

Table 1: Properties of non Ozone Depleting Extinguishing Agents

Name	FE-13™ (HFC-23)	FE-25™ (HFC-125)	FM-200™ (HFC-227ea)	FE-36™ (HFC236fa)	ITM	BTM	BCF
Chemical Formula	CF ₃ H	CF ₃ CF ₂ H	CF ₃ CFHCF ₃	CF ₃ CH ₂ CF ₃	CF ₃ I	CF ₃ Br	CF ₂ ClBr
Halon No.	13	25	37	36	(13001)	1301	1211
Refrigerant No.	23	125	227ea	236fa	1311	13B1	12B1
ODP (CFC11 = 1)	0	0	0	0	0.0001	12-13	5.1
100 Year GWP (CO ₂ = 1)	11,700	2,800	2,900	6,300	<1	5,400	
Atmospheric Lifetime (years)	264	32.6	36.5	209	<0.005	65	20
Molecular Weight	70.01	120.02	170.03	152.04	195.91	148.90	165.36
Boiling Point (°C)	-82.0	-48.3	-16.36	-1.4	-22.5	-57.8	-4
Freezing Point (°C)	-155	-103	-131	-103	-78	-168.0	-160.5
Vapor Pressure (bar(a) at 25°C)	45.2	13.1	4.5	2.724	5.4	16.0	2.8
Liquid Density (g.cm ⁻³ at 25°C)	0.67	1.190	1.43	1.360	2.096	1.54	1.8
Critical Temperature (°C)	25.9	66.3	101.7	124.9	100	67	153.8
Critical Pressure (bar(a))	48.4	35.9	28.7	32	4.04	39.6	41.0
Critical Density (g.cm ⁻³)	0.53	0.571	0.621	0.5553		0.745	0.713
Heat of Vaporization (J.g ⁻¹ @ Bpt)	240	164.4	132.6	160.0	112.3	121	137
Specific Heat Liquid (J.g ⁻¹ .K ⁻¹ @ 25°C)	1.377 @-40°C	1.26	1.102	1.1085		0.883	0.783
Specific Heat Vapor (J.g ⁻¹ .K ⁻¹ @ 25°C)	0.888 @-40°C	0.800	0.777	0.8444	0.361	0.473	0.460
Inhalation Toxicity (volume%)	>65	>70	>79	>18.9	27.4	80	13
Lowest Concentration Causing an Adverse Cardiotoxic Effect (LOAEL, volume%)	>50	10.0	10.5	15	^{0.4}	7.5	1.0
Highest Concentration Causing No Adverse Cardiotoxic Effect (NOAEL, volume%)	30	7.5	9.0	10	0.2	5.0	0.5
Safety Ratio (NOAEL/Design Concentration)	2.0	0.69	1.2	1.6	0.06	1.3	0.12
EPA SNAP List Approval	Yes	Yes [†]	Yes	Yes	Yes [†]	N/A	N/A
Heptane Cupburner (volume%)	12.4	9.0	6.4	6.3	3.0	3.3	3.6
Methanol Cupburner (volume%)	16.3	12.4	10.0	7.4	3.8	5.9	8.2
Inerting Conc. (volume%) Propane	19.8	15.7	11.5		6.5	7.7	5.9
Mass Equivalence Relative to Halon 1301	1.8	2.2	2.2	1.8	1.2	1.0	1.2
Liquid Volume Equivalence Rel. to 1301	4.1	2.7	2.4	2.0	0.9	1.0	1.0
Company	DuPont	DuPont	Great Lakes	DuPont	AJAY	-	-

* 15 minute exposure

† Unoccupied applications only