

Refrigerants.

Product data summary.



Product information

Type	Product R-Number	Other Common Names	ODP ¹	GWP ²	Boiling Point ³ @ 1atm (°C)	Critical Temp ³ Tc (°C)	Critical Pressure ³ (bara)	ASHRAE Safety Group	Compatible Oils	Retrofit replacement for
HCFC	22		0.055	1810	-41	96	50	A1	MO,AB	
	123		0.060	77	28	184	37	B1	MO	R11, R113
	401A	Suva [®] MP39	0.033	1182	-33	107	46	A1	MO, AB	R12
	401B	Suva [®] MP66	0.036	1288	-35	106	47	A1	MO, AB	R12
	402A	HP80	0.019	2788	-49	76	42	A1	MO, AB	R502
	402B	HP81	0.030	2416	-47	83	45	A1	MO, AB	R502
	408A	Forane [®] FX10	0.024	3152	-44	83	43	A1	MO, AB, POE	R502
	409A	Forane [®] FX56	0.046	1909	-34	107	45	A1	MO, AB, POE	R12
HFC	23		0	14800	-80	26	48	A1	POE	R13
	32		0	675	-52	78	58	A2	POE	
	134a		0	1430	-26	101	41	A1	PAG-Auto, POE	R12*, R22*
	404A	Suva [®] HP62	0	3922	-47	72	37	A1	POE	R22*, R502*
	407A	Klea [®] 60	0	2107	-46	82	45	A1	POE	R22*, R404A
	407C	Suva [®] 9000	0	1774	-44	86	46	A1	POE	R22*
	407F	Performax [™] LT	0	1825	-46	83	48	A1	POE	R22*, R404A
	410A	Genetron [®] AZ-20	0	2088	-51	71	49	A1	POE	R13B1*
	417A	ISCEON [®] M059	0	2346	-39	87	40	A1	MO, AB, POE	R22
	422A	ISCEON [®] M079	0	3143	-47	72	37	A1	MO, AB, POE	R22, R502, HCFC blends
	422D	ISCEON [®] M029 [™]	0	2729	-43	80	39	A1	MO, AB, POE	R22
	423A	ISCEON [®] 39TC [®]	0	2280	-24	100	36	A1	POE	R12
	424A	RS-44	0	2440	-39	86	40	A1	MO, AB, POE	R22
	427A	Forane [®] FX100	0	2138	-43	85	44	A1	MO, AB, POE	R22*
	428A	RS-52	0	3607	-47	69	37	A1	MO, AB, POE	R22, R502, HCFC blends
	434A	RS-45	0	3245	-45	75	38	A1	MO, AB, POE	R22
	437A	ISCEON [®] M049Plus [™]	0	1805	-29	96	41	A1	MO, AB, POE	R12, HCFC blends
	438A	ISCEON [®] M099 [™]	0	2265	-42	85	43	A1	MO, AB, POE	R22
	442A	RS-50	0	1888	-47	82	48	A1	POE	R404A, R507A
	507A	Genetron [®] AZ-50	0	3985	-47	71	37	A1	POE	R502*, R22*
508B	Suva [®] 95	0	13396	-88	11	38	A1	POE	R503*, R13*	
M089	ISCEON [®] M089	0	3805	-53	64	36	TBC (A1)	MO, AB, POE	R13B1	
HFO	1234yf	Opteon [®] YF, Solstice [™] yf	0	4	-29	95	34	A2	PAG-Auto, POE	
	1234ze	Solstice [™] ze	0	6	-19	109	36	A2	POE	
Natural /not in kind	170	Ethane	0	6	-89	32	49	A3	MO, AB, POE	
	290	Propane, CARE [®] 40	0	3	-42	97	43	A3	MO, AB, POE	
	600a	Isobutane, CARE [®] 10	0	3	-12	135	36	A3	MO, AB, POE	
	717	Ammonia	0	0	-33	132	113	B2	Consult OEM	
	744	Carbon Dioxide	0	1	-57	31	74	A1	Consult OEM	
	1150	Ethylene, Ethene	0	4	-104	9.2	50	A3	MO, AB, POE	
	1270	Propylene, Propene, CARE [®] 45	0	2	-48	91	46	A3	MO, AB, POE	

*When carrying out a retrofit replacement, an oil change will be necessary. For more details see retrofit information.

1 Ozone Depletion Potential, UNEP (2006). R11 = 1

2 Global Warming Potential (100 year), IPCC 4th Assessment Report, 2007. CO₂ = 1

Common applications

Type	Product R-Number	Refrigeration				Air Conditioning			Centrifugal chillers	Mobile
		V.low temp	Low temp	Med temp	High temp	Residential & Light	DX Chillers			
HCFC	22		✓ (2-stage)	✓	✓	✓	✓	✓		
	123							✓		
	401A			✓	✓	✓	✓			
	401B		(✓)	✓						
	402A		✓	(✓)						
	402B		✓	✓						
	408A		(✓)	✓						
	409A			✓	✓	✓	(✓)	✓		
HFC	23	✓								
	32		✓			✓				
	134a			✓	✓	✓	✓	✓	✓	
	404A		✓	✓						
	407A		✓	✓						
	407C		(✓)	✓	(✓)	✓	✓			
	407F		✓	✓						
	410A	✓ (2-stage)	✓	✓		✓	✓	(✓)		
	417A			✓		✓	✓			
	422A		✓	✓						
	422D		(✓)	✓	(✓)	✓	✓			
	423A							✓		
	424A			✓	✓	✓	✓			
	427A		(✓)	✓	✓	✓	✓			
	428A		✓							
	434A			✓	✓		✓			
	437A			✓	✓	✓	✓		✓	
	438A		(✓)	✓	(✓)	✓	✓			
	442A		✓	✓						
	507A		✓	✓				(✓)		
508B	✓									
M089	✓									
HFO	1234yf			✓	✓	✓	✓		✓	
	1234ze			✓	✓	✓	✓			
Natural/not in kind	170	✓								
	290		✓	✓	✓	✓	✓			
	600a			✓	✓					
	717		✓	✓	(✓)		✓	✓		
	744		✓	✓	(✓)		✓	✓	✓	
	1150	✓								
	1270		✓	✓	(✓)					

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