



Supplement of

Global emissions and abundances of chemically and radiatively important trace gases from the AGAGE network

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Table S1. Parameters used to estimate emissions and mole fraction trends for various species. The Overall Lifetime Uncertainty is taken from errors in the inverse lifetime estimates (see main text). Scale error is the assumed error in the measurement calibration scale and is generally a conservative estimate. The error in the repeatability of the measurements is an approximate mean repeatability of standard gas measurements over time. Growth Uncertainty is the uncertainty in the year to year growth of the emissions (see Section 7, main text) and the Sensitivity Frequency is the frequency at which the sensitivity of the mole fraction to emissions is derived. Errors and uncertainties are given as 1-sigma.

Species	Calibration Scale	Calibration Scale Error (%)	Overall Lifetime Uncertainty (%)	Measurement Repeatability (%)	Growth Uncertainty (%)	Sensitivity Frequency
CFC-11	SIO-05	1	10	0.16	20	quarterly
CFC-12	SIO-05	1	20	0.16	20	quarterly
CFC-13	METAS- 2017	3	68	2.17	20	yearly
CFC-113/a	SIO-05	1.5	20	0.42	20	quarterly
CFC-114/a	SIO-05	3	23	0.74	20	yearly
CFC-115	SIO-05	3	34	1.2	20	yearly
CH ₃ CCl ₃	SIO-05	3	14	2.56	20	quarterly
N ₂ O	SIO-16	0.5	10	0.12	20	quarterly
CH ₄	TU-87 / NOAA- 2004A	0.5	14.2	0.11	3	quarterly
HCFC-22	SIO-05	1	16.09	0.54	20	quarterly
HCFC-141b	SIO-05	2	14.81	0.71	20	quarterly
HCFC-142b	SIO-05	2	19.74	0.56	20	quarterly
HCFC-124	UB-98	2	19.74	4.85	20	yearly
HCFC-132b	METAS- 2017	14.14	50		10	yearly
HCFC-133a	Empa- 2013	14.14	10	–	100	yearly
CCl ₄	SIO-05	2	21	0.5	20	quarterly
HFC-23	SIO-07	3	20.94	0.85	20	quarterly
HFC-32	SIO-07	3	16.67	4.01	200	quarterly

Species	Calibration Scale	Sigma Scale Error (%)	Overall Lifetime Uncertainty (%)	Repeatability (%)	Growth Uncertainty (%)	Sensitivity Frequency
HFC-125	SIO-14	5	17.39	1.37	20	quarterly
HFC-134a	SIO-05	1.5	18.15	0.61	20	quarterly
HFC-143a	SIO-07	3	18.55	1.65	20	quarterly
HFC-152a	SIO-05	3	15.11	2.82	20	quarterly
HFC-227ea	SIO-14	8	21.04	6.0	20	quarterly
HFC-236fa	SIO-14	21	21.04	12.0	175	quarterly
HFC-245fa	SIO-14	8	21.61	9.0	20	quarterly
HFC-365mfc	SIO-14	14	21.04	15.0	100	quarterly
HFC-43-10mee	SIO-14	8	20	15.0	200	yearly
SF ₆	SIO-05	2	1	1.0	10	quarterly
SO ₂ F ₂	SIO-07	3	30	3.0	10	yearly
CF ₄	SIO-05	3	1	0.68	20	quarterly
C ₂ F ₆	SIO-07	3	1	0.68	20	quarterly
C ₃ F ₈	SIO-07	4	1	2.16	20	yearly
c-C ₄ F ₈	SIO-14	4	1	0.21	200	yearly
NF ₃	SIO-12	3	1	5.07	50	yearly
CH ₃ Cl	SIO-05	3	20	–	20	quarterly
CHCl ₃	SIO-98	4	20	–	20	quarterly
CH ₂ Cl ₂	SIO-14	3	20	2.67	20	quarterly
H-1211	SIO-05	3	30	0.43	20	yearly
H-1301	SIO-05	3	12	7.03	20	yearly
H-2402	SIO-14	3	19	1.65	20	yearly
CH ₃ Br	SIO-05	3	15	1.16	20	quarterly
CCl ₂ =CCl ₂	NOAA- 2003B	3	60	2.74	20	quarterly