

Propiedades de sustancias selectas



M - masa molecular, T_m - punto de fusión, T_b - punto de ebullición, T_c - temperatura crítica, P_c - presión crítica, \tilde{V}_c - volumen molar crítico, ω - factor acéntrico, μ_{dip} - momento dipolo

Sustancia	Número CAS	M	T_m	T_b	T_c	P_c	\tilde{V}_c	ω	μ_{dip}
		(g/mol)	(K)	(K)	(K)	(bar)	(cm ³ /mol)	(—)	(debye)
H ₂	1333-74-0	2.0159	13.83	20.27	32.19	13.13	64.1	-0.216	0
D ₂	7782-39-0	4.0316	18.63	22.13	38.35	16.62	60.3	-0.145	0
He	7440-59-7	4.0026	2.15	4.30	5.2	2.275	57.3	-0.390	0
Ne	7440-01-9	20.180	24.56	27.07	44.4	26.53	41.7	-0.040	0
Ar	7440-37-1	39.948	83.80	87.27	150.86	48.98	74.59	0	0
Kr	7439-90-9	83.800	115.77	119.74	209.4	55.0	91.2	0	0
Xe	7440-63-3	131.290	161.25	165.01	289.74	58.4	118.0	0	0
Rn	10043-92-2	220.018	202.15	209.80	377.0	63.0	140		0
aire	132259-10-0	28.964			[132.45]	[37.74]	[91.47]	[0.033]	0
N ₂	7727-37-9	28.013	63.15	77.35	126.2	34	89.2	0.038	0
O ₂	7782-44-7	31.999	54.36	90.17	154.58	50.43	73.4	0.022	0
O ₃	10028-15-6	47.998	80.65	161.80	261	55.7	89	0.212	0.53
H ₂ O	7732-18-5	18.015	273.15	373.15	647.14	220.64	55.95	0.344	1.84
D ₂ O	7789-20-0	20.028	276.96	374.55	643.89	216.71	56.26		1.87
CO	630-08-0	28.010	68.15	81.66	132.92	34.99	94.4	0.048	0.11
CO ₂	124-38-9	44.010	216.58	(SUBLIMA)	304.21	73.83	94.0	0.224	0
COS	463-58-1	60.080	135	223	378.8	63.5	136.3		0.71
CS ₂	75-15-0	76.141	164.5	319.45	552	79.0	160	0.111	0
C ₂ N ₂	460-19-5	52.035	238.75	252.15	400	59.8	195	0.276	0
PH ₃	7803-51-2	33.998	139.37	185.42	324.50	65.4			0.57
NH ₃	7664-41-7	17.031	195.41	239.82	405.65	112.8	72.47	0.253	1.47
N ₂ H ₄	302-01-2	32.045	274.68	386.65	653.15	147	158	0.314	1.75
NO	10102-43-9	30.006	109.51	121.38	180.15	64.8	58.0	0.583	0.16
N ₂ O	10024-97-2	44.013	182.33	184.67	309.57	72.45	97.4	0.141	0.16
N ₂ O ₄	10544-72-6	92.011	261.95	302.22	431.01	101.0		1.007	0.50
SO ₂	7446-09-5	64.064	197.67	263.13	430.75	78.84	122.0	0.245	1.63
SO ₃	7446-11-9	80.063	289.95	317.90	490.85	82.1	127	0.424	0
F ₂	7782-41-4	37.997	53.48	84.95	144.12	51.72	66.5	0.053	0
Cl ₂	7782-50-5	70.906	172.19	239.12	417.15	77.1	124.0	0.069	0
Br ₂	7726-95-6	159.808	265.85	331.90	584.15	103.0	135.0	0.129	0
I ₂	7553-56-2	253.809	386.76	457.56	819.0	117	155.0		0
HF	7664-39-3	20.006	189.58	292.68	461.15	64.8	69	0.382	1.83
HCl	7647-01-0	36.461	158.97	188.15	324.65	83.1	81	0.132	1.11
HBr	10035-10-6	80.912	186.34	206.46	363.15	85.52	100	0.073	0.83
HI	10034-85-2	127.912	222.38	237.57	423.9	90.0	132.7	0.038	0.45
HCN	74-90-8	27.025	261	298.5	456.65	53.9	139	0.410	2.98
H ₂ S	7783-06-4	34.081	187.62	212.84	373.53	89.63	98.5	0.094	0.97
H ₂ Se	7783-07-5	80.976	207.42	228.25	411.0	89.2			0.24
SiH ₄	7803-62-5	32.122	88	161	269.7	48.4			0
SiF ₄	7783-61-1	104.08	177.5	182.8	259.0	37.2	202	0.386	0
SF ₆	2551-62-4	146.059	222.45	209.29	318.69	37.6	198.5	0.215	0
UF ₆	7783-81-5	352.07	337	324.96	503.35	45.31	250.0	0.277	0
Na	7440-23-5	22.99	370.65	1153	2573	350			0
Hg	7439-97-6	200.59	234.3	630	1765	1510	42.7		0

Sustancia	Número CAS	M	T_m	T_b	T_c	P_c	\tilde{V}_c	ω	μ_{dip}
		(g/mol)	(K)	(K)	(K)	(bar)	(cm ³ /mol)	(—)	(debye)
CH ₄	74-82-8	16.043	90.69	111.66	190.56	45.99	98.6	0.012	0
C ₂ H ₆	74-84-0	30.069	90.35	184.55	305.32	48.72	145.5	0.099	0
C ₂ H ₄	74-85-1	28.053	103.99	169.42	282.34	50.41	131	0.086	0
C ₂ H ₂	74-86-2	26.037	192.35	188.4	308.3	61.38	112	0.191	0
C ₃ H ₈	74-98-6	44.096	85.47	231.02	369.83	42.48	200	0.152	0.08
CH ₂ =CH-CH ₃	115-07-1	42.080	87.89	225.46	364.85	46.0	185	0.138	0.37
CH≡C-CH ₃	74-99-7	40.064	170.50	250.12	402.4	56.3	164	0.212	0.78
n-C ₄ H ₁₀	106-97-8	58.122	134.79	272.66	425.12	37.96	255	0.200	0
iso-C ₄ H ₁₀	75-28-5	58.122	113.54	261.34	407.8	36.4	259	0.184	0.13
n-C ₅ H ₁₂	109-66-0	72.150	143.43	309.22	469.7	33.7	311	0.252	0
n-C ₆ H ₁₄	110-54-3	86.175	177.84	341.88	507.6	30.25	371	0.301	0
ciclopropano	75-19-4	42.080	145.73	240.34	398	55.4	162	0.128	0
ciclohexano	110-82-7	84.159	279.69	353.93	553.8	40.8	308	0.208	0
C ₆ H ₆	71-43-2	78.112	278.68	353.24	562.05	48.95	256	0.210	0
C ₆ H ₅ -CH ₃	108-88-3	92.138	178.16	383.79	591.75	41.08	316	0.264	0.38
C ₆ H ₅ -C ₂ H ₅	100-41-4	106.165	178.18	409.36	617.15	36.09	374	0.303	0.59
estireno	100-42-5	104.149	242.15	418.5	636	38.4	352	0.297	0.13
o-xileno	95-47-6	106.165	247.97	417.59	630.3	37.32	370	0.310	0.62
m-xileno	108-38-3	106.165	225.28	412.34	617.0	35.41	375	0.326	0.33
p-xileno	106-42-3	106.165	286.41	411.53	616.2	35.11	378	0.322	0
naftaleno	91-20-3	128.171	351.35	491.16	748.4	40.5	407	0.302	0
CH ₃ -OH	67-56-1	32.042	175.49	337.69	512.5	80.84	117	0.566	1.70
C ₂ H ₅ -OH	64-17-5	46.068	159.05	351.80	514	61.37	168	0.644	1.69
1-propanol	71-23-8	60.095	147.00	370.93	536.8	51.69	219	0.621	1.55
2-propanol	67-63-0	60.095	183.65	355.39	508.3	47.65	222	0.663	1.58
1-octanol	111-87-5	130.228	257.65	468.33	652.3	27.83	509	0.570	1.72
fenol	108-95-2	94.111	314.05	455.04	694.25	61.3	229	0.443	1.22
H-CHO	50-00-0	30.026	181.15	252.15	420	65.9	85.1	0.168	2.33
CH ₃ -CHO	75-07-0	44.053	149.65	293.35	466	55.7	154	0.262	2.75
H-COOH	64-18-6	46.026	281.50	374.04	588	58.1	125	0.313	1.41
CH ₃ -COOH	64-19-7	60.052	289.77	391.04	591.95	57.86	177	0.467	1.70
C ₆ H ₅ -COOH	65-85-0	122.121	394.85	522.35	751	44.7	344	0.603	
CH ₃ -CO-CH ₃	67-64-1	58.079	178.50	329.22	508.2	47.01	209	0.307	2.88
CH ₃ -CO-C ₂ H ₅	78-93-3	72.106	186.51	352.71	535.5	41.5	267	0.323	2.78
CH ₃ -O-CH ₃	115-10-6	46.068	131.65	248.31	400.1	53.7	170	0.200	1.30
C ₂ H ₅ -O-C ₂ H ₅	60-29-7	74.122	156.86	307.59	466.7	36.4	280	0.281	1.15
CH ₃ -NH ₂	74-89-5	31.057	179.69	266.82	430.05	74.6	154	0.281	1.31
(CH ₃) ₂ NH	124-40-3	45.084	180.96	280.00	437.2	53.4	180	0.300	1.01
(CH ₃) ₃ N	75-50-3	59.110	155.85	276.02	433.25	40.7	254	0.206	0.61
C ₆ H ₅ -NH ₂	62-53-3	93.128	266.85	457.17	699.0	53.1	273.9	0.380	1.13
CH ₃ -CN	75-05-8	41.052	229.2	355.8	545.5	48.5	193	0.342	3.92
C ₂ H ₅ -CN	107-12-0	55.079	180.35	370.35	561.3	42.6	242	0.350	4.05
CH ₃ Cl	74-87-3	50.488	175.44	248.95	416.25	66.8	141	0.151	1.89
CH ₂ Cl ₂	75-09-2	84.933	176.00	312.79	510	60.8	185	0.199	1.60
CHCl ₃	67-66-3	119.378	209.74	334.33	536.4	54.72	239	0.222	1.04
CCl ₄	56-23-5	153.823	250.33	349.79	556.35	45.6	276	0.193	0
CCl ₂ F ₂	75-71-8	120.913	115.19	243.45	385.10	41.3	217	0.179	0.51

Datos recopilados principalmente de: Green & Southard (2019) "Perry's Chemical Engineer's Handbook" 9th edición, Poling et al. (2000) "The Properties of Gases and Liquids" 5th edición, Speight (2005) "Lange's Handbook of Chemistry" 16th edición, Perry & Green (2004) "Perry Manual del Ingeniero Químico" 7^a edición, Dean (1985) "Lange Manual de Químico" 13^a edición. Se ha hecho lo posible por validar la información contenida en esta tabla, pero no se puede dar garantía de su exactitud, por lo que no se recomienda su uso en la preparación de diseños finales de equipos industriales, procesos químicos, o sistemas de viaje a través del tiempo.