Table 13. Petroleum Hydrocarbon Gases Health Effects Data Matrix

CASRN	Endpoint Ranges (ppm)										
	Acute LC_{50}		Repeated-Dose[1]		In vitro Genotoxicity			Developmental Toxicity[1]		Reproductive Toxicity[1]	
	Minimum	Maximum[2]	Minimum	Maximum	erial Mutagen	Non-bacterial	*ivo* Genotox	Minimum	Maximum	Minimum	Maximum
74-82-8	10,101	12,658	2,525	3,165	Negative	Negative	Negative	5,051	6,329	9,091	11,392
	no lethality[3]		C1 – C4 HCs[4]		No genotoxic constituents			NOAEL†		C1 – C4 HCs[5]	
74-84-0	10,000	10,000	2,500	2,500	Negative	Negative	Negative	5,000	5,000	9,000	9,000
	no lethality		C1 – C4 HCs		No genotoxic constituents			NOAEL†		C1 – C4 HCs	
74-98-6	10,000	10,000	2,500	2,500	Negative	Negative	Negative	5,000	5,000	9,000	9,000
	no lethality		C1 – C4 HCs		No genotoxic constituents			NOAEL†		C1 – C4 HCs	
75-28-5	10,000	10,000	2,500	2,500	Negative	Negative	Negative	5,000	5,000	9,000	9,000
	no lethality		C1 – C4 HCs		No genotoxic constituents			NOAEL†		C1 – C4 HCs	
78-78-4	1,063	1,063	6,625	6,625	Negative	Negative	Negative	3,463	3,463	6,521	6,521
	no lethality		C5 – C6 HCs		No genotoxic constituents			C5 – C6 HCs		NOAEL†	
106-97-8	10,000	10,000	2,500	2,500	Negative	Negative	Negative	5,000	5,000	9,000	9,000
	no lethality		C1 – C4 HCs		No genotoxic constituents			NOAEL†		C1 – C4 HCs	
109-66-0	1,063	1,063	6,625	6,625	Negative	Negative	Negative	3,463	3,463	6,521	6,521
	no lethality		C5 – C6 HCs		No genotoxic constituents			C5 – C6 HCs		NOAEL†	
115-07-1	10,000	10,000	2,500	2,500	Negative	Negative	Negative	5,000	5,000	9,000	9,000
	no lethality		C1 – C4 HCs		No genotoxic constituents			NOAEL†		C1 – C4 HCs	
287-92-3	1,063	1,063	6,625	6,625	Negative	Negative	Negative	3,463	3,463	6,521	6,521
	no lethality		C5 – C6 HCs		No genotoxic constituents			C5 – C6 HCs		NOAEL†	
513-35-9	1,063	1,063	6,625	6,625	Negative	Negative	Negative	3,463	3,463	6,521	6,521
	no lethality		C5 – C6 HCs		No genotoxic constituents			C5 – C6 HCs		NOAEL†	
8006-14-2	10,537	11,173	2,634	2,793	Negative	Negative	Negative	5,269	5,587	9,484	10,056
	no lethality		C1 – C4 HCs		No genotoxic constituents			NOAEL†		C1 – C4 HCs	
68131-75-9	> 100%[6]	> 100%	2,500	2,503	Positive	Positive	Positive	5,000	5,005	9,000	9,009
	1,3-Butadiene		C1 – C4 HCs		Contains up to 0.1% 1,3-butadiene			NOAEL†		C1 – C4 HCs	
68307-98-2	> 100%	> 100%	2,503	2,591	Positive	Positive	Positive	346,300	> 100%	9,009	9,326
	1,3-Butadiene		C1 – C4 HCs		Contains up to 2% 1,3-butadiene			C5 – C6 HCs		C1 – C4 HCs	
68307-99-3	> 100%	> 100%	2,515	2,717	Positive	Positive	Positive	346,300	> 100%	9,054	9,783
	1,3-Butadiene		C1 – C4 HCs		Contains up to 2% 1,3-butadiene			C5 – C6 HCs		C1 – C4 HCs	

68308-02-1	11,976	15,504	2,994	3,876	Negative	Negative	Negative	62,964	230,867	10,778	13,953
	no lethality		C1 – C4 HCs		No genotoxic constituents			C5 – C6 HCs		C1 – C4 HCs	
68308-03-2	10,173	11,628	2,543	2,907	Negative	Negative	Negative	32,981	203,706	9,156	10,465
	no lethality		C1 – C4 HCs		No genotoxic constituents			C5 – C6 HCs		C1 – C4 HCs	
68308-04-3	10,183	11,299	2,546	2,825	Negative	Negative	Negative	43,288	203,706	9,165	10,169
	no lethality		C1 – C4 HCs		No genotoxic constituents			C5 – C6 HCs		C1 – C4 HCs	
68308-05-4	>100	>100%	2,503	2,577	Positive	Positive	Positive	346,300	>100%	9,009	9,278
	1,3-Butadiene		C1 – C4 HCs		Contains up to 2% 1,3-butadiene			C5 – C6 HCs		C1 – C4 HCs	
68308-06-5	5,906	53,150	2,551	3,049	Negative	Negative	Negative	19,239	173,150	9,184	10,976
	no lethality		C1 – C4 HCs		No genotoxic constituents			C5 – C6 HCs		C1 – C4 HCs	
68308-08-7	10,000	10,101	2,500	2,525	Negative	Negative	Negative	346,300	>100%	9,000	9,091
	no lethality		C1 – C4 HCs		No genotoxic constituents			C5 – C6 HCs		C1 – C4 HCs	
68309-09-8	5,906	53,150	2,551	3,049	Negative	Negative	Negative	19,239	173,150	9,184	10,976
	no lethality		C1 – C4 HCs		No genotoxic constituents			C5 – C6 HCs		C1 – C4 HCs	
68308-10-1	10,000	10,204	2,500	2,551	Negative	Negative	Negative	173,150	>100%	9,000	9,184
	no lethality		C1 – C4 HCs		No genotoxic constituents			C5 – C6 HCs		C1 – C4 HCs	
68308-11-2	10,000	10,000	2,500	2,500	Negative	Negative	Negative	5,000	5,000	9,000	9,000
	no lethality		C1 – C4 HCs		No genotoxic constituents			NOAEL†		C1 – C4 HCs	
68308-12-3	> 100 %	> 100 %	1,000	>100%	Positive	Positive	Positive	2,000	>100%	10,601	34,615
	Benzene		Benzene		Contains up to 1% Benzene			Benzene		C1 – C4 HCs	
68409-99-4	> 100 %	> 100 %	2,688	3,846	Positive	Positive	Positive	11,171	49,471	9,677	13,846
	1,3-butadiene		C1 – C4 HCs		Contains up to 4% 1,3-butadiene			C5 – C6 HCs		C1 – C4 HCs	
68410-63-9	10,537	11,173	2,634	2,793	Negative	Negative	Negative	5,269	5,587	9,484	10,056
	no lethality		C1 – C4 HCs		No genotoxic constituents			NOAEL†		C1 – C4 HCs	
68475-57-0	10,000	10,204	2,500	2,551	Negative	Negative	Negative	5,000	5,102	9,000	9,184
	no lethality		C1 – C4 HCs		No genotoxic constituents			NOAEL†		C1 – C4 HCs	
68475-58-1	10,000	10,000	2,500	2,500	Negative	Negative	Negative	5,000	5,000	9,000	9,000
	no lethality		C1 – C4 HCs		No genotoxic constituents			NOAEL†		C1 – C4 HCs	
68475-59-2	10,000	10,000	2,500	2,500	Negative	Negative	Negative	5,000	5,000	9,000	9,000

	no lethality		C1 – C4 HCs		No genotoxic constituents			NOAEL†		C1 – C4 HCs	
68475-60-5	1,635	3,037	3,846	7,143	Negative	Negative	Negative	5,328	9,894	13,846	25,714
	no lethality		C1 – C4 HCs		No genotoxic constituents			C5 – C6 HCs		C1 – C4 HCs	
68476-40-4	10,000	10,101	2500	2,525	Negative	Negative	Negative	346,300	>100%	9,000	9,091
	no lethality		C1 – C4 HCs		No genotoxic constituents			C5 – C6 HCs		C1 – C4 HCs	
68476-42-6	1,587	3,221	3,731	7,576	Negative	Negative	Negative	5,169	10,494	13,433	27,273
	no lethality		C1 – C4 HCs		No genotoxic constituents			C5 – C6 HCs		C1 – C4 HCs	
68476-44-8	>100%	>100%	1,000	>100%	Positive	Positive	Positive	2,000	>100%	17,647	55,556
	Benzene		Benzene		Contains up to 1% benzene			Benzene		C1 – C4 HCs	
68476-49-3	10,000	10,000	2,500	2,500	Negative	Negative	Negative	5,000	5,000	9,000	9,000
	no lethality		C1 – C4 HCs		No genotoxic constituents			NOAEL†		C1 – C4 HCs	
68476-54-0	>100%	>100%	2,959	4,098	Positive	Positive	Positive	8,879	22,342	10,651	14,754
	1,3-butadiene		C1 – C4 HCs		Contains up to 0.5% 1-3-butadiene			C5 – C6 HCs		C1 – C4 HCs	
68476-85-7	>100%	>100%	1,000	>100%	Positive	Positive	Positive	2,000	>100%	14,754	52,326
	Benzene		Benzene		s up to 1% benzene and up to 0.1% 1,3-bu			Benzene		C1 – C4 HCs	
68476-86-8	>100%	>100%	1,000	>100%	Positive	Positive	Positive	2,000	>100%	14,754	52,326
	Benzene		Benzene		s up to 1% benzene and up to 0.1% 1,3-bu			Benzene		C1 – C4 HCs	
68477-25-8	>100%	>100%	1,000	>100%	Positive	Positive	Positive	2,000	>100%	11,553	27,273
	Benzene		Benzene		Contains up to 1% benzene			Benzene		C1 – C4 HCs	
68477-33-8	>100%	>100%	2,000	>100%	Positive	Positive	Positive	4,000	>100%	9,375	11,765
	Benzene		Benzene		s up to 0.5% benzene and up to 1% 1,3-bu			Benzene		C1 – C4 HCs	
68477-42-9	>100%	>100%	2,577	3,030	Positive	Positive	Positive	20,988	115,433	9,278	10,909
	Benzene		C1 – C4 HCs		Contains up to 0.1% 1,3-butadiene			C5 – C6 HCs		C1 – C4 HCs	
68477-69-0	10,000	10,204	2,500	2,551	Negative	Negative	Negative	173,150	>100%	9,000	9,184
	no lethality		C1 – C4 HCs		No genotoxic constituents			C5 – C6 HCs		C1 – C4 HCs	
68477-70-3	10,000	10,000	2,500	2,500	Negative	Negative	Negative	5,000	5,000	9,000	9,000
	no lethality		C1 – C4 HCs		No genotoxic constituents			NOAEL†		C1 – C4 HCs	
68477-71-4	> 100%	> 100%	2,688	3,676	Positive	Positive	Positive	10,822	49,471	9,677	13,235
	1,3-Butadiene		C1 – C4 HCs		Contains up to 4% 1-3-butadiene			C5 – C6 HCs		C1 – C4 HCs	

68477-72-5	> 100%	> 100%	2,959	4,167	Positive	Positive	Positive	8,658	22,342	10,651	15,000
	1,3-Butadiene		C1 – C4 HCs		Contains up to 0.5% 1-3-butadiene			C5 – C6 HCs		C1 – C4 HCs	
68477-73-6	> 100%	> 100%	2,500	2,525	Positive	Positive	Positive	346,300	>100%	9,000	9,091
	1,3-Butadiene		C1 – C4 HCs		Contains up to 2% 1-3-butadiene			C5 – C6 HCs		C1 – C4 HCs	
68477-74-7	> 100%	> 100%	2,000	>100%	Positive	Positive	Positive	4,000	>100%	9,978	22,785
	Benzene		Benzene		Contains up to 0.5% benzene			Benzene		C1 – C4 HCs	
68477-75-8	> 100%	> 100%	2,723	5,020	Positive	Positive	Positive	7,368	42,232	9,804	18,072
	Benzene		C1 – C4 HCs		Contains up to 0.2% benzene			C5 – C6 HCs		C1 – C4 HCs	
68477-76-9	3,937	22,617	2,623	3,425	Negative	Negative	Negative	12,826	73,681	9,444	12,329
	no lethality		C1 – C4 HCs		No genotoxic constituents			C5 – C6 HCs		C1 – C4 HCs	
68477-79-2	> 100%	> 100%	2,572	2,864	Positive	Positive	Positive	10,000	>100%	9,259	10,309
	Benzene		C1 – C4 HCs		Contains up to 0.2% benzene			Benzene		C1 – C4 HCs	
68477-83-8	> 100%	> 100%	2,828	4,274	Positive	Positive	Positive	8,767	29,853	10,181	15,385
	1,3-Butadiene		C1 – C4 HCs		Contains up to 2% 1,3-butadiene			C5 – C6 HCs		C1 – C4 HCs	
68477-85-0	> 100%	> 100%	2,538	3,378	Positive	Positive	Positive	13,580	230,867	9,137	12,162
	1,3-Butadiene		C1 – C4 HCs		Contains up to 0.5% 1,3-butadiene			C5 – C6 HCs		C1 – C4 HCs	
68477-86-1	10,000	10,753	2,500	2,688	Negative	Negative	Negative	5,000	5,376	9,000	9,677
	no lethality		C1 – C4 HCs		No genotoxic constituents			NOAEL†		C1 – C4 HCs	
68477-87-2	> 100%	> 100%	2,500	2,660	Positive	Positive	Positive	69,260	>100%	9,000	9,574
	1,3-Butadiene		C1 – C4 HCs		Contains up to 1% 1,3-butadiene			C5 – C6 HCs		C1 – C4 HCs	
68477-88-3	10,000	10,526	2,500	2,632	Negative	Negative	Negative	5,000	5,263	9,000	9,474
	no lethality		C1 – C4 HCs		No genotoxic constituents			NOAEL†		C1 – C4 HCs	
68477-90-7	10,000	10,753	2,500	2,688	Negative	Negative	Negative	5,000	5,376	9,000	9,677
	no lethality		C1 – C4 HCs		No genotoxic constituents			NOAEL†		C1 – C4 HCs	
68477-91-8	> 100%	> 100%	2,525	2,907	Positive	Positive	Positive	69,260	346,300	9,091	10,465
	1,3-Butadiene		C1 – C4 HCs		Contains up to 2% 1,3-butadiene			C5 – C6 HCs		C1 – C4 HCs	
68477-94-1	> 100%	> 100%	2,500	2,646	Positive	Positive	Positive	5,000	5,291	9,000	9,524
	1,3-Butadiene		C1 – C4 HCs		Contains up to 0.5% 1,3-butadiene			NOAEL†		C1 – C4 HCs	
68478-19-3	10,050	10,526	2,513	2,632	Negative	Negative	Negative	69,260	692,600	9,045	9,474

	no lethality		C1 – C4 HCs		No genotoxic constituents			C5 – C6 HCs		C1 – C4 HCs	
68478-24-0	> 100%	> 100%	2,680	3, 682	Positive	Positive	Positive	12,368	51,687	9,646	13,255
	1,3-Butadiene		C1 – C4 HCs		Contains up to 0.1% 1,3-butadiene			C5 – C6 HCs		C1 – C4 HCs	
68478-26-2	> 100%	> 100%	2,513	2,720	Positive	Positive	Positive	69,260	692,600	9,045	9,793
	1,3-Butadiene		C1 – C4 HCs		Contains up to 0.1% 1,3-butadiene			C5 – C6 HCs		C1 – C4 HCs	
68478-32-0	> 100%	> 100%	2,000	> 100%	Positive	Positive	Positive	4,000	> 100%	9,307	13,333
	Benzene		Benzene		ains up to 0.5% benzene and 1% 1,3-butad			Benzene		C1 – C4 HCs	
68478-33-1	10,695	13,245	2,674	3,311	Negative	Negative	Negative	76,956	230,867	9,626	11,921
	no lethality		C1 – C4 HCs		No genotoxic constituents			C5 – C6 HCs		C1 – C4 HCs	
68478-34-2	> 100%	> 100%	2,577	3,425	Positive	Positive	Positive	18,226	138,520	9,278	12,329
	1,3-Butadiene		C1 – C4 HCs		Contains up to 4% 1,3-butadiene			C5 – C6 HCs		C1 – C4 HCs	
68512-91-4	> 100%	> 100%	2,538	3,378	Positive	Positive	Positive	13,580	230,867	9,137	12,162
	1,3-Butadiene		C1 – C4 HCs		Contains up to 0.5% 1,3-butadiene			C5 – C6 HCs		C1 – C4 HCs	
68513-12-2	11,123	14,925	2,781	3,731	Negative	Negative	Negative	115,433	> 100%	10,011	13,433
	no lethality		C1 – C4 HCs		No genotoxic constituents			C5 – C6 HCs		C1 – C4 HCs	
68513-15-5	> 100%	> 100%	2,000	> 100%	Positive	Positive	Positive	4,000	> 100%	10,922	24,658
	Benzene		Benzene		Contains up to 0.5% benzene			Benzene		C1 – C4 HCs	
68513-17-7	1,611	6,040	3,034	7,353	Negative	Negative	Negative	5,247	19,676	10922	26,471
	no lethality		C1 – C4 HCs		No genotoxic constituents			C5 – C6 HCs		C1 – C4 HCs	
68513-65-5	> 100%	> 100%	2,500	2,564	Positive	Positive	Positive	173,150	> 100%	9,000	9,231
	1,3-Butadiene		C1 – C4 HCs		Contains up to 0.5% 1,3-butadiene			C5 – C6 HCs		C1 – C4 HCs	
68513-66-6	> 100%	> 100%	2,809	3,650	Positive	Positive	Positive	11,171	31,482	10,112	13,139
	1,3-Butadiene		C1 – C4 HCs		Contains up to 0.5% 1,3-butadiene			C5 – C6 HCs		C1 – C4 HCs	
68514-31-8	> 100%	> 100%	2,505	2,717	Positive	Positive	Positive	5,010	5,435	9,018	9,783
	1,3-Butadiene		C1 – C4 HCs		Contains up to 3% 1,3-butadiene			NOAEL†		C1 – C4 HCs	
68514-36-3	> 100%	> 100%	2,503	2,577	Positive	Positive	Positive	5,005	5,155	9,009	9,278
	1,3-Butadiene		C1 – C4 HCs		Contains up to 3% 1,3-butadiene			NOAEL†		C1 – C4 HCs	
68527-16-2	10,000	10,526	2,500	2,632	Negative	Negative	Negative	5,000	5,263	9,000	9,474
	no lethality		C1 – C4 HCs		No genotoxic constituents			NOAEL†		C1 – C4 HCs	

68527-19-5	> 100%	> 100%	2,503	2,632	Positive	Positive	Positive	173,150	>100%	9,009	9,474
	1,3-Butadiene		C1 – C4 HCs		Contains up to 3% 1,3-butadiene			C5 – C6 HCs		C1 – C4 HCs	
68602-83-5	> 100%	> 100%	2,583	3,597	Positive	Positive	Positive	15,057	138,520	9,298	12,950
	1,3-Butadiene		C1 – C4 HCs		Contains up to 2% 1,3-butadiene			C5 – C6 HCs		C1 – C4 HCs	
68606-24-6	> 100%	> 100%	2,735	4,464	Positive	Positive	Positive	8,658	40,741	9,847	16,071
	1,3-Butadiene		C1 – C4 HCs		Contains up to 4% 1,3-butadiene			C5 – C6 HCs		C1 – C4 HCs	
68606-25-7	> 100%	> 100%	2,500	2,525	Positive	Positive	Positive	5,000	5,051	9,000	9,091
	1,3-Butadiene		C1 – C4 HCs		Contains up to 1% 1,3-butadiene			NOAEL†		C1 – C4 HCs	
68606-26-8	10,000	10,000	2,500	2,500	Negative	Negative	Negative	5,000	5,000	9,000	9,000
	no lethality		C1 – C4 HCs		No genotoxic constituents			NOAEL†		C1 – C4 HCs	
68606-27-9	> 100%	> 100%	2,503	2,688	Positive	Positive	Positive	173,150	>100%	9,009	9,677
	1,3-Butadiene		C1 – C4 HCs		Contains up to 4% 1,3-butadiene			C5 – C6 HCs		C1 – C4 HCs	
68606-34-8	430,000	860,000	2,941	3,676	Positive	Positive	Positive	173,150	>100%	10,588	13,235
	1,3-Butadiene		C1 – C4 HCs		Contains up to 30% 1,3-butadiene			C5 – C6 HCs		C1 – C4 HCs	
68783-61-9	> 100%	> 100%	2,750	4,545	Positive	Positive	Positive	9,113	40,741	9,901	16,364
	1,3-Butadiene		C1 – C4 HCs		Contains up to 0.5% 1,3-butadiene			C5 – C6 HCs		C1 – C4 HCs	
68783-64-2	> 100%	> 100%	2,709	4,545	Positive	Positive	Positive	8,658	45,566	9,751	16,364
	1,3-Butadiene		C1 – C4 HCs		Contains up to 4% 1,3-butadiene			C5 – C6 HCs		C1 – C4 HCs	
68783-65-3	> 100%	> 100%	2,503	2,660	Positive	Positive	Positive	173,150	> 100%	9,009	9,574
	1,3-Butadiene		C1 – C4 HCs		Contains up to 4% 1,3-butadiene			C5 – C6 HCs		C1 – C4 HCs	
68918-98-9	10,101	11,765	2,525	2,941	Negative	Negative	Negative	5,051	5,882	9,091	10,588
	no lethality		C1 – C4 HCs		No genotoxic constituents			NOAEL†		C1 – C4 HCs	
68918-99-0	2,953	15,866	2,709	4,630	Negative	Negative	Negative	9,619	51,687	9,751	16,667
	no lethality		C1 – C4 HCs		No genotoxic constituents			C5 – C6 HCs		C1 – C4 HCs	
68919-00-6	2531	15,866	2,680	4,310	Negative	Negative	Negative	8,245	51,687	9,646	15,517
	no lethality		C1 – C4 HCs		No genotoxic constituents			C5 – C6 HCs		C1 – C4 HCs	
68919-05-1	2,531	15,866	2,680	4,310	Negative	Negative	Negative	8,245	51,687	9,646	15,517
	no lethality		C1 – C4 HCs		No genotoxic constituents			C5 – C6 HCs		C1 – C4 HCs	
68919-06-2	10,000	10,204	2,500	2,551	Negative	Negative	Negative	173,150	> 100%	9,000	9,184
	no lethality		C1 – C4 HCs		No genotoxic constituents			C5 – C6 HCs		C1 – C4 HCs	
68919-10-8	10,101	11,364	2,525	2,841	Negative	Negative	Negative	173,150	> 100%	9,091	10,227
	no lethality		C1 – C4 HCs		No genotoxic constituents			C5 – C6 HCs		C1 – C4 HCs	
68919-16-4	68,500	> 100%	50	1,000	Positive	Positive	Positive	100	2,000	1,500	30,000
	Benzene		Benzene		Contains up to 20% benzene			Benzene		Benzene	
68919-19-7	10,000	10,204	2,500	2,551	Negative	Negative	Negative	173,150	> 100%	9,000	9,184
	no lethality		C1 – C4 HCs		No genotoxic constituents			C5 – C6 HCs		C1 – C4 HCs	
68919-20-0	10,000	10,000	2,500	2,500	Negative	Negative	Negative	5,000	5,000	9,000	9,000
	no lethality		C1 – C4 HCs		No genotoxic constituents			NOAEL†		C1 – C4 HCs	
68952-76-1	> 100%	> 100%	2,500	2,634	Positive	Positive	Positive	173,150	>100%	9,000	9,484
	1,3-Butadiene		C1 – C4 HCs		Contains up to 0.1% 1,3-butadiene			C5 – C6 HCs		C1 – C4 HCs	

68952-81-8	> 100%	> 100%	2,000	> 100%	Positive	Positive	Positive	4,000	> 100%	10,033	27,027
	Benzene		Benzene		Contains up to 0.5% benzene			Benzene		C1 – C4 HCs	
68952-82-9	> 100%	> 100%	2,000	> 100%	Positive	Positive	Positive	4,000	> 100%	10,033	26,087
	Benzene		Benzene		Contains up to 0.5% benzene			Benzene		C1 – C4 HCs	
68955-28-2	215,000	322,500	4,167	6,579	Positive	Positive	Positive	173,150	> 100%	15,000	23,684
	1,3-Butadiene		C1 – C4 HCs		Contains up to 60% 1,3-butadiene			C5 – C6 HCs		C1 – C4 HCs	
68955-34-0	10,000	10,000	2,500	2,500	Negative	Negative	Negative	5,000	5,000	9,000	9,000
	no lethality		C1 – C4 HCs		No genotoxic constituents			NOAEL†		C1 – C4 HCs	
68956-54-7	430,000	> 100%	2,778	3,571	Positive	Positive	Positive	3,333	10,000	10,000	12,857
	1,3-Butadiene		C1 – C4 HCs		Contains up to 30% 1,3-butadiene			NOAEL†		C1 – C4 HCs	
71329-37-8	> 100%	> 100%	2,735	4,545	Positive	Positive	Positive	8,658	42,753	9,847	16,364
	1,3-Butadiene		C1 – C4 HCs		Contains up to 5% 1,3-butadiene			C5 – C6 HCs		C1 – C4 HCs	
71808-30-5	> 100%	> 100%	2,577	3,289	Positive	Positive	Positive	18,226	138,520	9,278	11,842
	1,3-Butadiene		C1 – C4 HCs		Contains up to 4% 1,3-butadiene			C5 – C6 HCs		C1 – C4 HCs	

[1] Repeated-dose, developmental, and reproductive toxicity numerical ranges represent LOAEL values unless other wise noted with the symbol †

† Numerical ranges represent NOAEL values; endpoint ranges for these petroleum hydrocarbon gases are based on the highest concentration tested for the constituent with the lowest NOAEL; no developmental and/or reproductive toxicity was observed for any constituents of these gases

[2] Minimum and Maximum Toxicity Values represent the concentration ranges of the constituent with the highest degree of toxicity per SIDS endpoint in the specific petroleum hydrocarbon gas; see Appendix 5 (separate EXCEL file) for calculations

[3] Acute toxicity numerical ranges represent measured LC50 values from experiments where mortality was observed unless the most toxic constituent is listed as "no lethality"; "no lethality" indicates that no mortality was observed at the highest concentration of any of the individual petroleum hydrocarbon gas constituents tested; consequently this is not a true LC_{50} value range, but rather the range for the highest concentrations tested in a standard LC_{50} assay; the petroleum hydrocarbon gas constituent/constituent fraction with the lowest 'no lethality' value was selected to characterize the acute toxicity for these CASRN (see Section 7.6 for further explanation)

[4] Petroleum Hydrocarbon Gas constituent/constituent fraction responsible for respective endpoint toxicity range for each petroleum hydrocarbon gas CASRN; endpoint ranges are based on dilution calculations; note that the constituent characterizing toxicity may vary by endpoint for the same CASRN; see Appendix 5 (separate EXCEL file)

[5] When C1 – C4 HCs was the constituent characterizing reproductive toxicity, it was assumed that 100% of the C1 – C4 HC fraction was isobutane. This is a worst case approach as other alkane gases did not produce reproductive effects when tested in studies of similar design.

[6] Calculated dilution concentration was greater than 1,000,000 ppm; it would require more than 100% of the gas to cause the respective endpoint effect; note, asphyxiation would occur first at concentrations that reduce oxygen concentrations to approximately < 18% (<180,000 ppm)