

Fluorocarbons and Sulphur hexafluoride

Products and main applications

Major HFC - HCFC - PFC – SF₆ - HFO molecules

Major HFC molecules

Designation	Complete name	Formula	CAS number	GWP ⁱ TAR ⁱⁱ values referen ced in F-Gas Regula tion	GWP AR4 ⁱⁱⁱ values	Main applications
HFC-125	1,1,1,2,2-Pentafluoroethane	CF ₃ CHF ₂	354-33-6	3400	3500	<ul style="list-style-type: none"> Blend component for stationary Air-conditioning and Commercial Refrigeration and heat pumps Firefighting Agent
HFC-134a	1,1,1,2-Tetrafluoroethane	CH ₂ FCF ₃	811-97-2	1300	1430	<ul style="list-style-type: none"> Refrigerant for Mobile and for Domestic Refrigerators/Freezers. Blend component for Stationary-Air conditioning and commercial refrigeration Propellant for Pharmaceutical Aerosols and for Industrial Aerosols Blowing agent component for Extruded polystyrene foams (XPS)
HFC-143a	1,1,1-trifluoroethane	CF ₃ CH ₃	420-46-2	4300	4470	<ul style="list-style-type: none"> Blend component for Commercial Refrigeration
HFC-152a	1,1-difluoroethane	CH ₃ CHF ₂	75-37-6	120	124	<ul style="list-style-type: none"> Propellant for specialized Industrial Aerosols Blowing agent component for Extruded polystyrene foams (XPS)
HFC-227ea	1,1,1,2,3,3,3-heptafluoro-propane	CF ₃ CHFCF ₃	431-89-0	3500	3220	<ul style="list-style-type: none"> Propellant for Pharmaceutical Aerosols Firefighting Agent
HFC-236fa	1,1,1,3,3,3-hexafluoropropane	CF ₃ CH ₂ CF ₃	290-39-1	9400	9810	<ul style="list-style-type: none"> Firefighting Agent
HFC-245fa	1,1,1,3,3-pentafluoropropane	CF ₃ CH ₂ CH F ₂	460-73-1	950	1030	<ul style="list-style-type: none"> Foam Blowing agent for Polyurethane (PUR) foams Working fluid for Organic Rankine Cycles (ORC)
HFC-365mfc	1,1,1,3,3-pentafluorobutane	CF ₃ CH ₂ CF ₂ CH ₃	406-58-6	890	794	<ul style="list-style-type: none"> Foam Blowing agent for Polyurethane (PUR) and phenolic foams. Blend component for Solvents
HFC-43-10mee	1,1,1,2,2,3,4,5,5,5-decafluoropentane	CF ₃ CHF ₂ C HFCH ₂ FCF ₃	138495-42	1500	1640	<ul style="list-style-type: none"> Solvent for specialized applications
HFC-23	trifluoromethane	CHF ₃	75-46-7	12000	14800	<ul style="list-style-type: none"> By product in production of HCFC-22 and aluminum smelting Low temperature specialist Refrigerant Firefighting agent
HFC-32	difluoromethane	CH ₂ F ₂	75-10-5	550	675	<ul style="list-style-type: none"> Blend component for Air-conditioning equipment and Commercial refrigeration and Heat pumps

ⁱ See [Selecting and Using GWP Values](#)

ⁱⁱ IPCC Third Assessment [Report GWP values](#)

ⁱⁱⁱ IPCC Fourth Assessment Report GWP values

Major HFO Molecules

Designation	Complete name	Formula	CAS number	GWP Producers data	Main <i>potential</i> applications
HFO 1234yf	2,3,3,3-tetrafluoroprop-1-ene	CF ₃ CF=CH ₂	754-12-1	4	<ul style="list-style-type: none"> • Mobile air-conditioning, stationary air conditioning and refrigeration
HFO 1234zeE	trans-1,3,3,3-tetrafluoroprop-1-ene	Trans-CF ₃ CH=CFH	29118-24-9	6	<ul style="list-style-type: none"> • Aerosol Propellants, refrigeration and air conditioning, insulation foams

Major HCFC molecules

Designation	Complete name	Formula	CAS number	GWP ⁱ AR4 values	Main applications
HCFC-22	Chlorodifluoromethane	CHClF ₂	75-45-6	1810	<ul style="list-style-type: none"> • Only to be used as recycled or reclaimed refrigerant for servicing existing equipment until end 2014
HCFC-123	2,2-dichloro-1,1,1,1-trifluoroethane	CHCl ₂ CF ₃	306-83-2	77	<ul style="list-style-type: none"> • Used as Refrigerant in existing large chillers • Firefighting Agent
HCFC-124	1-chloro-1,2,2,2-tetrafluoroethane	CHClF-CF ₃	20837-89-0	609	<ul style="list-style-type: none"> • Only to be used as recycled or reclaimed refrigerant
HCFC-141b	1,1-dichloro-1-fluoroethane	CCl ₂ FCH ₃	1717-00-6	725	<ul style="list-style-type: none"> • Previously used in the EU as Blowing agent for polyurethane and phenolic foams
HCFC-142b	1-chloro-1,1 -difluoro-ethane	CClF ₂ CH ₃	75-68-3	2310	<ul style="list-style-type: none"> • Previously used in the EU as Blowing agent component for polyurethane foams (PUR) and for extruded polystyrene foams (XPS)

ⁱ IPCC Fourth Assessment [Report GWP values](#)

Major PFC molecules

Designation	Complete name	Formula	CAS number	GWP ⁱ AR4 values	Main applications
PFC 14	Perfluoromethane	CF ₄	75-73-0	7390	<ul style="list-style-type: none"> • Semiconductor industry
PFC 116	Perfluoroethane	CF ₂ F ₆	76-16-4	12200	<ul style="list-style-type: none"> • Semiconductor industry • Specialist low temperature refrigerant

PFC 218	Perfluoropropane	C ₃ F ₈	76-19-7	8830	<ul style="list-style-type: none"> • Semiconductor industry
PFC 3-1-10	Perfluorobutane	C ₄ F ₁₀	355-25-9	8860	<ul style="list-style-type: none"> • Physics research
PFC -318	Perfluorocyclobutane	c-C ₄ F ₈	415-25-3	10300	<ul style="list-style-type: none"> • Semiconductor industry
PFC-4-1-12	Perfluoropentane	C ₅ F ₁₂	678-26-2	9160	<ul style="list-style-type: none"> • Medical applications
PFC-5-1-14	Perfluorohexane	C ₆ F ₁₄	355-42-10	9300	<ul style="list-style-type: none"> • Heat transfer fluid • Polymer solvent applications

ⁱ IPCC Fourth Assessment [Report GWP values](#)

SF₆

Designation	Complete name	Formula	CAS number	GWP ⁱ AR4 values	Main applications
SF6	Sulphur Hexafluoride	SF ₆	2551-62-4	22,800	<ul style="list-style-type: none"> • Insulating gas in high voltage switch gear • Blanket gas for Magnesium production • Etching and cleaning in the Semiconductors Industry

ⁱ IPCC Fourth Assessment [Report GWP values](#)