

Table S1: Scale and data set definitions. Scales are typically named according to their source and year of adoption. See Table 1 for laboratory abbreviations.

Additional data: 9.1: ADS MS at University of Bristol; 9.2: MS at Mace Head, Ireland; 17.1: MD at Cape Grim, Tasmania;

17.2: MS at Cape Grim, Tasmania; 11.1 Univ. Urbino converted to SIO-05 scales, when possible.

Lab #		N2O	SF6	CFC-12	CFC-11	CFC-113	CFC-114	CFC-115	CFC13	CH3CCI3	CCl4	HCFC-22	HCFC-141b
1	NOAA	NOAA-06	NOAA-06	NOAA-08	NOAA-92	NOAA-03				NOAA-03	NOAA-08		
1.1	NOAA MS					NOAA-MS				NOAA-03		NOAA-06	NOAA-94
2	SIO MD	SIO-98		SIO-05	SIO-05	SIO-05				SIO-05	SIO-05		
2.1	SIO MS		SIO-05	SIO-05	SIO-05	SIO-05	SIO-05	SIO-05		SIO-05	SIO-05	SIO-05	SIO-05
3	SAWS	NOAA-06		NOAA-08	NOAA-92	NOAA-03				NOAA-03	NOAA-08		
4	ENEA		NOAA-06									NOAA-06	NOAA-94
5	EC	NOAA-06	NOAA-06										
6	UM-1			SIO-05	SIO-05	SIO-05				SIO-05	SIO-05		
6.1	UM-1			NOAA-08	NOAA-92	NOAA-03				NOAA-03	NOAA-08		
7	NIST	NIST-SRM		NIST-98	NIST-98	NIST-04				NIST-04	NIST-04		
8	KIT	NOAA-06											
9	UB MD	SIO-98		SIO-05	SIO-05	SIO-05				SIO-05	SIO-05		
9.1	UB MS1		SIO-05			SIO-05	SIO-05	SIO-05		SIO-05	SIO-05	SIO-05	SIO-05
9.2	UB MS2		SIO-05				SIO-05	SIO-05				SIO-05	SIO-05
10	UCI-1												
11	UU		UB-98	SIO-05	SIO-05	SIO-05	UB-98	UB-98		SIO-05	SIO-05	SIO-05	UB-98
11.1	UU (converted)		SIO-05				SIO-05	SIO-05					SIO-05
12	UF	NOAA-06	NOAA-06	NOAA-08	NOAA-92	NOAA-03				NOAA-03	NOAA-08	NOAA-06	NOAA-94
13	UH	SIO-98	UH										
14	EMPA	SIO-98	SIO-05	SIO-05	SIO-05	SIO-05	SIO-05	SIO-05		SIO-05	SIO-05	SIO-05	SIO-05
15	UM-2	NIST-SRM		NCAR/UM	NCAR/UM	NCAR/UM	NCAR-P	NCAR-P		NCAR/UM	NCAR/UM	NCAR/UM	NCAR/UM
16	NIES				NIES-05		NIES-05		NIES-05	NIES-05		NIES-05	NIES-05
17	CSIRO Gaslab	NOAA-92											
17.1	CSIRO MD	SIO-98	SIO-05	SIO-05	SIO-05	SIO-05				SIO-05	SIO-05		
17.2	CSIRO MS		SIO-05	SIO-05	SIO-05	SIO-05	SIO-05	SIO-05	provisional	SIO-05	SIO-05	SIO-05	SIO-05
18	NASA												
19	UCI-2			UCI-2	UCI-2	UCI-2	NCAR/UM			UCI-2	UCI-2	NCAR/UM	NCAR/UM

HCFC-142b	HFC-134a	HFC-152a	h1211	h1301	h2402	CHCl3	CH2Cl2	CH4	CH3Cl	CH3Br	CH3I	CH2Br2	CHBr3	Lab #
			NOAA-06					NOAA-04						1
NOAA-94	NOAA-95	NOAA-2004	NOAA-92	NOAA-06	NOAA	NOAA-03	NOAA-03		NOAA-03	NOAA-03	NOAA-04	NOAA-03	NOAA-03	1.1
						SIO-98		Tohoku Univ						2
SIO-05	SIO-05	SIO-05	SIO-05	SIO-05		SIO-98			SIO-05	SIO-05				2.1
								NOAA-04						3
NOAA-94	NOAA-95													4
								NOAA-04						5
														6
														6.1
						NIST-04		NIST-98						7
														8
						SIO-98		Tohoku Univ						9
SIO-05	SIO-05	SIO-05	SIO-05	SIO-05		SIO-98	UB-98		SIO-05	SIO-05				9.1
SIO-05	SIO-05	SIO-05	SIO-05	SIO-05		SIO-98			SIO-05	SIO-05				9.2
							UCI-1		UCI-1	UCI				10
UB-98	UB-98	UB-98	SIO-98	SIO-98		UB-98	UB-98		UB-98	UB-98				11
SIO-05	SIO-05	SIO-05	SIO-05	SIO-05					SIO-05	SIO-05				11.1
NOAA-94	NOAA-95		NOAA-06	NOAA-06		NOAA-03	NOAA-03		NOAA-03	NOAA-03	NOAA-04	NOAA-03	NOAA-03	12
								NOAA-04						13
SIO-05	SIO-05	SIO-05	SIO-05	SIO-05	NOAA-P	SIO-98	UB-98	NOAA-04	SIO-05	SIO-05				14
NCAR/UM	NCAR/UM		NCAR/UM	NCAR/UM	NCAR/UM	NCAR/UM	NCAR/UM	NIST-98	NCAR/UM	NCAR/UM	NCAR/UM	NCAR/UM	NCAR/UM	15
NIES-05	NIES-05	NIES-05				NIES-05			NIES-05	NIES-05	NIES-05			16
								NOAA-04						17
						SIO-98		Tohoku Univ						17.1
SIO-05	SIO-05	SIO-05	SIO-05	SIO-05	NOAA-P	SIO-98	UB-98		SIO-05	SIO-05				17.2
								NOAA-04						18
NCAR/UM	NCAR/UM		NCAR/UM		NCAR/UM	NCAR/UM	NCAR/UM		NCAR/UM	NCAR/UM	NCAR/UM	NCAR/UM	NCAR/UM	19