HITRANonline

Logged in as James Hannigan | Logout

- Home
- Data Access
 - o <u>Line-by-line</u>
 - Absorption Cross Sections
 - Collision Induced Absorption
 - Aerosol Properties
 - HITEMP
 - HAPI
 - <u>Supplemental</u>
- <u>Documentation</u>
 - o FAQ
 - Molecules
 - <u>Isotopologues</u>
 - <u>Definitions</u>
 - <u>Line-by-line Parameters</u>
 - Cross section Data
 - <u>Uncertainties</u>
 - HITRAN papers
- Conferences
- <u>Links</u>
- About
 - About HITRAN
 - Group Members
 - Contact

Isotopologue Metadata



Download this data in text format as molparam.txt.

1: H₂O

global ID	local ID	Formula	AFGL code	Abundance	Molar Mass /g·mol ⁻ 1	Q(296 K)	Q (full range)	g i
1	1	$H_2^{16}O$	161	0.997317	18.010565	174.58	<u>q1.txt</u>	1
2	2	$H_2^{18}O$	181	0.002000	20.014811	176.05	q2.txt	1
3	3	$H_2^{17}O$	171	3.718840×10^{-2}	⁴ 19.01478	1052.14	q3.txt	6
4	4	$\mathrm{HD^{16}O}$	162	3.106930×10^{-2}	[‡] 19.01674	864.74	<u>q4.txt</u>	6
5	5	$HD^{18}O$	182	6.230030×10^{-7}	7 21.020985	875.57	<u>q5.txt</u>	6

6	6	HD ¹⁷ O	172	1.158530×10^{-7} 2	0.020956	5226.79	<u>q6.txt</u>	36
129	7	$D_2^{16}O$	262	2.419700×10^{-8} 2	0.022915	1027.80	<u>q129.txt</u>	1
2: CO ₂								
global ID	local ID	Formula	AFGL code	Abundance	Molar Mass /g·mol ⁻¹	Q(296 K)	Q (full range)	$g_{\rm i}$
7	1	$^{12}C^{16}O_2$	626	0.984204	43.98983	286.09	<u>q7.txt</u>	1
8	2	$^{13}C^{16}O_2$	636	0.011057	44.993185	576.64	<u>q8.txt</u>	2
9	3	$^{16}O^{12}C^{18}O$	628	0.003947	45.994076	607.81	q9.txt	1
10	4	$^{16}O^{12}C^{17}O$	627	7.339890×10^{-4}	44.994045	3542.61	<u>q10.txt</u>	6
11	5	$^{16}O^{13}C^{18}O$	638	4.434460×10^{-5}	46.997431	1225.46	<u>q11.txt</u>	2
12	6	$^{16}O^{13}C^{17}O$	637	8.246230×10^{-6}	45.9974	7141.32	<u>q12.txt</u>	12
13	7	$^{12}C^{18}O_2$	828	3.957340×10^{-6}	47.998322	323.42	<u>q13.txt</u>	1
14	8	$^{17}O^{12}C^{18}O$	827	1.471800×10^{-6}	46.998291	3766.58	<u>q14.txt</u>	6
121	9	$^{12}C^{17}O_2$	727	1.368470×10^{-7}	45.998262	10971.57	<u>q121.txt</u>	1
15	0	$^{13}C^{18}O_2$	838	4.446000×10^{-8}	49.001675	652.24	<u>q15.txt</u>	2
120	11	$^{18}O^{13}C^{17}O$	837	1.653540×10^{-8}	48.001646	7595.04	<u>q120.txt</u>	12
122	12	$^{13}C^{17}O_2$	737	1.537500×10^{-9}	47.0016182378	22120.47	<u>q122.txt</u>	2
3: O ₃								
global ID	local ID	Formula	AFGL code	Abundance	Molar Mass /g·mol	<i>Q</i> (296 K	Q (full range)	$g_{\rm i}$
16	1	$^{16}O_{3}$	666	0.992901	47.984745	3483.71	<u>q16.txt</u>	1
17	2	¹⁶ O ¹⁶ O ¹⁸ O	668	0.003982	49.988991	7465.68	<u>q17.txt</u>	1
18	3	$^{16}O^{18}O^{16}O$	686	0.001991	49.988991	3647.08	<u>q18.txt</u>	1
19	4	$^{16}O^{16}O^{17}O$	667	7.404750×10^{-4}	48.98896	43330.85	<u>q19.txt</u>	6
20	5	$^{16}O^{17}O^{16}O$	676	3.702370×10^{-4}	48.98896	21404.96	<u>q20.txt</u>	6
4: N ₂ O								
global ID	local ID	Formula	AFGL code	Abundance	Molar Mass /g·mol	Q(296 K)	Q (full range)	g _i
21	1	$^{14}N_2^{16}O$	446	0.990333	44.001062	4984.90	<u>q21.txt</u>	9
22	_	- 14 15 16		0.000644		2262.01	•	

3362.01 <u>q22.txt</u>

6

 $^{14}N^{15}N^{16}O$

456

0.003641

44.998096

2

23	3	$^{15}N^{14}N^{16}O$	546	0.003641	44.998096	3458.58	<u>q23.txt</u>	6
24	4	$^{14}N_2^{18}O$	448	0.001986	46.005308	5314.74	<u>q24.txt</u>	9
25	5	$^{14}N_2^{17}O$	447	3.692800×10^{-2}) ⁻⁴ 45.005278	30971.79	<u>q25.txt</u>	54
5: CO			AEGI		N		O (C. II	
global ID	local ID	Formula	AFGL code	Abundance	Molar Mass /g·mol ⁻ 1	Q(296 K)	Q (full range)	g_{i}
112							1 301180)	
26	1	¹² C ¹⁶ O	26	0.986544	27.994915	107.42	<u>q26.txt</u>	1
		¹² C ¹⁶ O ¹³ C ¹⁶ O		0.986544 0.011084	27.994915 28.99827	107.42 224.69	O ,	1 2
26	1		26				<u>q26.txt</u>	
26 27	1 2	$^{13}C^{16}O$	26 36	0.011084	28.99827 29.999161	224.69	<u>q26.txt</u> <u>q27.txt</u>	
26 27 28	1 2 3	¹³ C ¹⁶ O ¹² C ¹⁸ O	26 36 28	0.011084 0.001978	28.99827 29.999161 4 28.99913	224.69 112.77	<u>q26.txt</u> <u>q27.txt</u> <u>q28.txt</u>	2

6: CH₄

global ID	local ID	Formula	AFGL code	Abundance	Molar Mass /g·mol ⁻	Q(296 K)	Q (full range)	g _i
32	1	$^{12}\mathrm{CH_4}$	211	0.988274	16.0313	590.48	<u>q32.txt</u>	1
33	2	$^{13}\text{CH}_4$	311	0.011103	17.034655	1180.82	<u>q33.txt</u>	2
34	3	$^{12}CH_3D$	212	6.157510×10^{-4}	17.037475	4794.73	<u>q34.txt</u>	3
35	4	$^{13}\text{CH}_3\text{D}$	312	6.917850×10^{-6}	18.04083	9599.16	<u>q35.txt</u>	6

7: O₂

global ID	local ID	Formula	AFGL code	Abundance	Molar Mass /g·mol 1	Q(296 K)	Q (full range)	g_{i}
36	1	$^{16}O_2$	66	0.995262	31.98983	215.73	<u>q36.txt</u>	1
37	2	$^{16}O^{18}O$	68	0.003991	33.994076	455.23	<u>q37.txt</u>	1
38	3	$^{16}O^{17}O$	67	7.422350×10^{-4}	4 32.994045	2658.12	<u>q38.txt</u>	6

8: NO

global II	local ID	Formula AI	FGL code	Abundance	Molar Mass /g·mol ⁻¹	Q(296 K)	Q (full range)	$g_{\mathbf{i}}$
39	1	$^{14}N^{16}O$	46	0.993974	29.997989	1142.13	<u>q39.txt</u>	3
40	2	$^{15}N^{16}O$	56	0.003654	30.995023	789.26	<u>q40.txt</u>	2

9: SO ₂								
global ID	local ID) Formula A	FGL code	e Abundance	Molar Mass /g·mol ⁻¹	Q (296 K) Q (f	ull range) §	g _i
42	1	$^{32}S^{16}O_2$	626	0.945678	63.961901	6340.30 <u>q42.</u>	<u>txt</u>	1
43	2	$^{32}S^{16}O_2$ $^{34}S^{16}O_2$	646	0.041950	65.957695	6368.98 <u>q43.</u>	<u>txt</u>	1
10: NO ₂								
global ID	local ID) Formula A	FGL code	e Abundance	Molar Mass /g·mol ⁻¹	Q (296 K) Q (f	ull range) g	g _i
44	1	$^{14}N^{16}O_2$	646	0.991616	45.992904	13577.48 <u>q44.</u>	<u>txt</u>	3
11: NH ₃								
global ID	local ID) Formula A	FGL code	e Abundance	Molar Mass /g·mol ⁻¹	Q (296 K) Q (f	ull range) g	g'i
45	1	$^{14}NH_3$	4111	0.995872	17.026549	1725.22 <u>q45</u> .	<u>txt</u>	3
46	2	¹⁵ NH ₃	5111	0.003661	18.023583	1153.30 <u>q46</u> .	<u>txt</u>	2
12: HNO	3							
global ID	local ID	Formula A	AFGL coo	de Abundance	e Molar Mass /g·mol ⁻¹	¹ Q(296 K) Q	(full range)) g i
47	1	$H^{14}N^{16}O_3$	146	0.989110	62.995644	$2.14 \times 10^5 \text{q}4$	<u>7.txt</u>	6
117	2	$H^{15}N^{16}O_3$	156	0.003636	63.99268	$1.43 \times 10^5 \text{q}$	<u>17.txt</u>	4
13: OH								
global ID	local ID	Formula	AFGL code	Abundanc	e Molar Mass /g·m	ol ⁻ Q(296 K)	Q (full range)	g _i
48	1	¹⁶ OH	61	0.997473	17.00274	80.35	<u>48.txt</u>	2
49	2	¹⁸ OH	81	0.002000	19.006986	80.88	<u>949.txt</u>	2
50	3	¹⁶ OD	62	1.553710×1	0 ⁻⁴ 18.008915	209.32	<u>450.txt</u>	3
14: HF								
global ID	local ID	Formula	AFGL code	Abundanc	e Molar Mass /g·m	ol ⁻ Q(296 K)	Q (full range)	$g_{\rm i}$
51	1	H ¹⁹ F	19	0.999844	20.006229	41.47	<u> 151.txt</u>	4

0.001993

32.002234

1204.44 <u>q41.txt</u>

3

41

3

 $^{14}N^{18}O$ 48

15: HCl								
global ID	local ID	Formula	AFGL code	Abundance	Molar Mass /g·mol	Q(296 K)	Q (full range)	$g_{\rm i}$
52	1	$H^{35}Cl$	15	0.757587	35.976678	160.65	<u>q52.txt</u>	8
53	2	$H^{37}C1$	17	0.242257	37.973729	160.89	<u>q53.txt</u>	8
107	3	$D^{35}C1$	25	1.180050×10^{-2}	4 36.982853	462.78	<u>q107.txt</u>	12
108	4	$D^{37}Cl$	27	3.773500×10^{-5}	5 38.979904	464.13	<u>q108.txt</u>	12
16: HBr								
global ID	local ID	Formula	AFGL code	Abundance	Molar Mass /g·mol	Q(296 K)	Q (full range)	$g_{\rm i}$
54	1	H ⁷⁹ Br	19	0.506781	79.92616	200.17	<u>q54.txt</u>	8
55	2	$H^{81}Br$	11	0.493063	81.924115	200.23	<u>q55.txt</u>	8
111	3	$\mathrm{D}^{79}\mathrm{Br}$	29	7.893840×10^{-5}	5 80.932336	586.40	<u>q111.txt</u>	12
112	4	$D^{81}Br$	21	7.680160×10^{-5}	5 82.930289	586.76	<u>q112.txt</u>	12
17: HI								
global ID	local ID	Formula	AFGL code	Abundance	Molar Mass /g·mol ⁻¹	Q(296 K)	Q (full range)	$g_{\mathbf{i}}$
56	1	$H^{127}I$	17	0.999844	127.912297	388.99	<u>q56.txt</u>	12
113	2	$D^{127}I$	27	1.557410×10^{-2}	⁴ 128.918472	1147.06	<u>q113.txt</u>	18
18: ClO								
global ID	local ID) Formula A	FGL code	e Abundance M	olar Mass /g·mol $^{ ext{-}1}$ Q	(296 K) Q ((full range) 8	g _i
					_	274.61 <u>q5</u>		4
58	2	³⁵ Cl ¹⁶ O ³⁷ Cl ¹⁶ O	76	0.241720 52	.960819 33	32.29 <u>q58</u>	8.txt	4
19: OCS								
global ID	local II	Formula	AFGL co	de Abundance M	Molar Mass /g·mol ⁻¹ 9	Q(296 K) Q	(full range)	<i>g</i> i
59	1	$^{16}O^{12}C^{32}S$	622	0.937395 5	59.966986	1221.01 <u>q</u> .	<u>59.txt</u>	1

110

2

 $D^{19}F$

 $^{16}O^{12}C^{34}S$

60

2

624

0.041583

61.96278

1253.48 <u>q60.txt</u>

1

29

 $1.557410 \times 10^{-4} \ 21.012404$ 115.91 <u>q110.txt</u>

61	3	$^{16}O^{13}C^{32}S$	632	0.010531	60.970341	2484.15	<u>q61.txt</u>	2
62	4	$^{16}O^{12}C^{33}S$	623	0.007399	60.966371	4950.11	<u>q62.txt</u>	4
63	5	$^{18}O^{12}C^{32}S$	822	0.001880	61.971231	1313.78	<u>q63.txt</u>	1
20: H ₂ CO)							
global II) local II) Formula A	FGL cod	le Abundanc	e Molar Mass /g·mol	-1 Q(296 K	(X) Q (full rai	nge) g _i
64	1	$H_2^{12}C^{16}O$	126	0.986237	30.010565	2844.53	<u>q64.txt</u>	1
65	2	$H_2^{13}C^{16}O$	136	0.011080	31.01392	5837.69	<u>q65.txt</u>	2
66	3	$H_2^{12}C^{18}O$	128	0.001978	32.014811	2986.44	<u>q66.txt</u>	1
21: HOC	l							
global II) local II) Formula Al	FGL cod	le Abundanc	e Molar Mass /g·mol	⁻¹ Q(296 K) Q (full rar	nge) g _i
67	1	$\mathrm{H}^{16}\mathrm{O}^{35}\mathrm{Cl}$	165	0.755790	51.971593	19274.79	<u>q67.txt</u>	8
68	2	$\mathrm{H}^{16}\mathrm{O}^{37}\mathrm{Cl}$	167	0.241683	53.968644	19616.20	<u>q68.txt</u>	8
22: N ₂								
global II) local II) Formula AF	GL code	e Abundance	Molar Mass /g·mol⁻	¹ Q(296 K)	Q (full ran	ge) g i
global II 69) local II 1) Formula AF	GL code	e Abundance 0.992687	Molar Mass/g·mol ⁻ 28.006148	¹ Q (296 K) 467.10	Q (full ran	ge) g i
			44					
69	1 2	$^{14}N_{2}$	44	0.992687	28.006148	467.10	<u>q69.txt</u>	1
69 118 23: HCN	1 2	$^{14}N_2$ $^{14}N^{15}N$	44 45	0.992687 0.007478	28.006148 29.003182	467.10 644.10	<u>q69.txt</u> <u>q118.txt</u>	1 6
69 118 23: HCN	1 2	$^{14}N_2$ $^{14}N^{15}N$	44 45	0.992687 0.007478	28.006148	467.10 644.10	<u>q69.txt</u> <u>q118.txt</u>	1 6
69 118 23: HCN global II	1 2 D local II	¹⁴ N ₂ ¹⁴ N ¹⁵ N • Formula AF	44 45 GL code 124	0.992687 0.007478 e Abundance	28.006148 29.003182 • Molar Mass /g·mol	467.10 644.10	<u>q69.txt</u> <u>q118.txt</u> • Q (full ran	1 6 ge) g _i 6
69 118 23: HCN global II 70	1 2 • local II 1	$^{14}N_2$ $^{14}N^{15}N$ Formula AF $H^{12}C^{14}N$	44 45 GL code 124	0.992687 0.007478 • Abundance 0.985114	28.006148 29.003182 • Molar Mass /g·mol ⁻ 27.010899	467.10 644.10 1 Q(296 K) 892.20	<u>q69.txt</u> <u>q118.txt</u> Q (full ran <u>q70.txt</u>	1 6 ge) g _i 6
69 118 23: HCN global II 70 71	1 2 local II 1 2 3	$^{14}N_{2}$ $^{14}N^{15}N$ Formula AF $^{12}C^{14}N$ $^{13}C^{14}N$	44 45 GL code 124 134	0.992687 0.007478 • Abundance 0.985114 0.011068	28.006148 29.003182 Molar Mass /g·mol ⁻ 27.010899 28.014254	467.10 644.10 1 Q(296 K) 892.20 1830.97	<u>q69.txt</u> <u>q118.txt</u> Q (full ran <u>q70.txt</u> <u>q71.txt</u>	1 6 ge) g i 6 12
69 118 23: HCN global II 70 71 72 24: CH ₃ 0	1 2 1 2 3 2 1 2 1 2 3 2 1 2 1 2 1 2 1 2	14N ₂ 14N ¹⁵ N Pormula AF H ¹² C ¹⁴ N H ¹³ C ¹⁴ N H ¹² C ¹⁵ N	44 45 CGL code 124 134 125	0.992687 0.007478 Abundance 0.985114 0.011068 0.003622	28.006148 29.003182 Molar Mass /g·mol ⁻ 27.010899 28.014254	467.10 644.10 1 Q(296 K) 892.20 1830.97 615.28	<u>q69.txt</u> <u>q118.txt</u> Q (full ran <u>q70.txt</u> <u>q71.txt</u> <u>q72.txt</u>	1 6 ge) g i 6 12 4
69 118 23: HCN global II 70 71 72 24: CH ₃ 0	1 2 1 2 3 2 1 2 1 2 3 2 1 2 1 2 1 2 1 2	¹⁴ N ₂ ¹⁴ N ¹⁵ N Formula AF H ¹² C ¹⁴ N H ¹³ C ¹⁴ N H ¹² C ¹⁵ N	44 45 CGL code 124 134 125	0.992687 0.007478 Abundance 0.985114 0.011068 0.003622	28.006148 29.003182 Molar Mass /g·mol ⁻ 27.010899 28.014254 28.007933	467.10 644.10 1 Q(296 K) 892.20 1830.97 615.28	<u>q69.txt</u> <u>q118.txt</u> Q (full ran <u>q70.txt</u> <u>q71.txt</u> <u>q72.txt</u>	1 6 ge) g i 6 12 4
69 118 23: HCN global II 70 71 72 24: CH ₃ 0 global II	1 2 D local II 1 2 3 Cl D local II	14N ₂ 14N ¹⁵ N Pormula AF H ¹² C ¹⁴ N H ¹³ C ¹⁴ N H ¹² C ¹⁵ N	44 45 *GL code 124 134 125 *FGL co 215	0.992687 0.007478 Abundance 0.985114 0.011068 0.003622 de Abundance	28.006148 29.003182 Molar Mass /g·mol ⁻ 27.010899 28.014254 28.007933	467.10 644.10 1 Q(296 K) 892.20 1830.97 615.28 1-1 Q(296 F) 57916.1	969.txt 9118.txt Q (full ran 970.txt 971.txt 972.txt	1 6 ge) g i 6 12 4

13	1	11 ₂ 0 ₂	1001	0.774752 3	7.00540	7047.57 <u>q75.t</u>	<u>At</u>	1
26: C ₂ H ₂								
global ID	local ID	Formula	AFGL code	Abundanc	ee Molar Mass	/g·mol ⁻ Q(296 K)	Q (full range)	$g_{\rm i}$
76	1	$^{12}\text{C}_2\text{H}_2$	1221	0.977599	26.01565	412.45	<u>76.txt</u>	1
77	2	$H^{12}C^{13}CH$	1231	0.021966	27.019005	1656.18 <u>c</u>	<u>77.txt</u>	8
105	3	$H^{12}C^{12}CD$	1222	3.045500×1	0-4 27.021825	1581.84	<u>105.txt</u>	6
27: C ₂ H ₆								
global ID	local ID	Formula	AFGL code	' Abundan	ce Molar Mass /	['] g·mol⁻ Q(296 K)	Q (full range)	$g_{\rm i}$
78	1	$^{12}\text{C}_2\text{H}_6$	1221	0.976990	30.04695	70882.52 g	<u>78.txt</u>	1
106	2	¹² CH ₃ ¹³ CH ₃	1231	0.021953	31.050305	36191.80 <u>q</u>	<u>106.txt</u>	2
28: PH ₃) local II) Formula AF	GL code	Abundance N	Aolar Mass /g·m	ol ⁻¹ <i>Q</i> (296 K) Q (fu	ıll range) <i>{</i>	gi
	1	2.1			3.997238			2
29: COF ₂	2							
global ID					e Molar Mass /g	-mol ⁻¹ $Q(296 K) Q$	(full rang	e) g i
80	1	$^{12}\text{C}^{16}\text{O}^{19}\text{F}_2$ $^{13}\text{C}^{16}\text{O}^{19}\text{F}_2$	269	0.986544	65.991722	70028.43 q §	80.txt	1
119	2	$^{13}\text{C}^{16}\text{O}^{19}\text{F}_2$	369	0.011083	66.995083	$1.40 \times 10^5 \mathrm{g}$	<u>119.txt</u>	2
30: SF ₆								
global II	local II) Formula AF	GL code	Abundance N	Molar Mass /g·m	$^{-1}$ $Q(296 \text{ K}) \text{ Q (f}$	ull range)	g_{i}
126	1	$^{32}S^{19}F_6$	29	0.950180 1	45.962492	$1.62 \times 10^6 \underline{\text{q126}}$	<u>6.txt</u>	1
31: H ₂ S								

global ID local ID Formula AFGL code Abundance Molar Mass /g·mol $^{-1}$ $Q(296~{\rm K})$ Q (full range) $g_{\rm i}$

global ID local ID Formula AFGL code Abundance Molar Mass /g·mol-1 $Q(296~{\rm K})~{\rm Q}$ (full range) $g_{\rm i}$

34.00548

9847.99 <u>q75.txt</u>

0.994952

 $H_2^{16}O_2$

75

1

81	1	$H_2^{32}S$	121	0.94	9884	33.98	7721	505.79	<u>q81.txt</u>	1	
82	2	$H_2^{34}S$	141	0.04	2137	35.98	3515	504.35	<u>q82.txt</u>	1	l
83	3	$H_2^{33}S$	131	0.00	7498	34.98	7105	2014.94	<u>q83.txt</u>		1
32: HCO	ОН										
global ID	local ID	Formula		.FGL code	Abund	lance	Molar Mass /g· 1	mol Q(29	96 K)	Q (full range)	g i
84	1	H ¹² C ¹⁶ O ¹⁶ OH	Н	126	0.9838	98	46.00548	3913	2.76 <u>q8</u>	4.txt	4
33: HO ₂											
global II) local Il	D Formula AF	GL co	ode Abu	ındance	e Mola	r Mass /g·mol ⁻¹	¹ Q(296 K) Q (full	range) g	i
85	1	$\mathrm{H^{16}O_{2}}$	166		5107	32.99		4300.39	<u>q85.txt</u>		
34: O											
global II) local II	D Formula AF	GL co	ode Abu	ındance	e Mola	r Mass /g·mol ⁻¹	¹ <i>Q</i> (296 K) Q (full	range) g	i
							4915			1	
35: CION	JO										
	NO_2										
global ID	local ID	Formula	,	AFGL code	Abun	dance	Molar Mas /g·mol ⁻¹	Q(29)	96 K)	Q (full range)	$g_{\rm i}$
global	local	³⁵ Cl ¹⁶ O ¹⁴ N ¹⁶ O	O_2		Abun 0.749			Q(29)	96 K) × 10 ⁶ g]	range)	g i 12
global ID	local ID		O_2	code		570	/g·mol ⁻¹	Q (29)	_	range)	
global ID 127	local ID	³⁵ Cl ¹⁶ O ¹⁴ N ¹⁶ O	O_2	code 5646	0.749	570	/ g·mol ⁻¹ 96.956672	Q (29)	× 10 ⁶ g1	range)	12
global ID 127 128 36: NO ⁺	local ID 1 2	³⁵ Cl ¹⁶ O ¹⁴ N ¹⁶ O ³⁷ Cl ¹⁶ O ¹⁴ N ¹⁶ O ¹⁴	O_2 O_2	code 5646 7646	0.749	570 694	/ g·mol ⁻¹ 96.956672	Q (29) 4.79 4.91	× 10 ⁶ g] × 10 ⁶ g]	range) 127.txt 128.txt	12 12
global ID 127 128 36: NO ⁺	local ID 1 2	³⁵ Cl ¹⁶ O ¹⁴ N ¹⁶ O ³⁷ Cl ¹⁶ O ¹⁴ N ¹⁶ O ¹⁴	O ₂ O ₂ GL co	code 5646 7646 ode Abu	0.749	570 694	/g·mol ⁻¹ 96.956672 98.953723 r Mass /g·mol ⁻²	Q (29) 4.79 4.91	× 10 ⁶ g] × 10 ⁶ g]	range) 127.txt 128.txt 1 range) g	12 12
global ID 127 128 36: NO ⁺ global II	local ID 1 2 D local II	³⁵ Cl ¹⁶ O ¹⁴ N ¹⁶ O ³⁷ Cl ¹⁶ O ¹⁴ N ¹⁶ O	O ₂ O ₂ GL co	code 5646 7646 ode Abu	0.749 0.239	570 694 Mol a	/g·mol ⁻¹ 96.956672 98.953723 r Mass /g·mol ⁻²	Q(29 4.79 4.91 4.91	× 10 ⁶ g] × 10 ⁶ g]	range) 127.txt 128.txt 1 range) g	12 12
global ID 127 128 36: NO ⁺ global II 87 37: HOB	local ID 1 2 D local II 1	³⁵ Cl ¹⁶ O ¹⁴ N ¹⁶ O ³⁷ Cl ¹⁶ O ¹⁴ N ¹⁶ O D Formula AF O 14N ¹⁶ O+	O ₂ O ₂ GL c o	code 5646 7646 ode Abu 0.99	0.749 0.239 andance	570 694 • Mola 29.99	/g·mol ⁻¹ 96.956672 98.953723 r Mass /g·mol ⁻²	Q (29 4.79 4.91 1 Q (296 K 311.69	× 10 ⁶ g] × 10 ⁶ g]) Q (full	range) 27.txt 28.txt range) 8	12 12
global ID 127 128 36: NO ⁺ global II 87 37: HOB	local ID 1 2 D local II 1	³⁵ Cl ¹⁶ O ¹⁴ N ¹⁶ O ³⁷ Cl ¹⁶ O ¹⁴ N ¹⁶ O D Formula AF O 14N ¹⁶ O+	O ₂ O ₂ GL c o	code 5646 7646 ode Abu 0.99	0.749 0.239 andance	570 694 • Mola 29.99	/g·mol ⁻¹ 96.956672 98.953723 r Mass /g·mol ⁻² 7989	Q (29 4.79 4.91 1 Q (296 K 311.69	× 10 ⁶ g] × 10 ⁶ g]) Q (full g87.txt	range) 27.txt 28.txt range) g	12 12
global ID 127 128 36: NO ⁺ global II 87 37: HOB:	local ID 1 2 D local II 1 r D local II	35Cl ¹⁶ O ¹⁴ N ¹⁶ O 37Cl ¹⁶ O ¹⁴ N ¹⁶ O D Formula AF 14N ¹⁶ O ⁺	O ₂ O ₂ GL co 46	code 5646 7646 ode Abu 0.99	0.749 0.239 undance	570 694 • Mola 29.99	/g·mol ⁻¹ 96.956672 98.953723 r Mass /g·mol ⁻² 7989	Q(29 4.79 4.91 4.91 4.91 4.91 311.69	× 10 ⁶ g ₁ × 10 ⁶ g ₁ × 10 ⁶ g ₁) Q (full g _{87.txt}	range) 127.txt 128.txt 1 range) g	12 12 i 3

38: (C_2H_4
-------	----------

global ID	local ID	Formula	AFGL code	Abundance	Molar Mass /g·mol ⁻	Q(296 K)	Q (full range)	$g_{\rm i}$
90	1	$^{12}\text{C}_2\text{H}_4$	221	0.977294	28.0313	11041.54	<u>190.txt</u>	1
91	2	$^{12}\text{CH}_2^{13}\text{CH}_2$	231	0.021959	29.034655	45196.89	<u>191.txt</u>	2

39: CH₃OH

global II	O local ID	Formula	AFGL code	Abundance	e Molar Mass /g·mol ⁻¹	$Q(296 \mathrm{~K}) \mathrm{~Q}$ (full rang	e) g i
92	1	¹² CH ₃ ¹⁶ OH	2161	0.985930	32.026215	70569.92 <u>q92.txt</u>	2

40: CH₃Br

global ID local ID Formula AFGL code Abundance Molar Mass /g·mol-1 $Q(296~{\rm K})~{\rm Q}$ (full range) $g_{\rm i}$

93	1	$^{12}\mathrm{CH_3}^{79}\mathrm{Br}$	219	0.500995	93.941811	83051.98 <u>q93.txt</u>	4
94	2	$^{12}\text{CH}_{3}^{81}\text{Br}$	211	0.487433	95.939764	83395.21 <u>q94.txt</u>	4

41: CH₃CN

global ID	local ID	Formula	AFGL code	Abundance	e Molar Mass /g·mol ⁻ 1	Q(296 K)	Q (full range)	g_{i}
95	1	$^{12}\text{CH}_3^{12}\text{C}^{14}\text{N}$	2124	0.973866	41.026549	88672.19 q	<u>95.txt</u>	3

42: CF₄

global ID local ID Formula AFGL code Abundance Molar Mass /g·mol⁻¹ Q(296 K) Q (full range) g_i

96 1 $^{12}\text{C}^{19}\text{F}_4$ 29 0.988890 87.993616 $1.21 \times 10^5 \, \underline{\text{q}}\underline{96.\text{txt}}$ 1

43: C₄H₂

global ID local ID Formula AFGL code Abundance Molar Mass /g·mol-1 Q(296 K) Q (full range) g_i

116 1 ¹²C₄H₂ 2211 0.955998 50.01565 9818.97 <u>q116.txt</u> 1

44: HC₃N

global ID local ID Formula AFGL code Abundance Molar Mass /g·mol $^{-1}$ Q(296 K) Q (full range) g_i

global ID	local ID	Formula	AFGL code	Abundanc	e Molar Mass /g·m 1	nol	D K I	Q (full range)	g _i
103	1	H_2	11	0.999688	2.01565	7.67	<u>q103</u>	<u>3.txt</u>	1
115	2	HD	12	3.114320×1	0 ⁻⁴ 3.021825	29.87	<u>q115</u>	<u>5.txt</u>	6
46: CS									
global ID	local ID) Formula A	AFGL code	Abundance]	Molar Mass /g·mol ⁻¹	Q(296 K)	Q (full 1	range) $g_{\rm i}$	
97	1	$^{12}C^{32}S$	22	0.939624	43.971036	253.62	<u>q97.txt</u>	1	
98	2	$^{12}\mathrm{C}^{34}\mathrm{S}$	24	0.041682	45.966787	257.77	<u>q98.txt</u>	1	
99	3	$^{13}C^{32}S$	32	0.010556	44.974368	537.50	<u>q99.txt</u>	2	
100	4	$^{12}\mathrm{C}^{33}\mathrm{S}$	23	0.007417	44.970399	1022.97	<u>q100.txt</u>	4	
47: SO ₃									
global ID	local ID) Formula A	AFGL code	Abundance]	Molar Mass /g·mol ⁻¹	Q(296 K)) Q (full 1	range) g_i	
114	1	$^{32}S^{16}O_3$	26	0.943400	79.95682	7783.30	<u>q114.txt</u>	1	
48: C ₂ N ₂									
global ID	local ID) Formula <i>A</i>	AFGL code	e Abundance	Molar Mass /g·mol ⁻¹	Q(296 K	Q (full	range) g _i	
123	1	$^{12}C_2^{14}N_2$	4224	0.970752	52.006148	15582.44	<u>q123.tx1</u>	1	
49: COCI	2								

Abundance

0.566392

0.362235

AFGL

code

2655

2657

Molar Mass

 $/g \cdot mol^{-1}$

97.9326199796

99.9296698896

109

45: H₂

global

ID

124

125

local

ID

1

2

Formula

¹²C¹⁶O³⁵Cl³⁷Cl

 $^{12}C^{16}O^{35}Cl_2$

1

 $H^{12}C_3^{14}N$

1224

0.963346

51.010899

24786.84 <u>q109.txt</u>

6

 $Q \ (full \\$

range)

 g_{i}

1

16

Q(296 K)

 $1.48 \times 10^6 \, \underline{\text{q124.txt}}$

 $3.04 \times 10^6 \, \underline{\text{q125.txt}}$