

## Detectable List Gases for LS4000IR

ASHRAE Number	Name	Formula	CAS number
R-12	Dichlorodifluoromethane	$\text{CCl}_2\text{F}_2$	75-71-8
R-23	Trifluoromethane (Fluoroform)	$\text{CHF}_3$	75-46-7
R-22	Chlorodifluoromethane	$\text{CHClF}_2$	75-45-6
R-32	Difluoromethane	$\text{CH}_2\text{F}_2$	
R-113	1,1,2-Trichlorotrifluoroethane	$\text{C}_2\text{F}_3\text{Cl}_3$	76-13-1
R-113a	1,1,1-Trichlorotrifluoroethane	$\text{C}_2\text{F}_3\text{Cl}_3$	354-58-5
R-121	1,1,2,2-Tetrachloro-1-fluoroethane	$\text{C}_2\text{HFCl}_4$	354-14-3
R-121a	1,1,1,2-Tetrachloro-2-fluoroethane	$\text{C}_2\text{HFCl}_4$	354-11-0
R-122	1,1,2-Trichloro-2,2-difluoroethane	$\text{C}_2\text{HF}_2\text{Cl}_3$	354-21-2
R-122a	1,1,2-Trichloro-1,2-difluoroethane	$\text{C}_2\text{HF}_2\text{Cl}_3$	354-15-4
R-122b	1,1,1-Trichloro-2,2-difluoroethane	$\text{C}_2\text{HF}_2\text{Cl}_3$	354-12-1
R-123	2,2-Dichloro-1,1,1-trifluoroethane	$\text{C}_2\text{HF}_3\text{Cl}_2$	306-83-2
R-123a	1,2-Dichloro-1,1,2-trifluoroethane	$\text{C}_2\text{HF}_3\text{Cl}_2$	354-23-4
R-123b	1,1-Dichloro-1,2,2-trifluoroethane	$\text{C}_2\text{HF}_3\text{Cl}_2$	812-04-4
R-124	2-Chloro-1,1,1,2-tetrafluoroethane	$\text{C}_2\text{HF}_4\text{Cl}$	2837-89-0
R-124a	1-Chloro-1,1,2,2-tetrafluoroethane	$\text{C}_2\text{HF}_4\text{Cl}$	354-25-6
R-125	Pentafluoroethane	$\text{C}_2\text{HF}_5$	354-33-6
R-E125	Pentafluorodimethyl ether	$\text{C}_2\text{HF}_5\text{O}$	3822-68-2
R-130	1,1,2,2-Tetrachloroethane	$\text{C}_2\text{H}_2\text{Cl}_4$	79-34-5
R-130a	1,1,1,2-Tetrachloroethane	$\text{C}_2\text{H}_2\text{Cl}_4$	630-20-6
R-131	1,1,2-Trichloro-2-fluoroethane	$\text{C}_2\text{H}_2\text{FCl}_3$	359-28-4
R-131a	1,1,2-Trichloro-1-fluoroethane	$\text{C}_2\text{H}_2\text{FCl}_3$	811-95-0
R-131b	1,1,1-Trichloro-2-fluoroethane	$\text{C}_2\text{H}_2\text{FCl}_3$	2366-36-1
R-132	Dichlorodifluoroethane	$\text{C}_2\text{H}_2\text{F}_2\text{Cl}_2$	25915-78-0
R-132a	1,1-Dichloro-2,2-difluoroethane	$\text{C}_2\text{H}_2\text{F}_2\text{Cl}_2$	471-43-2
R-132b	1,2-Dichloro-1,1-difluoroethane	$\text{C}_2\text{H}_2\text{F}_2\text{Cl}_2$	1649-08-7
R-132c	1,1-Dichloro-1,2-difluoroethane	$\text{C}_2\text{H}_2\text{F}_2\text{Cl}_2$	1842-05-3
R-132bB2	1,2-Dibromo-1,1-difluoroethane	$\text{C}_2\text{H}_2\text{Br}_2\text{F}_2$	75-82-1
R-133	1-Chloro-1,2,2-Trifluoroethane	$\text{C}_2\text{H}_2\text{F}_3\text{Cl}$	431-07-2
R-133a	1-Chloro-2,2,2-Trifluoroethane	$\text{C}_2\text{H}_2\text{F}_3\text{Cl}$	75-88-7
R-133b	1-Chloro-1,1,2-Trifluoroethane	$\text{C}_2\text{H}_2\text{F}_3\text{Cl}$	421-04-5
R-134	1,1,2,2-Tetrafluoroethane	$\text{C}_2\text{H}_2\text{F}_4$	359-35-3
R-134a	1,1,1,2-Tetrafluoroethane	$\text{C}_2\text{H}_2\text{F}_4$	811-97-2
R-245fa	1,1,1,3,3-Pentafluoropropane	$\text{C}_3\text{H}_3\text{F}_5$	460-73-1
R-400	R-12/R-114 (60/40 wt%)	binary blend	
R-401A	R-22/R-152a/R-124 (53/13/34)		
R-401B	R-22/R-152a/R-124 (61/11/28)		

R-401C	R-22/R-152a/R-124 (33/15/52)		
R-402A	R-125/R-290/R-22 (60/2/38)		
R-402B	R-125/R-290/R-22 (38/2/60)		
R-403A	R-290/R-22/R-218 (5/75/20)		
R-403B	R-290/R-22/R-218 (5/56/39)		
R-404A	R-125/R-143a/R-134a (44/52/4)		
R-405A	R-22/R-152a/R-142b/R-C318 (45/7/5.5/42.5)		
R-406A	R-22/R-600a/R-142b (55/04/41)		
R-407A	R-32/R-125/R-134a (20/40/40)		
R-407B	R-32/R-125/R-134a (10/70/20)		
R-407C	R-32/R-125/R-134a (23/25/52)		
R-407D	R-32/R-125/R-134a (15/15/70)		
R-407E	R-32/R-125/R-134a (25/15/60)		
R-407F	R-32/125/134a (30±2/30±2/40±2)		
R-408A	R-125/R-143a/R-22 (7/46/47)		
R-409A	R-22/R-124/R-142b (60/25/15)		
R-409B	R-22/R-124/R-142b (65/25/10)		
R-410A	R-32/R-125 (50/50)		
R-410B	R-32/R-125 (45/55)		
R-411A	R-1270/R-22/R-152a (1.5/87.5/11)		
R-411B	R-1270/R-22/R-152a (3/94/3)		
R-412A	R-22/R-218/R-142b (70/5/25)		
R-413A	R-218/R-134a/R-600a (9/88/3)		
R-414A	R-22/R-124/R-600a/R-142b (51/28.5/4.0/16.5)		
R-414B	R-22/R-124/R-600a/R-142b (50/39/1.5/9.5)		
R-415A	R-22/R-152a (82/18)		
R-415B	R-22/R-152a (25/75)		
R-416A	R-134a/R-124/R-600 (59/39.5/1.5)		
R-417A	R-125/R-134a/R-600 (46.6/50.0/3.4)		
R-418A	R-290/R-22/R-152a (1.5/96/2.5)		
R-419A	R-125/R-134a/R-E170 (77/19/4)		
R-420A	R-134a/R-142b (88/12)		
R-421A	R-125/R-134a (58/42)		
R-421B	R-125/R-134a (85/15)		
R-422A	R-125/R-134a/R-600a (85.1/11.5/3.4)		
R-422B	R-125/R-134a/R-600a (55/42/3)		
R-422C	R-125/R-134a/R-600a (82/15/3)		
R-422D	R-125/R-134a/R-600a (65.1/31.5/3.4)		
R-423A	R-134a/R-227ea (52.5/47.5)		
R-424A	R-125/R-134a/R-600a/R-600/R-601a (50.5/47/9/1/6)		
R-425A	R-32/R-134a/R-227ea (18.5/69.5/12)		
R-426A	R-125/R-134a/R-600/R-601a (5.1/93/1.3/6)		
R-427A	R-32/R-125/R-143a/R-134a (15/25/10/50)		
R-428A	R-125/R-143a/R-290/R-600a (77.5/20/6/1.9)		
R-449a	R32/R125/R1234yf/ R134a		

R-463a			
R-500	R-12/R-152a (73.8/26.2)		
R-501	R-22/R-12 (75/25)		
R-502	R-22/R-115 (48.8/51.2)		
R-507[A]	R-125/143a (50/50)	50% $C_2HF_5$ 50% $C_2H_3F_3$	AZ-50 <sup>[6][19]</sup>
R-610	<a href="#">Diethyl ether</a>	$C_2H_5OC_2H_5$	60-29-7
R-1234yf			
R1150	<a href="#">Ethylene</a>		
R1270	<a href="#">Propylene</a>		
E170	<a href="#">Dimethylether</a>		
SF6	<a href="#">Sulfur hexafluoride</a>	SF6	2551-62-4