	2.2915E-05	-2.4535E-08	250	1500	2	74.10	88.59	409.29
619	3405	C4H8I2	2,2-diiodobutane	29443-50-3	0.3763	2.9959E-01	2.9959E-05	-2.7286E-08	250	1500	2	76.72	91.64	425.17
620	3406	C4H8I2	2,3-diiodobutane	66587-66-4	0.2007	2.9890E-01	2.8544E-05	-2.6749E-08	250	1500	2	76.29	91.15	422.50
621	3407	C4H8I2	1,1-diiodo-2-methylpropane	10250-55-2	0.2007	2.9890E-01	2.8544E-05	-2.6749E-08	250	1500	2	76.29	91.15	422.50
622	3408	C4H8I2	1,2-diiodo-2-methylpropane	66794-23-8	0.3763	2.9959E-01	2.9959E-05	-2.7286E-08	250	1500	2	76.72	91.64	425.17
623	3409	C4H8I2	1,3-diiodo-2-methylpropane	17616-44-3	-0.1316	2.9649E-01	2.5669E-05	-2.5626E-08	250	1500	2	75.19	89.87	415.87
624	3474	C4H8O	1,2-epoxybutane	106-88-7	-9.0457	2.9806E-01	-6.4069E-05	6.7868E-09	250	1500	2	61.57	74.30	316.79
625	3476	C4H8O	ethyl vinyl ether	109-92-2	-10.6759	3.1444E-01	-8.8110E-05	1.4909E-08	250	1500	2	62.66	75.64	313.05
626	3477	C4H8O	3-methoxy-1-propene	627-40-7	-10.6424	3.1345E-01	-8.7833E-05	1.4862E-08	250	1500	2	62.46	75.40	312.07
627	3478	C4H8O	butyraldehyde	123-72-8	10.3419	1.8503E-01	6.1646E-05	-4.1383E-08	298	1500	1,2	69.86	69.89	286.93
628	3479	C4H8O	isobutyraldehyde	78-84-2	-9.7220	3.0424E-01	-7.3110E-05	9.8325E-09	250	1500	2	61.92	74.75	315.33
629	3480	C4H8O	methyl ethyl ketone	78-93-3	6.1324	2.0472E-01	6.7776E-05	-4.7187E-08	273	1500	1,2	66.11	71.94	306.45
630	3481	C4H8O	tetrahydrofuran	109-99-9	-9.2064	3.1779E-01	-6.2103E-05	4.9065E-09	250	1500	2	66.44	80.15	344.30
631	3482	C4H8O	cis-crotonyl alcohol	4088-60-2	-9.9967	3.7149E-01	-6.2647E-05	2.0168E-09	250	1500	2	78.99	95.25	413.08
632	3483	C4H8O	trans-2-buten-1-ol	504-61-0	-9.9967									