

Refrigerants - Chlorofluorohydrocarbons (CFCs)

Chlorofluorohydrocarbons (CFCs) are ozone-depleting substances that were used primarily in air-conditioning and refrigeration systems. Under the Clean Air Act, CFCs were to be phased out of production in the U.S. by January 1, 1996. In order to monitor various refrigerants that may be present in the environment, the following single and multi-component mixes are offered to help labs screen for these compounds.

Compound	CAS No.	Conc.	Solvent	Cat. No.	1 mL
Bromochlorodifluoromethane	353-59-3	0.2 mg/mL	MeOH	M-REF-X-01	
Bromotrifluoromethane (Freon #13b1)	75-63-8	0.2 mg/mL	MeOH	M-REF-01	
1-Chloro-1,1-difluoroethane (Freon #142b)	75-68-3	0.2 mg/mL	MeOH	M-REF-02	
2-Chloro-1,1,1,2-tetrafluoroethane (Freon #124)	2837-89-0	0.2 mg/mL	MeOH	M-REF-X-02	
Chlorodifluoromethane (Freon #22)	75-45-6	0.2 mg/mL	MeOH	M-REF-03	
Chloroethane (Freon #160)	75-00-3	0.2 mg/mL	MeOH	M-REF-04	
Chloromethane	74-87-3	0.2 mg/mL	MeOH	M-REF-05	
Chloropentafluoroethane	76-15-3	0.2 mg/mL	MeOH	M-REF-06	
Chlorotrifluoromethane (Freon #13)	75-72-9	0.2 mg/mL	MeOH	M-REF-07	
1,2-Dibromotetrafluoroethane	124-73-2	0.2 mg/mL	MeOH	M-REF-X-03	
1,1-Dichloro-1-fluoroethane (Freon #141B)	1717-00-6	0.2 mg/mL	MeOH	M-REF-X-04	
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon #114)	76-14-2	0.2 mg/mL	MeOH	M-REF-10	
2,2-Dichloro-1,1,1-trifluoroethane (Freon #123)	306-83-2	0.2 mg/mL	MeOH	M-REF-X-05	
Dichlorodifluoromethane (Freon #12)	75-71-8	0.2 mg/mL	MeOH	M-REF-08	
Dichlorofluoromethane (Freon #21)	75-43-4	0.2 mg/mL	MeOH	M-REF-09	
1,1-Difluoroethane (Freon 152a)	75-37-6	0.2 mg/mL	MeOH	M-REF-11	
Pentafluoroethane (Freon #125)	354-33-6	0.2 mg/mL	MeOH	M-REF-X-06	
1,1,2,2-Tetrafluoroethane (Freon #134)	359-35-3	0.2 mg/mL	MeOH	M-REF-X-07	
Tetrafluoroethane	811-97-2	0.2 mg/mL	MeOH	M-REF-12	
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.2 mg/mL	MeOH	M-REF-14	
		2.0 mg/mL	MeOH	M-REF-14-10X	
Trichlorofluoromethane	75-69-4	0.2 mg/mL	MeOH	M-REF-13	
1,1,1-Trifluoroethane (Freon #143A)	420-46-2	0.2 mg/mL	MeOH	M-REF-X-08	
Trifluoromethane (Freon #23)	75-46-7	0.2 mg/mL	MeOH	M-REF-15	



Refrigerant Solutions (CFCs)

Individuals

Each at 0.2 mg/mL in MeOH

1 mL

Set

M-REF-SET

15 x 1 mL

Each at 0.2 mg/mL in MeOH

(below 15 comps.)

Multi-Component Solution

M-REF

1 x 1 mL

0.2 mg/mL each in MeOH

(below 15 comps.)

Freon #	Compound	Cat. No.
13b1	Bromotrifluoromethane (01)	M-REF-01
142b	1-Chloro-1,1-difluoroethane (02)	M-REF-02
22	Chlorodifluoromethane (03)	M-REF-03
160	Chloroethane (04)	M-REF-04
40	Chloromethane (05)	M-REF-05
115	Chloropentafluoroethane (06)	M-REF-06
13	Chlorotrifluoromethane (07)	M-REF-07
12	Dichlorodifluoromethane (08)	M-REF-08
21	Dichlorofluoromethane (09)	M-REF-09
114	1,2-Dichloro-1,1,2,2-tetrafluoroethane (10)	M-REF-10
152a	1,1-Difluoroethane (11)	M-REF-11
134a	Tetrafluoroethane (12)	M-REF-12
11	Trichlorofluoromethane (13)	M-REF-13
113	1,1,2-Trichloro-1,2,2-trifluoroethane (14)	M-REF-14
23	Trifluoromethane (15)	M-REF-15

Additional Individual Refrigerant Solutions (CFCs)

Individuals

Each at 0.2 mg/mL in MeOH

1 mL

Set

M-REF-X-R1-SET

set of 9 x 1 mL

Each at 0.2 mg/mL in MeOH

(below 9 comps.)

Multi-Component Solution

M-REF-X

1 x 1 mL

0.2 mg/mL each in MeOH

(below 8 comps., not including Freon 113a)

Freon #	Compound	Cat. No.
12B1	Bromochlorodifluoromethane	M-REF-X-01
124	2-Chloro-1,1,1,2-tetrafluoroethane	M-REF-X-02
114B2	1,2-Dibromotetrafluoroethane	M-REF-X-03
141b	1,1-Dichloro-1-fluoroethane	M-REF-X-04
123	2,2-Dichloro-1,1,1-trifluoroethane	M-REF-X-05
125	Pentafluoroethane	M-REF-X-06
134	1,1,2,2-Tetrafluoroethane	M-REF-X-07
113a	1,1,1-Trichlorotrifluoroethane (Freon 113a)	M-REF-X-09
143a	1,1,1-Trifluoroethane	M-REF-X-08