CHEMPROP Data

A list of chemical properties for MECCA from `chemprop.tbl`

Date: 2020-09-24

KPP name	$H^{\ominus}$ [M/atm]	Reference	$\frac{\mathrm{d}\ln H^{\ominus}}{\mathrm{d}(1/T)}$ [K]	Reference
O1D	-9.99999	???	-9.99999	???
O3P	-9.99999	???	-9.99999	???
O2	1.3E-3	Wilhelm et al. (1977)	1500.	???
O3	1.03E-2	Burkholder et al. (2015)	2830.	???
H	-9.99999	???	-9.99999	???
H2	-9.99999	???	-9.99999	???
OH	3.0E1	Hanson et al. (1992)	4300.	???
HO2	3.9E3	Hanson et al. (1992)	5900.	???
H2O	BIG_DP	see notes	0.	???
H2O2	1.E5	Lind and Kok (1994)	6338.	???
H2OH2O	-9.99999	???	-9.99999	???
N	-9.99999	???	-9.99999	???
N2D	-9.99999	???	-9.99999	???
N2	-9.99999	???	-9.99999	???
NH3	60.2	Burkholder et al. (2015)	4160.	???
N2O	-9.99999	???	-9.99999	???
NO	1.9E-3	Schwartz and White (1981)	1480.	???
NO2	1.2E-2	Burkholder et al. (2015)	2360.	???
NO3	3.8E-2	Burkholder et al. (2015)	2000.	Berdnikov and Bazhin (1970)
N2O5	0.088	Fried et al. (1994)	3600.	???
HONO	4.9E1	Schwartz and White (1981)	4780.	???
HOONO	-9.99999	???	-9.99999	???
HNO3	2.45E6/1.5E1	Brimblecombe and Clegg (1989)	8694.	???
HNO4	1.26E4	Régimbal and Mozurkewich (1997)	6900.	???
NH2	-9.99999	???	-9.99999	???
HNO	-9.99999	???	-9.99999	???
NHOH	-9.99999	???	-9.99999	???
NH2O	-9.99999	???	-9.99999	???
NH2OH	-9.99999	???	-9.99999	???
LNITROGEN	-9.99999	???	-9.99999	???
CH2OO	-9.99999	???	-9.99999	???
CH2OOA	-9.99999	???	-9.99999	???
CH3	-9.99999	???	-9.99999	???
CH3O	-9.99999	???	-9.99999	???
CH3O2	6.	Jacob (1986)	5600.	???
CH3OH	2.20E2	Snider and Dawson (1985)	5200.	???
CH3OOH	3.0E2	Lind and Kok (1994)	5322.	???
CH4	-9.99999	???	-9.99999	???
CO	9.8E-4	Sander (2015)	1300.	???
CO2	3.4E-2	Sander et al. (2011)	2400.	???
HCHO	2.53E0	Rosanka et al. (2020)	7100.	???
HCOOH	8.9E3	Burkholder et al. (2015)	6100.	???
HOCH2O2	8.0E4	Leriche et al. (2000)	8200.	???
HOCH2OH	1.015E4	???	9870.	???
HOCH2OOH	1.7E6	Sander (2015)	9870.	???
CH3NO3	2.0E0	Sander (2015)	4740.	???
CH3O2NO2	-9.99999	???	-9.99999	???
CH3ONO	-9.99999	???	-9.99999	???
CN	-9.99999	???	-9.99999	???
HCN	-9.99999	???	-9.99999	???
HOCH2O2NO2	-9.99999	???	-9.99999	???
NCO	-9.99999	???	-9.99999	???
LCARBON	-9.99999	???	-9.99999	???

KPP name	$H^{\ominus}$ [M/atm]	Reference	$\frac{\mathrm{d}\ln H^{\ominus}}{\mathrm{d}(1/T)}$ [K]	Reference
C2H2	-9.99999	???	-9.99999	???
C2H4	-9.99999	???	-9.99999	???
C2H5O2	6.0E0	see notes	5600.	???
C2H5OH	2.0E2	Snider and Dawson (1985)	6630.	???
C2H5OOH	3.34E2	O'Sullivan et al. (1996)	6000.	???
C2H6	-9.99999	???	-9.99999	???
CH2CHOH	-9.99999	???	-9.99999	???
CH2CO	1.0E6	Taraborrelli (2020)	-9.99999	???
CH3CHO	5.91E0	Rosanka et al. (2020)	5890.	???
CH3CHOHO2	-9.99999	???	-9.99999	???
CH3CHOHOH	7633.59	US EPA (2012)	-9.99999	???
CH3CHOHOOH	1.0E6	Taraborrelli (2020)	-9.99999	???
CH3CO	-9.99999	???	-9.99999	???
CH3CO2H	4.1E3	Burkholder et al. (2015)	6200.	???
CH3CO3	1.0E-1	Sander (2015)	-9.99999	???
CH3CO3H	8.4E2	O'Sullivan et al. (1996)	5300.	???
CHOCHOHOH	2583.98	US EPA (2012)	-9.99999	???
CHOHOHCHOHOH	5.71428E6	US EPA (2012)	-9.99999	???
CHOHOHCOOH	320513.0	US EPA (2012)	-9.99999	???
ETHGLY	4.0E6	Bone et al. (1983)	-9.99999	???
GLYOX	1.19E3	Rosanka et al. (2020)	7480.	???
HCOCH2O2	-9.99999	???	-9.99999	???
HCOCO	-9.99999	???	-9.99999	???
HCOCO2H	9.9	Rosanka et al. (2020)	-9.99999	???
HCOCO3	-9.99999	???	-9.99999	???
HCOCO3H	2.7E6	Taraborrelli (2020)	-9.99999	???
HOCH2CH2O	-9.99999	???	-9.99999	???
HOCH2CH2O2	-9.99999	???	-9.99999	???
HOCH2CHO	2.4E3	Rosanka et al. (2020)	3850.	???
HOCH2CHOHOH	209205.0	US EPA (2012)	-9.99999	???
HOCH2CO	-9.99999	???	-9.99999	???
HOCH2CO2H	2.4E4	Burkholder et al. (2015)	4030.	???
HOCH2CO3	-9.99999	???	-9.99999	???
HOCH2CO3H	4.8E4	see notes	6014.	???
HOCHCHO	-9.99999	???	-9.99999	???
HOOCCOOH	5.0E8	Saxena and Hildemann (1996)	-9.99999	???
HOOCH2CHO	1.0E6	???	-9.99999	???
HOOCH2CHOHOH	209205.0	US EPA (2012)	-9.99999	???
HOOCH2CO2H	1.5E6	see notes	6014.	???
HOOCH2CO3	-9.99999	???	-9.99999	???
HOOCH2CO3H	1.0E6	Taraborrelli (2020)	-9.99999	???
HYETHO2H	4.0E6	Taraborrelli (2020)	-9.99999	???
C2H5NO3	1.6	Sander (2015)	5400.	???
C2H5O2NO2	-9.99999	???	-9.99999	???
CH3CN	5.27E1	Sander (2015)	4000.	???
ETHOHNO3	3.9E4	Taraborrelli (2020)	-9.99999	???
NCCH2O2	-9.99999	???	-9.99999	???
NO3CH2CHO	-9.99999	???	-9.99999	???
NO3CH2CO3	-9.99999	???	-9.99999	???
NO3CH2PAN	-9.99999	???	-9.99999	???
PAN	2.8	Burkholder et al. (2015)	5730.	???
PHAN	4.E4	Taraborrelli (2020)	-9.99999	???
ACETOL	4.7e2	Taraborrelli (2020)	-9.99999	???

KPP name	$H^{\ominus}$ [M/atm]	Reference	$\frac{\mathrm{d}\ln H^{\ominus}}{\mathrm{d}(1/T)}$ [K]	Reference
ALCOCH2OOH	1.0E6	Taraborrelli (2020)	-9.99999	???
C2H5CHO	-9.99999	???	-9.99999	???
C2H5CO3	-9.99999	???	-9.99999	???
C33CO	9.0e3	Taraborrelli (2020)	-9.99999	???
C3H6	-9.99999	???	-9.99999	???
C3H8	-9.99999	???	-9.99999	???
CH3CHCO	1.0E6	Taraborrelli (2020)	-9.99999	???
CH3COCH2O2	-9.99999	???	-9.99999	???
CH3COCH3	27.8	Burkholder et al. (2015)	5530.	???
CH3COCHOHOH	3533.57	US EPA (2012)	-9.99999	???
CH3COCO2H	3.14E5	Burkholder et al. (2015)	5090.	???
CH3COCO3	-9.99999	???	-9.99999	???
CH3COCO3H	9.0e3	Taraborrelli (2020)	-9.99999	???
CHOCOCH2O2	-9.99999	???	-9.99999	???
HCOCH2CHO	1.0E6	Taraborrelli (2020)	-9.99999	???
HCOCH2CO2H	6.6E7	Taraborrelli (2020)	-9.99999	???
HCOCH2CO3	-9.99999	???	-9.99999	???
HCOCH2CO3H	1.0E6	Taraborrelli (2020)	-9.99999	???
HCOCOCH2OOH	1.0E6	Taraborrelli (2020)	-9.99999	???
HOC2H4CO2H	4.2E7	Taraborrelli (2020)	-9.99999	???
HOC2H4CO3	-9.99999	???	-9.99999	???
HOC2H4CO3H	1.0E6	Taraborrelli (2020)	-9.99999	???
HOCH2COCH2O2	-9.99999	???	-9.99999	???
HOCH2COCH2OOH	1.0E6	Taraborrelli (2020)	-9.99999	???
HOCH2COCHO	4.1E5	Taraborrelli (2020)	-9.99999	???
HYPERACET	4.7E3	Taraborrelli (2020)	-9.99999	???
HYPROPO2	-9.99999	???	-9.99999	???
HYPROPO2H	9.2E5	Taraborrelli (2020)	-9.99999	???
IC3H7O2	-9.99999	???	-9.99999	???
IC3H7OOH	1.3E2	Taraborrelli (2020)	-9.99999	???
IPROPOL	1.3E2	Sander (2015)	7470.	???
MGLYOX	1.75	Rosanka et al. (2020)	7500.	???
NC3H7O2	-9.99999	???	-9.99999	???
NC3H7OOH	-9.99999	???	-9.99999	???
NPROPOL	-9.99999	???	-9.99999	???
PERPROACID	-9.99999	???	-9.99999	???
PROPACID	5.7E3	Khan et al. (1995)	6800.	Abraham (1984)
PROPENOL	-9.99999	???	-9.99999	???
C32OH13CO	9.0e3	Taraborrelli (2020)	-9.99999	???
C3DIALO2	-9.99999	???	-9.99999	???
C3DIALOOH	9.0e3	Taraborrelli (2020)	-9.99999	???
HCOCOHCO3	-9.99999	???	-9.99999	???
HCOCOHCO3H	2.0e6	Taraborrelli (2020)	-9.99999	???
METACETHO	3.7e3	Taraborrelli (2020)	7500.	???
C3PAN1	1.0E6	Taraborrelli (2020)	-9.99999	???
C3PAN2	1.0E6	Taraborrelli (2020)	-9.99999	???
CH3COCH2O2NO2	1.0E3	Taraborrelli (2020)	-9.99999	???
IC3H7NO3	-9.99999	???	-9.99999	???
NC3H7NO3	-9.99999	???	-9.99999	???
NOA	1.0E3	Taraborrelli (2020)	-9.99999	???
PPN	-9.99999	???	-9.99999	???
PR2O2HNO3	1.1E4	Taraborrelli (2020)	-9.99999	???
PRONO3BO2	-9.99999	???	-9.99999	???

KPP name	$H^{\ominus}$ [M/atm]	Reference	$\frac{\mathrm{d}\ln H^{\ominus}}{\mathrm{d}(1/T)}$ [K]	Reference
PROPOLNO3	4.5E3	Taraborrelli (2020)	-9.99999	???
HCOCOHPAN	3.9e4	Taraborrelli (2020)	8600.	???
BIACET	-9.99999	???	-9.99999	???
BIACETO2	1.0E6	Taraborrelli (2020)	-9.99999	???
BIACETOH	1.3E3	Taraborrelli (2020)	-9.99999	???
BIACETOOH	1.0E6	Taraborrelli (2020)	-9.99999	???
BUT1ENE	-9.99999	???	-9.99999	???
BUT2OLO	1.0E3	Taraborrelli (2020)	-9.99999	???
BUT2OLO2	-9.99999	???	-9.99999	???
BUT2OLOOH	1.0E6	Taraborrelli (2020)	-9.99999	???
BUTENOL	-9.99999	???	-9.99999	???
C312COCO3	-9.99999	???	-9.99999	???
C312COCO3H	1.0E6	Taraborrelli (2020)	-9.99999	???
C3H7CHO	-9.99999	???	-9.99999	???
C413COOOH	1.0E6	Taraborrelli (2020)	-9.99999	???
C44O2	-9.99999	???	-9.99999	???
C44OOH	1.0E6	Taraborrelli (2020)	-9.99999	???
C4CODIAL	1.0E6	Taraborrelli (2020)	-9.99999	???
CBUT2ENE	-9.99999	???	-9.99999	???
CH3COCHCO	1.0E6	Taraborrelli (2020)	-9.99999	???
CH3COCHO2CHO	-9.99999	???	-9.99999	???
CH3COCOCO2H	4.3E8	Taraborrelli (2020)	-9.99999	???
CH3COOHCHCHO	1.0E6	Taraborrelli (2020)	-9.99999	???
CHOC3COO2	1.0E6	Taraborrelli (2020)	-9.99999	???
CO23C3CHO	3.6e5	Taraborrelli (2020)	-9.99999	???
CO2C3CHO	1.7E3	Taraborrelli (2020)	-9.99999	???
CO2H3CHO	4.1E5	Taraborrelli (2020)	-9.99999	???
CO2H3CO2H	1.0E6	Taraborrelli (2020)	-9.99999	???
CO2H3CO3	-9.99999	???	-9.99999	???
CO2H3CO3H	1.E6	Taraborrelli (2020)	-9.99999	???
EZCH3CO2CHCHO	-9.99999	???	-9.99999	???
EZCHOCCH3CHO2	-9.99999	???	-9.99999	???
HCOCCH3CHOOH	1.0E6	Taraborrelli (2020)	-9.99999	???
HCOCCH3CO	1.0E6	Taraborrelli (2020)	-9.99999	???
HCOCO2CH3CHO	-9.99999	???	-9.99999	???
HMAC	1.7E3	Taraborrelli (2020)	-9.99999	???
HO12CO3C4	5.E7	Taraborrelli (2020)	-9.99999	???
HVMK	1.7E3	Taraborrelli (2020)	-9.99999	???
IBUTALOH	1.0E6	Taraborrelli (2020)	-9.99999	???
IBUTDIAL	1.7E3	Taraborrelli (2020)	-9.99999	???
IBUTOLBO2	-9.99999	???	-9.99999	???
IBUTOLBOOH	1.0E6	Taraborrelli (2020)	-9.99999	???
IC4H10	-9.99999	???	-9.99999	???
IC4H9O2	-9.99999	???	-9.99999	???
IC4H9OOH	-9.99999	???	-9.99999	???
IPRCHO	-9.99999	???	-9.99999	???
IPRCO3	-9.99999	???	-9.99999	???
IPRHOCO2H	4.2E7	Taraborrelli (2020)	-9.99999	???
IPRHOCO3	-9.99999	???	-9.99999	???
IPRHOCO3H	1.0E6	Taraborrelli (2020)	-9.99999	???
MACO2	-9.99999	???	-9.99999	???
MACO2H	2.58E3	Khan et al. (1992)	0.	???
MACO3	-9.99999	???	-9.99999	???

KPP name	$H^{\ominus}$ [M/atm]	Reference	$\frac{\mathrm{d}\ln H^{\ominus}}{\mathrm{d}(1/T)}$ [K]	Reference
MACO3H	3.4E3	Taraborrelli (2020)	-9.99999	???
MACR	4.9E0	Ji and Evans (2007)	4300.	???
MACRO	-9.99999	???	-9.99999	???
MACRO2	-9.99999	???	-9.99999	???
MACROH	5.E7	Taraborrelli (2020)	-9.99999	???
MACROOH	5.E7	Taraborrelli (2020)	-9.99999	???
MBOOO	-9.99999	???	-9.99999	???
MEK	-9.99999	???	-9.99999	???
MEPROPENE	-9.99999	???	-9.99999	???
MPROPENOL	-9.99999	???	-9.99999	???
MVK	2.6E1	Ji and Evans (2007)	4800.	???
NC4H10	-9.99999	???	-9.99999	???
PERIBUACID	-9.99999	???	-9.99999	???
TBUT2ENE	-9.99999	???	-9.99999	???
TC4H9O2	-9.99999	???	-9.99999	???
TC4H9OOH	-9.99999	???	-9.99999	???
BZFUCO	9.0e3	Taraborrelli (2020)	-9.99999	???
BZFUO2	-9.99999	???	-9.99999	???
BZFUONE	-9.99999	???	-9.99999	???
BZFUOOH	2.0e6	Taraborrelli (2020)	-9.99999	???
CO14O3CHO	3.6e5	Taraborrelli (2020)	-9.99999	???
CO14O3CO2H	9.0e3	Taraborrelli (2020)	-9.99999	???
CO2C4DIAL	2.0e6	Taraborrelli (2020)	-9.99999	???
EPXC4DIAL	3.6e5	Taraborrelli (2020)	-9.99999	???
EPXDLCO2H	9.0e3	Taraborrelli (2020)	-9.99999	???
EPXDLCO3	-9.99999	???	-9.99999	???
EPXDLCO3H	9.0e3	Taraborrelli (2020)	-9.99999	???
HOCOC4DIAL	3.1e5	Taraborrelli (2020)	5100.	???
MALANHY	-9.99999	???	-9.99999	???
MALANHYO2	-9.99999	???	-9.99999	???
MALANHYOOH	2.0e6	Taraborrelli (2020)	-9.99999	???
MALDALCO2H	9.0e3	Taraborrelli (2020)	-9.99999	???
MALDALCO3H	9.0e3	Taraborrelli (2020)	-9.99999	???
MALDIAL	3.6e5	Taraborrelli (2020)	-9.99999	???
MALDIALCO3	-9.99999	???	-9.99999	???
MALDIALO2	-9.99999	???	-9.99999	???
MALDIALOOH	2.0e6	Taraborrelli (2020)	-9.99999	???
MALNHYOHCO	2.0e6	Taraborrelli (2020)	-9.99999	???
MECOACEOOH	3.1e5	Taraborrelli (2020)	5100.	???
MECOACETO2	-9.99999	???	-9.99999	???
BUT2OLNO3	-9.99999	???	-9.99999	???
C312COPAN	1.0E6	Taraborrelli (2020)	-9.99999	???
C4PAN5	1.0E6	Taraborrelli (2020)	-9.99999	???
IBUTOLBNO3	-9.99999	???	-9.99999	???
IC4H9NO3	-9.99999	???	-9.99999	???
MACRNO3	-9.99999	???	-9.99999	???
MPAN	-9.99999	???	-9.99999	???
MVKNO3	1.0E6	Taraborrelli (2020)	-9.99999	???
PIPN	-9.99999	???	-9.99999	???
TC4H9NO3	-9.99999	???	-9.99999	???
EPXDLPAN	-9.99999	???	-9.99999	???
MALDIALPAN	-9.99999	???	-9.99999	???
NBZFUO2	-9.99999	???	-9.99999	???

KPP name	$H^{\ominus}$ [M/atm]	Reference	$\frac{\mathrm{d}\ln H^{\ominus}}{\mathrm{d}(1/T)}$ [K]	Reference
NBZFUONE	-9.99999	???	-9.99999	???
NBZFUOOH	2.4e4	Taraborrelli (2020)	-9.99999	???
NC4DCO2H	3.9e4	Taraborrelli (2020)	8600.	???
LBUT1ENO2	-9.99999	???	-9.99999	???
LBUT1ENOOH	1.0E6	Taraborrelli (2020)	-9.99999	???
LC4H9O2	-9.99999	???	-9.99999	???
LC4H9OOH	-9.99999	???	-9.99999	???
LHMVKABO2	-9.99999	???	-9.99999	???
LHMVKABOOH	5.E6	Taraborrelli (2020)	-9.99999	???
LMEKO2	-9.99999	???	-9.99999	???
LMEKOOH	1.E3	Taraborrelli (2020)	-9.99999	???
LBUT1ENNO3	-9.99999	???	-9.99999	???
LC4H9NO3	-9.99999	???	-9.99999	???
LMEKNO3	-9.99999	???	-9.99999	???
C1ODC2O2C4OD	-9.99999	???	-9.99999	???
C1ODC2O2C4OOH	1.0E6	Taraborrelli (2020)	-9.99999	???
C1ODC2OOHC4OD	1.0E6	Taraborrelli (2020)	-9.99999	???
C1ODC3O2C4OOH	1.0E6	Taraborrelli (2020)	-9.99999	???
C1OOHC2O2C4OD	-9.99999	???	-9.99999	???
C1OOHC2OOHC4OD	1.0E6	Taraborrelli (2020)	-9.99999	???
C1OOHC3O2C4OD	-9.99999	???	-9.99999	???
C4MDIAL	1.0E6	Taraborrelli (2020)	-9.99999	???
C511O2	-9.99999	???	-9.99999	???
C511OOH	1.0E6	Taraborrelli (2020)	-9.99999	???
C512O2	-9.99999	???	-9.99999	???
C512OOH	1.0E6	Taraborrelli (2020)	-9.99999	???
C513CO	1.0E6	Taraborrelli (2020)	-9.99999	???
C513O2	-9.99999	???	-9.99999	???
C513OOH	1.0E6	Taraborrelli (2020)	-9.99999	???
C514O2	-9.99999	???	-9.99999	???
C514OOH	1.0E6	Taraborrelli (2020)	-9.99999	???
C59O2	-9.99999	???	-9.99999	???
C59OOH	3.E11	Taraborrelli (2020)	-9.99999	???
C5H8	-9.99999	???	-9.99999	???
CHOC3COCO3	-9.99999	???	-9.99999	???
CHOC3COOOH	1.0E6	Taraborrelli (2020)	-9.99999	???
CO13C4CHO	1.0E6	Taraborrelli (2020)	-9.99999	???
CO23C4CHO	1.0E6	Taraborrelli (2020)	-9.99999	???
CO23C4CO3	-9.99999	???	-9.99999	???
CO23C4CO3H	1.0E6	Taraborrelli (2020)	-9.99999	???
DB1O	-9.99999	???	-9.99999	???
DB1O2	-9.99999	???	-9.99999	???
DB1OOH	1.0E6	Taraborrelli (2020)	-9.99999	???
DB2O2	-9.99999	???	-9.99999	???
DB2OOH	1.0E6	Taraborrelli (2020)	-9.99999	???
HCOC5	-9.99999	???	-9.99999	???
ISOPAOH	4.E6	Taraborrelli (2020)	-9.99999	???
ISOPBO2	-9.99999	???	-9.99999	???
ISOPBOH	3.E6	Taraborrelli (2020)	-9.99999	???
ISOPBOOH	3.E6	Taraborrelli (2020)	-9.99999	???
ISOPDO2	-9.99999	???	-9.99999	???
ISOPDOH	3.E6	Taraborrelli (2020)	-9.99999	???
ISOPDOOH	3.E6	Taraborrelli (2020)	-9.99999	???

KPP name	$H^{\ominus}$ [M/atm]	Reference	$\frac{\mathrm{d}\ln H^{\ominus}}{\mathrm{d}(1/T)}$ [K]	Reference
MBO	1.0E6	Taraborrelli (2020)	-9.99999	???
MBOACO	1.0E6	Taraborrelli (2020)	-9.99999	???
MBOCOCO	1.0E6	Taraborrelli (2020)	-9.99999	???
ME3FURAN	1.0E6	Taraborrelli (2020)	-9.99999	???
ACCOMECHO	3.7e3	Taraborrelli (2020)	7500.	???
ACCOMECO3	-9.99999	???	-9.99999	???
ACCOMECO3H	3.1e5	Taraborrelli (2020)	5100.	???
C24O3CCO2H	3.1e5	Taraborrelli (2020)	5100.	???
C4CO2DBCO3	9.0e3	Taraborrelli (2020)	-9.99999	???
C4CO2DCO3H	2.0e6	Taraborrelli (2020)	-9.99999	???
C5134CO2OH	3.1e5	Taraborrelli (2020)	5100.	???
C54CO	3.6e5	Taraborrelli (2020)	-9.99999	???
C5CO14O2	-9.99999	???	-9.99999	???
C5CO14OH	2.2e3	Taraborrelli (2020)	6583.	???
C5CO14OOH	3.1e5	Taraborrelli (2020)	5100.	???
C5DIALCO	9.0e3	Taraborrelli (2020)	-9.99999	???
C5DIALO2	-9.99999	???	-9.99999	???
C5DIALOOH	3.6e5	Taraborrelli (2020)	-9.99999	???
C5DICARB	3.7e3	Taraborrelli (2020)	7500.	???
C5DICARBO2	-9.99999	???	-9.99999	???
C5DICAROOH	2.0e6	Taraborrelli (2020)	-9.99999	???
MC3ODBCO2H	2.2e3	Taraborrelli (2020)	6583.	???
MMALANHY	-9.99999	???	-9.99999	???
MMALANHYO2	-9.99999	???	-9.99999	???
MMALNHYOOH	2.0e6	Taraborrelli (2020)	-9.99999	???
TLFUO2	-9.99999	???	-9.99999	???
TLFUONE	-9.99999	???	-9.99999	???
TLFUOOH	2.0e6	Taraborrelli (2020)	-9.99999	???
C4MCONO3OH	1.0E6	Taraborrelli (2020)	-9.99999	???
C514NO3	1.0E6	Taraborrelli (2020)	-9.99999	???
C5PAN9	1.0E6	Taraborrelli (2020)	-9.99999	???
CHOC3COPAN	1.0E6	Taraborrelli (2020)	-9.99999	???
DB1NO3	1.0E4	Taraborrelli (2020)	-9.99999	???
ISOPBDNO3O2	-9.99999	???	-9.99999	???
ISOPBNO3	8.9E3	Taraborrelli (2020)	-9.99999	???
ISOPDNO3	8.9E3	Taraborrelli (2020)	-9.99999	???
NC4CHO	-9.99999	???	-9.99999	???
NC4OHCO3	-9.99999	???	-9.99999	???
NC4OHCO3H	1.0E6	Taraborrelli (2020)	-9.99999	???
NC4OHCPAN	1.0E6	Taraborrelli (2020)	-9.99999	???
NISOPO2	-9.99999	???	-9.99999	???
NISOPOOH	2.E4	Taraborrelli (2020)	-9.99999	???
NMBOBCO	1.0E6	Taraborrelli (2020)	-9.99999	???
ACCOMEPAN	-9.99999	???	-9.99999	???
C4CO2DBPAN	3.9e4	Taraborrelli (2020)	8600.	???
C5COO2NO2	-9.99999	???	-9.99999	???
NC4MDCO2H	9.0e3	Taraborrelli (2020)	-9.99999	???
NTLFUO2	-9.99999	???	-9.99999	???
NTLFUOOH	9.0e3	Taraborrelli (2020)	-9.99999	???
LC578O2	-9.99999	???	-9.99999	???
LC578OOH	3.E11	Taraborrelli (2020)	-9.99999	???
LDISOPACO	-9.99999	???	-9.99999	???
LDISOPACO2	-9.99999	???	-9.99999	???

KPP name	$H^{\ominus}$ [M/atm]	Reference	$\frac{\mathrm{d}\ln H^{\ominus}}{\mathrm{d}(1/T)}$ [K]	Reference
LHC4ACCHO	4.E5	Taraborrelli (2020)	-9.99999	???
LHC4ACCO2H	6.6E7	Taraborrelli (2020)	-9.99999	???
LHC4ACCO3	-9.99999	???	-9.99999	???
LHC4ACCO3H	2.2E5	Taraborrelli (2020)	-9.99999	???
LIEPOX	1.0E6	Taraborrelli (2020)	-9.99999	???
LISOPAB	-9.99999	???	-9.99999	???
LISOPACO	-9.99999	???	-9.99999	???
LISOPACO2	-9.99999	???	-9.99999	???
LISOPACOOH	4.E6	Taraborrelli (2020)	-9.99999	???
LISOPCD	-9.99999	???	-9.99999	???
LISOPEFO	-9.99999	???	-9.99999	???
LISOPEFO2	-9.99999	???	-9.99999	???
LMBOABO2	-9.99999	???	-9.99999	???
LMBOABOOH	1.0E6	Taraborrelli (2020)	-9.99999	???
LME3FURANO2	-9.99999	???	-9.99999	???
LZCO3C23DBCOD	-9.99999	???	-9.99999	???
LZCO3HC23DBCOD	1.0E6	Taraborrelli (2020)	-9.99999	???
LZCODC23DBCOOH	-9.99999	???	-9.99999	???
LC5PAN1719	6.E4	Taraborrelli (2020)	-9.99999	???
LISOPACNO3	2.E4	Taraborrelli (2020)	-9.99999	???
LISOPACNO3O2	-9.99999	???	-9.99999	???
LMBOABNO3	1.0E6	Taraborrelli (2020)	-9.99999	???
LNISO3	-9.99999	???	-9.99999	???
LNISOOH	-9.99999	???	-9.99999	???
LNMBOABO2	-9.99999	???	-9.99999	???
LNMBOABOOH	1.0E6	Taraborrelli (2020)	-9.99999	???
LZCPANC23DBCOD	-9.99999	???	-9.99999	???
C614CO	1.0E6	Taraborrelli (2020)	-9.99999	???
C614O2	-9.99999	???	-9.99999	???
C614OOH	1.0E6	Taraborrelli (2020)	-9.99999	???
CO235C5CHO	1.0E6	Taraborrelli (2020)	-9.99999	???
CO235C6O2	-9.99999	???	-9.99999	???
CO235C6OOH	1.0E6	Taraborrelli (2020)	-9.99999	???
BENZENE	-9.99999	???	-9.99999	???
BZBIPERO2	-9.99999	???	-9.99999	???
BZBIPEROOH	2.0e6	Taraborrelli (2020)	-9.99999	???
BZEMUCCO	9.0e3	Taraborrelli (2020)	-9.99999	???
BZEMUCCO2H	9.0e3	Taraborrelli (2020)	-9.99999	???
BZEMUCCO3	-9.99999	???	-9.99999	???
BZEMUCCO3H	9.0e3	Taraborrelli (2020)	-9.99999	???
BZEMUCO2	-9.99999	???	-9.99999	???
BZEMUCOOH	2.0e6	Taraborrelli (2020)	-9.99999	???
BZEPOXMUC	3.6e5	Taraborrelli (2020)	-9.99999	???
BZOBIPEROH	9.0e3	Taraborrelli (2020)	-9.99999	???
C5CO2DBCO3	-9.99999	???	-9.99999	???
C5CO2DCO3H	2.0e6	Taraborrelli (2020)	-9.99999	???
C5CO2OHCO3	-9.99999	???	-9.99999	???
C5COOHCO3H	2.0e6	Taraborrelli (2020)	-9.99999	???
C6125CO	3.7e3	Taraborrelli (2020)	7500.	???
C615CO2O2	-9.99999	???	-9.99999	???
C615CO2OOH	3.1e5	Taraborrelli (2020)	5100.	???
C6CO4DB	2.0e6	Taraborrelli (2020)	-9.99999	???
C6H5O	2.9e3	Taraborrelli (2020)	6800.	???

KPP name	$H^{\ominus}$ [M/atm]	Reference	$\frac{\mathrm{d}\ln H^{\ominus}}{\mathrm{d}(1/T)}$ [K]	Reference
C6H5O2	-9.99999	???	-9.99999	???
C6H5OOH	2.9e3	Taraborrelli (2020)	6800.	???
CATEC1O	4.6e3	Taraborrelli (2020)	-9.99999	???
CATEC1O2	-9.99999	???	-9.99999	???
CATEC1OOH	4.6e3	Taraborrelli (2020)	-9.99999	???
CATECHOL	4.6e3	Taraborrelli (2020)	-9.99999	???
CPDKETENE	-9.99999	???	-9.99999	???
PBZQCO	4.6e3	Taraborrelli (2020)	-9.99999	???
PBZQO2	-9.99999	???	-9.99999	???
PBZQONE	-9.99999	???	-9.99999	???
PBZQOOH	2.0e6	Taraborrelli (2020)	-9.99999	???
PHENO2	-9.99999	???	-9.99999	???
PHENOL	2.9e3	Taraborrelli (2020)	6800.	???
PHENOOH	2.0e6	Taraborrelli (2020)	-9.99999	???
C614NO3	1.0E6	Taraborrelli (2020)	-9.99999	???
BZBIPERNO3	2.9e3	Taraborrelli (2020)	6800.	???
BZEMUCNO3	3.9e4	Taraborrelli (2020)	8600.	???
BZEMUCPAN	-9.99999	???	-9.99999	???
C5CO2DBPAN	3.7e3	Taraborrelli (2020)	7500.	???
C5CO2OHPAN	3.9e4	Taraborrelli (2020)	8600.	???
DNPHEN	2.3e3	Taraborrelli (2020)	-9.99999	???
DNPHENO2	-9.99999	???	-9.99999	???
DNPHENOOH	2.3e3	Taraborrelli (2020)	-9.99999	???
HOC6H4NO2	-9.99999	???	-9.99999	???
NBZQO2	-9.99999	???	-9.99999	???
NBZQOOH	2.4e4	Taraborrelli (2020)	-9.99999	???
NCATECHOL	4.6e3	Taraborrelli (2020)	-9.99999	???
NCATECO2	-9.99999	???	-9.99999	???
NCATECOOH	2.0e6	Taraborrelli (2020)	-9.99999	???
NCPDKETENE	-9.99999	???	-9.99999	???
NDNPHENO2	-9.99999	???	-9.99999	???
NDNPHENOOH	2.3e3	Taraborrelli (2020)	-9.99999	???
NNCATECO2	-9.99999	???	-9.99999	???
NNCATECOOH	2.3e3	Taraborrelli (2020)	-9.99999	???
NPHEN1O	-9.99999	???	-9.99999	???
NPHEN1O2	-9.99999	???	-9.99999	???
NPHEN1OOH	-9.99999	???	-9.99999	???
NPHENO2	-9.99999	???	-9.99999	???
NPHENOOH	4.6e3	Taraborrelli (2020)	-9.99999	???
C235C6CO3H	1.0E6	Taraborrelli (2020)	-9.99999	???
C716O2	-9.99999	???	-9.99999	???
C716OOH	1.0E6	Taraborrelli (2020)	-9.99999	???
C721O2	-9.99999	???	-9.99999	???
C721OOH	1.0E6	Taraborrelli (2020)	-9.99999	???
C722O2	-9.99999	???	-9.99999	???
C722OOH	1.0E6	Taraborrelli (2020)	-9.99999	???
CO235C6CHO	1.0E6	Taraborrelli (2020)	-9.99999	???
CO235C6CO3	-9.99999	???	-9.99999	???
MCPDKETENE	-9.99999	???	-9.99999	???
ROO6R3O	-9.99999	???	-9.99999	???
ROO6R3O2	-9.99999	???	-9.99999	???
ROO6R5O2	-9.99999	???	-9.99999	???
BENZAL	-9.99999	???	-9.99999	???

KPP name	$H^{\ominus}$ [M/atm]	Reference	$\frac{\mathrm{d}\ln H^{\ominus}}{\mathrm{d}(1/T)}$ [K]	Reference
C6CO2OHCO3	-9.99999	???	-9.99999	???
C6COOHCO3H	2.0e6	Taraborrelli (2020)	-9.99999	???
C6H5CH2O2	-9.99999	???	-9.99999	???
C6H5CH2OOH	2.9e3	Taraborrelli (2020)	6800.	???
C6H5CO3	-9.99999	???	-9.99999	???
C6H5CO3H	2.4e4	Taraborrelli (2020)	-9.99999	???
C7CO4DB	3.7e3	Taraborrelli (2020)	7500.	???
CRESO2	-9.99999	???	-9.99999	???
CRESOL	2.9e3	Taraborrelli (2020)	6800.	???
CRESOOH	2.0e6	Taraborrelli (2020)	-9.99999	???
MCATEC1O	2.0e6	Taraborrelli (2020)	-9.99999	???
MCATEC1O2	-9.99999	???	-9.99999	???
MCATEC1OOH	4.6e3	Taraborrelli (2020)	-9.99999	???
MCATECHOL	4.6e3	Taraborrelli (2020)	-9.99999	???
OXYL1O2	-9.99999	???	-9.99999	???
OXYL1OOH	2.9e3	Taraborrelli (2020)	6800.	???
PHCOOH	1.4E4	Goldstein (1982)	6500.	???
PTLQCO	-9.99999	???	-9.99999	???
PTLQO2	-9.99999	???	-9.99999	???
PTLQONE	-9.99999	???	-9.99999	???
PTLQOOH	-9.99999	???	-9.99999	???
TLBIPERO2	-9.99999	???	-9.99999	???
TLBIPEROOH	2.0e6	Taraborrelli (2020)	-9.99999	???
TLEMUCCO	3.1e5	Taraborrelli (2020)	5100.	???
TLEMUCCO2H	2.2e3	Taraborrelli (2020)	6583.	???
TLEMUCCO3	-9.99999	???	-9.99999	???
TLEMUCCO3H	2.2e3	Taraborrelli (2020)	6583.	???
TLEMUCO2	-9.99999	???	-9.99999	???
TLEMUCOOH	2.0e6	Taraborrelli (2020)	-9.99999	???
TLEPOXMUC	-9.99999	???	-9.99999	???
TLOBIPEROH	3.9e4	Taraborrelli (2020)	8600.	???
TOL1O	2.9e3	Taraborrelli (2020)	6800.	???
TOLUENE	-9.99999	???	-9.99999	???
C7PAN3	1.0E6	Taraborrelli (2020)	-9.99999	???
C6CO2OHPAN	3.9e4	Taraborrelli (2020)	8600.	???
C6H5CH2NO3	-9.99999	???	-9.99999	???
DNCRES	2.3e3	Taraborrelli (2020)	-9.99999	???
DNCRESO2	-9.99999	???	-9.99999	???
DNCRESOOH	2.3e3	Taraborrelli (2020)	-9.99999	???
MNCATECH	4.6e3	Taraborrelli (2020)	-9.99999	???
MNCATECO2	-9.99999	???	-9.99999	???
MNCATECOOH	2.0e6	Taraborrelli (2020)	-9.99999	???
MNCPDKETENE	-9.99999	???	-9.99999	???
MNNCATCOOH	2.3e3	Taraborrelli (2020)	-9.99999	???
MNNCATECO2	-9.99999	???	-9.99999	???
NCRES1O	-9.99999	???	-9.99999	???
NCRES1O2	-9.99999	???	-9.99999	???
NCRES1OOH	-9.99999	???	-9.99999	???
NCRESO2	-9.99999	???	-9.99999	???
NCRESOOH	4.6e3	Taraborrelli (2020)	-9.99999	???
NDNCRESO2	-9.99999	???	-9.99999	???
NDNCRESOOH	2.3e3	Taraborrelli (2020)	-9.99999	???
NPTLQO2	-9.99999	???	-9.99999	???

KPP name	$H^{\ominus}$ [M/atm]	Reference	$\frac{\mathrm{d}\ln H^{\ominus}}{\mathrm{d}(1/T)}$ [K]	Reference
NPTLQOOH	-9.99999	???	-9.99999	???
PBZN	-9.99999	???	-9.99999	???
TLBIPERNO3	-9.99999	???	-9.99999	???
TLEMUCNO3	3.9e4	Taraborrelli (2020)	8600.	???
TLEMUCPAN	-9.99999	???	-9.99999	???
TOL1OHNO2	-9.99999	???	-9.99999	???
C721CHO	1.0E6	Taraborrelli (2020)	-9.99999	???
C721CO3	-9.99999	???	-9.99999	???
C721CO3H	1.0E6	Taraborrelli (2020)	-9.99999	???
C810O2	-9.99999	???	-9.99999	???
C810OOH	1.0E6	Taraborrelli (2020)	-9.99999	???
C811O2	-9.99999	???	-9.99999	???
C812O2	-9.99999	???	-9.99999	???
C812OOH	1.0E6	Taraborrelli (2020)	-9.99999	???
C813O2	-9.99999	???	-9.99999	???
C813OOH	1.0E6	Taraborrelli (2020)	-9.99999	???
C85O2	-9.99999	???	-9.99999	???
C85OOH	1.0E6	Taraborrelli (2020)	-9.99999	???
C86O2	-9.99999	???	-9.99999	???
C86OOH	1.0E6	Taraborrelli (2020)	-9.99999	???
C89O2	-9.99999	???	-9.99999	???
C89OOH	1.0E6	Taraborrelli (2020)	-9.99999	???
C8BC	1.0E6	Taraborrelli (2020)	-9.99999	???
C8BCCO	1.0E6	Taraborrelli (2020)	-9.99999	???
C8BCO2	-9.99999	???	-9.99999	???
C8BCOOH	1.0E6	Taraborrelli (2020)	-9.99999	???
NORPINIC	4.E13	Taraborrelli (2020)	-9.99999	???
EBENZ	-9.99999	???	-9.99999	???
STYRENE	-9.99999	???	-9.99999	???
STYRENO2	-9.99999	???	-9.99999	???
STYRENOOH	2.4e4	Taraborrelli (2020)	-9.99999	???
C721PAN	1.0E6	Taraborrelli (2020)	-9.99999	???
C810NO3	1.0E6	Taraborrelli (2020)	-9.99999	???
C89NO3	1.0E6	Taraborrelli (2020)	-9.99999	???
C8BCNO3	1.0E6	Taraborrelli (2020)	-9.99999	???
NSTYRENO2	-9.99999	???	-9.99999	???
NSTYRENOOH	-9.99999	???	-9.99999	???
LXYL	-9.99999	???	-9.99999	???
C811CO3	-9.99999	???	-9.99999	???
C811CO3H	1.0E6	Taraborrelli (2020)	-9.99999	???
C85CO3	-9.99999	???	-9.99999	???
C85CO3H	1.0E6	Taraborrelli (2020)	-9.99999	???
C89CO2H	6.6E7	Taraborrelli (2020)	-9.99999	???
C89CO3	-9.99999	???	-9.99999	???
C89CO3H	1.0E6	Taraborrelli (2020)	-9.99999	???
C96O2	-9.99999	???	-9.99999	???
C96OOH	1.0E6	Taraborrelli (2020)	-9.99999	???
C97O2	-9.99999	???	-9.99999	???
C97OOH	1.0E6	Taraborrelli (2020)	-9.99999	???
C98O2	-9.99999	???	-9.99999	???
C98OOH	1.0E6	Taraborrelli (2020)	-9.99999	???
NOPINDCO	1.0E6	Taraborrelli (2020)	-9.99999	???
NOPINDO2	-9.99999	???	-9.99999	???

KPP name	$H^{\ominus}$ [M/atm]	Reference	$\frac{\mathrm{d}\ln H^{\ominus}}{\mathrm{d}(1/T)}$ [K]	Reference
NOPINDOOH	1.0E6	Taraborrelli (2020)	-9.99999	???
NOPINONE	1.0E6	Taraborrelli (2020)	-9.99999	???
NOPINOO	1.0E6	Taraborrelli (2020)	-9.99999	???
NORPINAL	1.0E6	Taraborrelli (2020)	-9.99999	???
NORPINENOL	1.0E6	Taraborrelli (2020)	-9.99999	???
PINIC	4.E13	Taraborrelli (2020)	-9.99999	???
C811PAN	1.0E6	Taraborrelli (2020)	-9.99999	???
C89PAN	1.0E6	Taraborrelli (2020)	-9.99999	???
C96NO3	1.0E6	Taraborrelli (2020)	-9.99999	???
C9PAN2	1.0E6	Taraborrelli (2020)	-9.99999	???
LTMB	-9.99999	???	-9.99999	???
APINAOO	-9.99999	???	-9.99999	???
APINBOO	-9.99999	???	-9.99999	???
APINENE	-9.99999	???	-9.99999	???
BPINAO2	-9.99999	???	-9.99999	???
BPINAOOH	1.0E6	Taraborrelli (2020)	-9.99999	???
BPINENE	-9.99999	???	-9.99999	???
C106O2	-9.99999	???	-9.99999	???
C106OOH	1.0E6	Taraborrelli (2020)	-9.99999	???
C109CO	1.0E6	Taraborrelli (2020)	-9.99999	???
C109O2	-9.99999	???	-9.99999	???
C109OOH	1.0E6	Taraborrelli (2020)	-9.99999	???
C96CO3	-9.99999	???	-9.99999	???
CAMPHENE	-9.99999	???	-9.99999	???
CARENE	-9.99999	???	-9.99999	???
MENTHEN6ONE	1.0E6	Taraborrelli (2020)	-9.99999	???
OH2MENTHEN6ONE	1.0E6	Taraborrelli (2020)	-9.99999	???
OHMENTHEN6ONEO2	-9.99999	???	-9.99999	???
PERPINONIC	7.4E5	Taraborrelli (2020)	-9.99999	???
PINAL	1.0E6	Taraborrelli (2020)	-9.99999	???
PINALO2	-9.99999	???	-9.99999	???
PINALOOH	1.0E6	Taraborrelli (2020)	-9.99999	???
PINENOL	1.0E6	Taraborrelli (2020)	-9.99999	???
PINONIC	7.4E5	Taraborrelli (2020)	-9.99999	???
RO6R1O2	-9.99999	???	-9.99999	???
RO6R3O2	-9.99999	???	-9.99999	???
ROO6R1O2	-9.99999	???	-9.99999	???
SABINENE	-9.99999	???	-9.99999	???
BPINANO3	1.0E6	Taraborrelli (2020)	-9.99999	???
C106NO3	1.0E6	Taraborrelli (2020)	-9.99999	???
C10PAN2	1.0E6	Taraborrelli (2020)	-9.99999	???
PINALNO3	1.0E6	Taraborrelli (2020)	-9.99999	???
RO6R1NO3	1.0E6	Taraborrelli (2020)	-9.99999	???
ROO6R1NO3	1.0E6	Taraborrelli (2020)	-9.99999	???
LAPINABNO3	1.0E6	Taraborrelli (2020)	-9.99999	???
LAPINABO2	-9.99999	???	-9.99999	???
LAPINABOOH	1.0E6	Taraborrelli (2020)	-9.99999	???
LNAPINABO2	-9.99999	???	-9.99999	???
LNAPINABOOH	1.0E6	Taraborrelli (2020)	-9.99999	???
LNBPINABO2	-9.99999	???	-9.99999	???
LNBPINABOOH	1.0E6	Taraborrelli (2020)	-9.99999	???
LHAROM	-9.99999	???	-9.99999	???
LFLUORINE	-9.99999	???	-9.99999	???

KPP name	$H^{\ominus}$ [M/atm]	Reference	$\frac{\mathrm{d}\ln H^{\ominus}}{\mathrm{d}(1/T)}$ [K]	Reference
CHF3	-9.99999	???	-9.99999	???
CHF2CF3	-9.99999	???	-9.99999	???
CH3CF3	-9.99999	???	-9.99999	???
CH2F2	-9.99999	???	-9.99999	???
CH3CHF2	-9.99999	???	-9.99999	???
CCl4	-9.99999	???	-9.99999	???
CF2Cl2	-9.99999	???	-9.99999	???
CF2ClCF2Cl	-9.99999	???	-9.99999	???
CF2ClCFCl2	-9.99999	???	-9.99999	???
CF3CF2Cl	-9.99999	???	-9.99999	???
CFCl3	-9.99999	???	-9.99999	???
CH2Cl2	-9.99999	???	-9.99999	???
CH2FCF3	-9.99999	???	-9.99999	???
CH3CCl3	-9.99999	???	-9.99999	???
CH3CFCl2	-9.99999	???	-9.99999	???
CH3Cl	-9.99999	???	-9.99999	???
CHCl3	-9.99999	???	-9.99999	???
CHF2Cl	-9.99999	???	-9.99999	???
Cl	-9.99999	???	-9.99999	???
Cl2	9.3E-2	Sander et al. (2011)	2000.	???
Cl2O2	-9.99999	???	-9.99999	???
ClNO2	-9.99999	???	-9.99999	???
ClNO3	BIG_DP	see notes	0.	???
ClO	-9.99999	???	-9.99999	???
HCl	2./1.7	Brimblecombe and Clegg (1989)	9000.	???
HOCl	6.6E2	Burkholder et al. (2015)	5880.	???
OClO	-9.99999	???	-9.99999	???
LCHLORINE	-9.99999	???	-9.99999	???
Br	-9.99999	???	-9.99999	???
Br2	7.25E-1	Burkholder et al. (2015)	4390.	???
BrCl	9.4E-1	Bartlett and Margerum (1999)	5600.	???
BrNO2	-9.99999	???	-9.99999	???
BrNO3	BIG_DP	see notes	0.	???
BrO	-9.99999	???	-9.99999	???
CF2ClBr	-9.99999	???	-9.99999	???
CF3Br	-9.99999	???	-9.99999	???
CH2Br2	-9.99999	???	-9.99999	???
CH2ClBr	-9.99999	???	-9.99999	???
CH3Br	-9.99999	???	-9.99999	???
CHBr3	-9.99999	???	-9.99999	???
CHCl2Br	-9.99999	???	-9.99999	???
CHClBr2	-9.99999	???	-9.99999	???
HBr	1.3	Brimblecombe and Clegg (1989)	10000.	???
HOBr	1.3E3	Blatchley et al. (1992)	5862.	???
LBROMINE	-9.99999	???	-9.99999	???
C3H7I	-9.99999	???	-9.99999	???
CH2ClI	-9.99999	???	-9.99999	???
CH2I2	-9.99999	???	-9.99999	???
CH3I	-9.99999	???	-9.99999	???
HI	BIG_DP	see notes	0.	???
HIO3	BIG_DP	see notes	0.	???
HOI	4.5E2	Chatfield and Crutzen (1990)	5862.	???
I	-9.99999	???	-9.99999	???

KPP name	$H^{\ominus}$ [M/atm]	Reference	$\frac{\mathrm{d}\ln H^{\ominus}}{\mathrm{d}(1/T)}$ [K]	Reference
I2	3.	Palmer et al. (1985)	4431.	???
I2O2	BIG_DP	see notes	0.	???
IBr	2.4E1	see notes	5600.	???
ICl	1.1E2	see notes	5600.	???
INO2	BIG_DP	see notes	0.	???
INO3	BIG_DP	see notes	0.	???
IO	4.5E2	see notes	5862.	???
IPART	-9.99999	???	-9.99999	???
OIO	BIG_DP	see notes	0.	???
CH3SO2	-9.99999	???	-9.99999	???
CH3SO3	-9.99999	???	-9.99999	???
CH3SO3H	BIG_DP	see notes	0.	???
DMS	5.4E-1	Burkholder et al. (2015)	3460.	???
DMSO	9.5E4	Watts and Brimblecombe (1987)	1300.	???
H2SO4	1.E11	see notes	0.	???
OCS	-9.99999	???	-9.99999	???
S	-9.99999	???	-9.99999	???
SF6	-9.99999	???	-9.99999	???
SH	-9.99999	???	-9.99999	???
SO	-9.99999	???	-9.99999	???
SO2	1.3	Burkholder et al. (2015)	2900.	???
SO3	-9.99999	???	-9.99999	???
LSULFUR	-9.99999	???	-9.99999	???
Hg	0.13	Andersson et al. (2008)	2700.	???
HgO	3.2E6	Shon et al. (2005)	0.	???
HgCl	2.4E7	see notes	0.	???
HgCl2	2.4E7	Shon et al. (2005)	0.	???
HgBr	2.4E7	see notes	0.	???
HgBr2	2.4E7	see notes	0.	???
ClHgBr	2.4E7	see notes	0.	???
BrHgOBr	2.4E7	see notes	0.	???
ClHgOBr	2.4E7	see notes	0.	???
RGM	-9.99999	???	-9.99999	???
LTERP	-9.99999	???	-9.99999	???
LALK4	-9.99999	???	-9.99999	???
LALK5	-9.99999	???	-9.99999	???
LARO1	-9.99999	???	-9.99999	???
LARO2	-9.99999	???	-9.99999	???
LOLE1	-9.99999	???	-9.99999	???
LOLE2	-9.99999	???	-9.99999	???
LfPOG02	-9.99999	???	-9.99999	???
LfPOG03	-9.99999	???	-9.99999	???
LfPOG04	-9.99999	???	-9.99999	???
LfPOG05	-9.99999	???	-9.99999	???
LbbPOG02	-9.99999	???	-9.99999	???
LbbPOG03	-9.99999	???	-9.99999	???
LbbPOG04	-9.99999	???	-9.99999	???
LfSOGsv01	-9.99999	???	-9.99999	???
LfSOGsv02	-9.99999	???	-9.99999	???
LbbSOGsv01	-9.99999	???	-9.99999	???
LbbSOGsv02	-9.99999	???	-9.99999	???
LfSOGiv01	-9.99999	???	-9.99999	???
LfSOGiv02	-9.99999	???	-9.99999	???

KPP name	$H^{\ominus}$ [M/atm]	Reference	$\frac{\mathrm{d}\ln H^{\ominus}}{\mathrm{d}(1/T)}$ [K]	Reference
LfSOGiv03	-9.99999	???	-9.99999	???
LfSOGiv04	-9.99999	???	-9.99999	???
LbbSOGiv01	-9.99999	???	-9.99999	???
LbbSOGiv02	-9.99999	???	-9.99999	???
LbbSOGiv03	-9.99999	???	-9.99999	???
LbSOGv01	-9.99999	???	-9.99999	???
LbSOGv02	-9.99999	???	-9.99999	???
LbSOGv03	-9.99999	???	-9.99999	???
LbSOGv04	-9.99999	???	-9.99999	???
LbOSOGv01	-9.99999	???	-9.99999	???
LbOSOGv02	-9.99999	???	-9.99999	???
LbOSOGv03	-9.99999	???	-9.99999	???
LaSOGv01	-9.99999	???	-9.99999	???
LaSOGv02	-9.99999	???	-9.99999	???
LaSOGv03	-9.99999	???	-9.99999	???
LaSOGv04	-9.99999	???	-9.99999	???
LaOSOGv01	-9.99999	???	-9.99999	???
LaOSOGv02	-9.99999	???	-9.99999	???
LaOSOGv03	-9.99999	???	-9.99999	???
ISO2	-9.99999	???	-9.99999	???
ISON	-9.99999	???	-9.99999	???
ISOOH	-9.99999	???	-9.99999	???
LHOC3H6O2	-9.99999	???	-9.99999	???
LHOC3H6OOH	-9.99999	???	-9.99999	???
MVKO2	-9.99999	???	-9.99999	???
MVKOOH	-9.99999	???	-9.99999	???
NACA	-9.99999	???	-9.99999	???
ONE	-9.99999	???	-9.99999	???
O	-9.99999	???	-9.99999	???
C	-9.99999	???	-9.99999	???
OXL	3.2E6	Brimblecombe et al. (1992)	7285.	???
O2m	-9.99999	???	-9.99999	???
OHm	-9.99999	???	-9.99999	???
Hp	-9.99999	???	-9.99999	???
NH4p	-9.99999	???	-9.99999	???
NO2m	-9.99999	???	-9.99999	???
NO3m	-9.99999	???	-9.99999	???
NO4m	-9.99999	???	-9.99999	???
CO3m	-9.99999	???	-9.99999	???
CO3mm	-9.99999	???	-9.99999	???
HCO3m	-9.99999	???	-9.99999	???
HCOOm	-9.99999	???	-9.99999	???
CH3COOm	-9.99999	???	-9.99999	???
HOCH2CO2m	-9.99999	???	-9.99999	???
OXLm	-9.99999	???	-9.99999	???
OXLmm	-9.99999	???	-9.99999	???
CH3COCO2Hm	-9.99999	???	-9.99999	???
Clm	-9.99999	???	-9.99999	???
Cl2m	-9.99999	???	-9.99999	???
ClOm	-9.99999	???	-9.99999	???
ClOHm	-9.99999	???	-9.99999	???
Brm	-9.99999	???	-9.99999	???
Br2m	-9.99999	???	-9.99999	???

KPP name	$H^{\ominus}$ [M/atm]	Reference	$\frac{\mathrm{d}\ln H^{\ominus}}{\mathrm{d}(1/T)}$ [K]	Reference
BrOm	-9.99999	???	-9.99999	???
BrOHm	-9.99999	???	-9.99999	???
BrCl2m	-9.99999	???	-9.99999	???
Br2Clm	-9.99999	???	-9.99999	???
Im	-9.99999	???	-9.99999	???
IO2m	-9.99999	???	-9.99999	???
IO3m	-9.99999	???	-9.99999	???
ICl2m	-9.99999	???	-9.99999	???
IBr2m	-9.99999	???	-9.99999	???
IClBrm	-9.99999	???	-9.99999	???
SO3m	-9.99999	???	-9.99999	???
SO3mm	-9.99999	???	-9.99999	???
SO4m	-9.99999	???	-9.99999	???
SO4mm	-9.99999	???	-9.99999	???
SO5m	-9.99999	???	-9.99999	???
HSO3m	-9.99999	???	-9.99999	???
HSO4m	-9.99999	???	-9.99999	???
HSO5m	-9.99999	???	-9.99999	???
CH3SO3m	-9.99999	???	-9.99999	???
CH2OHSO3m	-9.99999	???	-9.99999	???
Nap	-9.99999	???	-9.99999	???
Kp	-9.99999	???	-9.99999	???
Mgpp	-9.99999	???	-9.99999	???
Capp	-9.99999	???	-9.99999	???
Fepp	-9.99999	???	-9.99999	???
Feppp	-9.99999	???	-9.99999	???

KPP name	k_s	Reference
O1D	9.99999	???
O3P	9.99999	???
O2	9.99999	???
O3	9.99999	???
H	9.99999	???
H2	9.99999	???
OH	9.99999	???
HO2	9.99999	???
H2O	9.99999	???
H2O2	9.99999	???
H2OH2O	9.99999	???
N	9.99999	???
N2D	9.99999	???
N2	9.99999	???
NH3	9.99999	???
N2O	9.99999	???
NO	9.99999	???
NO2	9.99999	???
NO3	9.99999	???
N2O5	9.99999	???
HONO	9.99999	???
HOONO	9.99999	???
HNO3	9.99999	???
HNO4	9.99999	???
NH2	9.99999	???
HNO	9.99999	???
NHOH	9.99999	???
NH2O	9.99999	???
NH2OH	9.99999	???
LNITROGEN	9.99999	???
CH2OO	9.99999	???
CH2OOA	9.99999	???
CH3	9.99999	???
CH3O	9.99999	???
CH3O2	9.99999	???
CH3OH	9.99999	???
CH3OOH	9.99999	???
CH4	9.99999	???
CO	9.99999	???
CO2	9.99999	???
HCHO	9.99999	???
HCOOH	9.99999	???
HOCH2O2	9.99999	???
HOCH2OH	9.99999	???
HOCH2OOH	9.99999	???
CH3NO3	9.99999	???
CH3O2NO2	9.99999	???
CH3ONO	9.99999	???
CN	9.99999	???
HCN	9.99999	???
HOCH2O2NO2	9.99999	???
NCO	9.99999	???
LCARBON	9.99999	???
C2H2	9.99999	???
C2H4	9.99999	???

KPP name	k_s	Reference
C2H5O2	9.99999	???
C2H5OH	9.99999	???
C2H5OOH	9.99999	???
C2H6	9.99999	???
CH2CHOH	9.99999	???
CH2CO	9.99999	???
CH3CHO	9.99999	???
CH3CHOHO2	9.99999	???
CH3CHOHOH	9.99999	???
CH3CHOHOOH	9.99999	???
CH3CO	9.99999	???
CH3CO2H	9.99999	???
CH3CO3	9.99999	???
CH3CO3H	9.99999	???
CHOCHOHOH	9.99999	???
CHOHOHCHOHOH	9.99999	???
CHOHOHCOOH	9.99999	???
ETHGLY	9.99999	???
GLYOX	9.99999	???
HCOCH2O2	9.99999	???
HCOCO	9.99999	???
HCOCO2H	9.99999	???
HCOCO3	9.99999	???
HCOCO3H	9.99999	???
HOCH2CH2O	9.99999	???
HOCH2CH2O2	9.99999	???
HOCH2CHO	9.99999	???
HOCH2CHOHOH	9.99999	???
HOCH2CO	9.99999	???
HOCH2CO2H	9.99999	???
HOCH2CO3	9.99999	???
HOCH2CO3H	9.99999	???
HOCHCHO	9.99999	???
HOOCCOOH	9.99999	???
HOOCH2CHO	9.99999	???
HOOCH2CHOHOH	9.99999	???
HOOCH2CO2H	9.99999	???
HOOCH2CO3	9.99999	???
HOOCH2CO3H	9.99999	???
HYETHO2H	9.99999	???
C2H5NO3	9.99999	???
C2H5O2NO2	9.99999	???
CH3CN	9.99999	???
ETHOHNO3	9.99999	???
NCCH2O2	9.99999	???
NO3CH2CHO	9.99999	???
NO3CH2CO3	9.99999	???
NO3CH2PAN	9.99999	???
PAN	9.99999	???
PHAN	9.99999	???
ACETOL	9.99999	???
ALCOCH2OOH	9.99999	???
C2H5CHO	9.99999	???
C2H5CO3	9.99999	???
C33CO	9.99999	???
C3H6	9.99999	???

KPP name	k_s	Reference
C3H8	9.99999	???
CH3CHCO	9.99999	???
CH3COCH2O2	9.99999	???
CH3COCH3	9.99999	???
CH3COCHOHOH	9.99999	???
CH3COCO2H	9.99999	???
CH3COCO3	9.99999	???
CH3COCO3H	9.99999	???
CHOCOCH2O2	9.99999	???
HCOCH2CHO	9.99999	???
HCOCH2CO2H	9.99999	???
HCOCH2CO3	9.99999	???
HCOCH2CO3H	9.99999	???
HCOCOCH2OOH	9.99999	???
HOC2H4CO2H	9.99999	???
HOC2H4CO3	9.99999	???
HOC2H4CO3H	9.99999	???
HOCH2COCH2O2	9.99999	???
HOCH2COCH2OOH	9.99999	???
HOCH2COCHO	9.99999	???
HYPERACET	9.99999	???
HYPROPO2	9.99999	???
HYPROPO2H	9.99999	???
IC3H7O2	9.99999	???
IC3H7OOH	9.99999	???
IPROPOL	9.99999	???
MGLYOX	9.99999	???
NC3H7O2	9.99999	???
NC3H7OOH	9.99999	???
NPROPOL	9.99999	???
PERPROACID	9.99999	???
PROPACID	9.99999	???
PROPENOL	9.99999	???
C32OH13CO	9.99999	???
C3DIALO2	9.99999	???
C3DIALOOH	9.99999	???
HCOCOHCO3	9.99999	???
HCOCOHCO3H	9.99999	???
METACETHO	9.99999	???
C3PAN1	9.99999	???
C3PAN2	9.99999	???
CH3COCH2O2NO2	9.99999	???
IC3H7NO3	9.99999	???
NC3H7NO3	9.99999	???
NOA	9.99999	???
PPN	9.99999	???
PR2O2HNO3	9.99999	???
PRONO3BO2	9.99999	???
PROPOLNO3	9.99999	???
HCOCOHPAN	9.99999	???
BIACET	9.99999	???
BIACETO2	9.99999	???
BIACETOH	9.99999	???
BIACETOOH	9.99999	???
BUT1ENE	9.99999	???
BUT2OLO	9.99999	???

KPP name	k_s	Reference
BUT2OLO2	9.99999	???
BUT2OLOOH	9.99999	???
BUTENOL	9.99999	???
C312COCO3	9.99999	???
C312COCO3H	9.99999	???
C3H7CHO	9.99999	???
C413COOOH	9.99999	???
C44O2	9.99999	???
C44OOH	9.99999	???
C4CODIAL	9.99999	???
CBUT2ENE	9.99999	???
CH3COCHCO	9.99999	???
CH3COCHO2CHO	9.99999	???
CH3COCOCO2H	9.99999	???
CH3COOHCHCHO	9.99999	???
CHOC3COO2	9.99999	???
CO23C3CHO	9.99999	???
CO2C3CHO	9.99999	???
CO2H3CHO	9.99999	???
CO2H3CO2H	9.99999	???
CO2H3CO3	9.99999	???
CO2H3CO3H	9.99999	???
EZCH3CO2CHCHO	9.99999	???
EZCHOCCH3CHO2	9.99999	???
HCOCCH3CHOOH	9.99999	???
HCOCCH3CO	9.99999	???
HCOCO2CH3CHO	9.99999	???
HMAC	9.99999	???
HO12CO3C4	9.99999	???
HVMK	9.99999	???
IBUTALOH	9.99999	???
IBUTDIAL	9.99999	???
IBUTOLBO2	9.99999	???
IBUTOLBOOH	9.99999	???
IC4H10	9.99999	???
IC4H9O2	9.99999	???
IC4H9OOH	9.99999	???
IPRCHO	9.99999	???
IPRCO3	9.99999	???
IPRHOCO2H	9.99999	???
IPRHOCO3	9.99999	???
IPRHOCO3H	9.99999	???
MACO2	9.99999	???
MACO2H	9.99999	???
MACO3	9.99999	???
MACO3H	9.99999	???
MACR	9.99999	???
MACRO	9.99999	???
MACRO2	9.99999	???
MACROH	9.99999	???
MACROOH	9.99999	???
MBOOO	9.99999	???
MEK	9.99999	???
MEPROPENE	9.99999	???
MPROPENOL	9.99999	???
MVK	9.99999	???

KPP name	k_s	Reference
NC4H10	9.99999	???
PERIBUACID	9.99999	???
TBUT2ENE	9.99999	???
TC4H9O2	9.99999	???
TC4H9OOH	9.99999	???
BZFUCO	9.99999	???
BZFUO2	9.99999	???
BZFUONE	9.99999	???
BZFUOOH	9.99999	???
CO14O3CHO	9.99999	???
CO14O3CO2H	9.99999	???
CO2C4DIAL	9.99999	???
EPXC4DIAL	9.99999	???
EPXDLCO2H	9.99999	???
EPXDLCO3	9.99999	???
EPXDLCO3H	9.99999	???
HOCOC4DIAL	9.99999	???
MALANHY	9.99999	???
MALANHYO2	9.99999	???
MALANHYOOH	9.99999	???
MALDALCO2H	9.99999	???
MALDALCO3H	9.99999	???
MALDIAL	9.99999	???
MALDIALCO3	9.99999	???
MALDIALO2	9.99999	???
MALDIALOOH	9.99999	???
MALNHYOHCO	9.99999	???
MECOACEOOH	9.99999	???
MECOACETO2	9.99999	???
BUT2OLNO3	9.99999	???
C312COPAN	9.99999	???
C4PAN5	9.99999	???
IBUTOLBNO3	9.99999	???
IC4H9NO3	9.99999	???
MACRNO3	9.99999	???
MPAN	9.99999	???
MVKNO3	9.99999	???
PIPN	9.99999	???
TC4H9NO3	9.99999	???
EPXDLPAN	9.99999	???
MALDIALPAN	9.99999	???
NBZFUO2	9.99999	???
NBZFUONE	9.99999	???
NBZFUOOH	9.99999	???
NC4DCO2H	9.99999	???
LBUT1ENO2	9.99999	???
LBUT1ENOOH	9.99999	???
LC4H9O2	9.99999	???
LC4H9OOH	9.99999	???
LHMVKABO2	9.99999	???
LHMVKABOOH	9.99999	???
LMEKO2	9.99999	???
LMEKOOH	9.99999	???
LBUT1ENNO3	9.99999	???
LC4H9NO3	9.99999	???
LMEKNO3	9.99999	???

KPP name	k_s	Reference
C1ODC2O2C4OD	9.99999	???
C1ODC2O2C4OOH	9.99999	???
C1ODC2OOHC4OD	9.99999	???
C1ODC3O2C4OOH	9.99999	???
C1OOHC2O2C4OD	9.99999	???
C1OOHC2OOHC4OD	9.99999	???
C1OOHC3O2C4OD	9.99999	???
C4MDIAL	9.99999	???
C511O2	9.99999	???
C511OOH	9.99999	???
C512O2	9.99999	???
C512OOH	9.99999	???
C513CO	9.99999	???
C513O2	9.99999	???
C513OOH	9.99999	???
C514O2	9.99999	???
C514OOH	9.99999	???
C59O2	9.99999	???
C59OOH	9.99999	???
C5H8	9.99999	???
CHOC3COCO3	9.99999	???
CHOC3COOOH	9.99999	???
CO13C4CHO	9.99999	???
CO23C4CHO	9.99999	???
CO23C4CO3	9.99999	???
CO23C4CO3H	9.99999	???
DB1O	9.99999	???
DB1O2	9.99999	???
DB1OOH	9.99999	???
DB2O2	9.99999	???
DB2OOH	9.99999	???
HCOC5	9.99999	???
ISOPAOH	9.99999	???
ISOPBO2	9.99999	???
ISOPBOH	9.99999	???
ISOPBOOH	9.99999	???
ISOPDO2	9.99999	???
ISOPDOH	9.99999	???
ISOPDOOH	9.99999	???
MBO	9.99999	???
MBOACO	9.99999	???
MBOCOCO	9.99999	???
ME3FURAN	9.99999	???
ACCOMECHO	9.99999	???
ACCOMECO3	9.99999	???
ACCOMECO3H	9.99999	???
C24O3CCO2H	9.99999	???
C4CO2DBCO3	9.99999	???
C4CO2DCO3H	9.99999	???
C5134CO2OH	9.99999	???
C54CO	9.99999	???
C5CO14O2	9.99999	???
C5CO14OH	9.99999	???
C5CO14OOH	9.99999	???
C5DIALCO	9.99999	???
C5DIALO2	9.99999	???

KPP name	k_s	Reference
C5DIALOOH	9.99999	???
C5DICARB	9.99999	???
C5DICARBO2	9.99999	???
C5DICAROOH	9.99999	???
MC3ODBCO2H	9.99999	???
MMALANHY	9.99999	???
MMALANHYO2	9.99999	???
MMALNHYOOH	9.99999	???
TLFUO2	9.99999	???
TLFUONE	9.99999	???
TLFUOOH	9.99999	???
C4MCONO3OH	9.99999	???
C514NO3	9.99999	???
C5PAN9	9.99999	???
CHOC3COPAN	9.99999	???
DB1NO3	9.99999	???
ISOPBDNO3O2	9.99999	???
ISOPBNO3	9.99999	???
ISOPDNO3	9.99999	???
NC4CHO	9.99999	???
NC4OHCO3	9.99999	???
NC4OHCO3H	9.99999	???
NC4OHCPAN	9.99999	???
NISOPO2	9.99999	???
NISOPOOH	9.99999	???
NMBOBCO	9.99999	???
ACCOMEPAN	9.99999	???
C4CO2DBPAN	9.99999	???
C5COO2NO2	9.99999	???
NC4MDCO2H	9.99999	???
NTLFUO2	9.99999	???
NTLFUOOH	9.99999	???
LC578O2	9.99999	???
LC578OOH	9.99999	???
LDISOPACO	9.99999	???
LDISOPACO2	9.99999	???
LHC4ACCHO	9.99999	???
LHC4ACCO2H	9.99999	???
LHC4ACCO3	9.99999	???
LHC4ACCO3H	9.99999	???
LIEPOX	9.99999	???
LISOPAB	9.99999	???
LISOPACO	9.99999	???
LISOPACO2	9.99999	???
LISOPACOOH	9.99999	???
LISOPCD	9.99999	???
LISOPEFO	9.99999	???
LISOPEFO2	9.99999	???
LMBOABO2	9.99999	???
LMBOABOOH	9.99999	???
LME3FURANO2	9.99999	???
LZCO3C23DBCOD	9.99999	???
LZCO3HC23DBCOD	9.99999	???
LZCODC23DBCOOH	9.99999	???
LC5PAN1719	9.99999	???
LISOPACNO3	9.99999	???

KPP name	k_s	Reference
LISOPACNO3O2	9.99999	???
LMBOABNO3	9.99999	???
LNISO3	9.99999	???
LNISOOH	9.99999	???
LNMBOABO2	9.99999	???
LNMBOABOOH	9.99999	???
LZCPANC23DBCOD	9.99999	???
C614CO	9.99999	???
C614O2	9.99999	???
C614OOH	9.99999	???
CO235C5CHO	9.99999	???
CO235C6O2	9.99999	???
CO235C6OOH	9.99999	???
BENZENE	9.99999	???
BZBIPERO2	9.99999	???
BZBIPEROOH	9.99999	???
BZEMUCCO	9.99999	???
BZEMUCCO2H	9.99999	???
BZEMUCCO3	9.99999	???
BZEMUCCO3H	9.99999	???
BZEMUCO2	9.99999	???
BZEMUCOOH	9.99999	???
BZEPOXMUC	9.99999	???
BZOBIPEROH	9.99999	???
C5CO2DBCO3	9.99999	???
C5CO2DCO3H	9.99999	???
C5CO2OHCO3	9.99999	???
C5COOHCO3H	9.99999	???
C6125CO	9.99999	???
C615CO2O2	9.99999	???
C615CO2OOH	9.99999	???
C6CO4DB	9.99999	???
C6H5O	9.99999	???
C6H5O2	9.99999	???
C6H5OOH	9.99999	???
CATEC1O	9.99999	???
CATEC1O2	9.99999	???
CATEC1OOH	9.99999	???
CATECHOL	9.99999	???
CPDKETENE	9.99999	???
PBZQCO	9.99999	???
PBZQO2	9.99999	???
PBZQONE	9.99999	???
PBZQOOH	9.99999	???
PHENO2	9.99999	???
PHENOL	9.99999	???
PHENOOH	9.99999	???
C614NO3	9.99999	???
BZBIPERNO3	9.99999	???
BZEMUCNO3	9.99999	???
BZEMUCPAN	9.99999	???
C5CO2DBPAN	9.99999	???
C5CO2OHPAN	9.99999	???
DNPHEN	9.99999	???
DNPHENO2	9.99999	???
DNPHENOOH	9.99999	???

KPP name	k_s	Reference
HOC6H4NO2	9.99999	???
NBZQO2	9.99999	???
NBZQOOH	9.99999	???
NCATECHOL	9.99999	???
NCATECO2	9.99999	???
NCATECOOH	9.99999	???
NCPDKETENE	9.99999	???
NDNPHENO2	9.99999	???
NDNPHENOOH	9.99999	???
NNCATECO2	9.99999	???
NNCATECOOH	9.99999	???
NPHEN1O	9.99999	???
NPHEN1O2	9.99999	???
NPHEN1OOH	9.99999	???
NPHENO2	9.99999	???
NPHENOOH	9.99999	???
C235C6CO3H	9.99999	???
C716O2	9.99999	???
C716OOH	9.99999	???
C721O2	9.99999	???
C721OOH	9.99999	???
C722O2	9.99999	???
C722OOH	9.99999	???
CO235C6CHO	9.99999	???
CO235C6CO3	9.99999	???
MCPDKETENE	9.99999	???
ROO6R3O	9.99999	???
ROO6R3O2	9.99999	???
ROO6R5O2	9.99999	???
BENZAL	9.99999	???
C6CO2OHCO3	9.99999	???
C6COOHCO3H	9.99999	???
C6H5CH2O2	9.99999	???
C6H5CH2OOH	9.99999	???
C6H5CO3	9.99999	???
C6H5CO3H	9.99999	???
C7CO4DB	9.99999	???
CRESO2	9.99999	???
CRESOL	9.99999	???
CRESOOH	9.99999	???
MCATEC1O	9.99999	???
MCATEC1O2	9.99999	???
MCATEC1OOH	9.99999	???
MCATECHOL	9.99999	???
OXYL1O2	9.99999	???
OXYL1OOH	9.99999	???
PHCOOH	9.99999	???
PTLQCO	9.99999	???
PTLQO2	9.99999	???
PTLQONE	9.99999	???
PTLQOOH	9.99999	???
TLBIPERO2	9.99999	???
TLBIPEROOH	9.99999	???
TLEMUCCO	9.99999	???
TLEMUCCO2H	9.99999	???
TLEMUCCO3	9.99999	???

KPP name	k_s	Reference
TLEMUCCO3H	9.99999	???
TLEMUCO2	9.99999	???
TLEMUCOOH	9.99999	???
TLEPOXMUC	9.99999	???
TLOBIPEROH	9.99999	???
TOL1O	9.99999	???
TOLUENE	9.99999	???
C7PAN3	9.99999	???
C6CO2OHPAN	9.99999	???
C6H5CH2NO3	9.99999	???
DNCRES	9.99999	???
DNCRESO2	9.99999	???
DNCRESOOH	9.99999	???
MNCATECH	9.99999	???
MNCATECO2	9.99999	???
MNCATECOOH	9.99999	???
MNCPDKETENE	9.99999	???
MNNCATCOOH	9.99999	???
MNNCATECO2	9.99999	???
NCRES1O	9.99999	???
NCRES1O2	9.99999	???
NCRES1OOH	9.99999	???
NCRESO2	9.99999	???
NCRESOOH	9.99999	???
NDNCRESO2	9.99999	???
NDNCRESOOH	9.99999	???
NPTLQO2	9.99999	???
NPTLQOOH	9.99999	???
PBZN	9.99999	???
TLBIPERNO3	9.99999	???
TLEMUCNO3	9.99999	???
TLEMUCPAN	9.99999	???
TOL1OHNO2	9.99999	???
C721CHO	9.99999	???
C721CO3	9.99999	???
C721CO3H	9.99999	???
C810O2	9.99999	???
C810OOH	9.99999	???
C811O2	9.99999	???
C812O2	9.99999	???
C812OOH	9.99999	???
C813O2	9.99999	???
C813OOH	9.99999	???
C85O2	9.99999	???
C85OOH	9.99999	???
C86O2	9.99999	???
C86OOH	9.99999	???
C89O2	9.99999	???
C89OOH	9.99999	???
C8BC	9.99999	???
C8BCCO	9.99999	???
C8BCO2	9.99999	???
C8BCOOH	9.99999	???
NORPINIC	9.99999	???
EBENZ	9.99999	???
STYRENE	9.99999	???

KPP name	k_s	Reference
STYRENO2	9.99999	???
STYRENOOH	9.99999	???
C721PAN	9.99999	???
C810NO3	9.99999	???
C89NO3	9.99999	???
C8BCNO3	9.99999	???
NSTYRENO2	9.99999	???
NSTYRENOOH	9.99999	???
LXYL	9.99999	???
C811CO3	9.99999	???
C811CO3H	9.99999	???
C85CO3	9.99999	???
C85CO3H	9.99999	???
C89CO2H	9.99999	???
C89CO3	9.99999	???
C89CO3H	9.99999	???
C96O2	9.99999	???
C96OOH	9.99999	???
C97O2	9.99999	???
C97OOH	9.99999	???
C98O2	9.99999	???
C98OOH	9.99999	???
NOPINDCO	9.99999	???
NOPINDO2	9.99999	???
NOPINDOOH	9.99999	???
NOPINONE	9.99999	???
NOPINOO	9.99999	???
NORPINAL	9.99999	???
NORPINENOL	9.99999	???
PINIC	9.99999	???
C811PAN	9.99999	???
C89PAN	9.99999	???
C96NO3	9.99999	???
C9PAN2	9.99999	???
LTMB	9.99999	???
APINAOO	9.99999	???
APINBOO	9.99999	???
APINENE	9.99999	???
BPINAO2	9.99999	???
BPINAOOH	9.99999	???
BPINENE	9.99999	???
C106O2	9.99999	???
C106OOH	9.99999	???
C109CO	9.99999	???
C109O2	9.99999	???
C109OOH	9.99999	???
C96CO3	9.99999	???
CAMPHENE	9.99999	???
CARENE	9.99999	???
MENTHEN6ONE	9.99999	???
OH2MENTHEN6ONE	9.99999	???
OHMENTHEN6ONEO2	9.99999	???
PERPINONIC	9.99999	???
PINAL	9.99999	???
PINALO2	9.99999	???
PINALOOH	9.99999	???

KPP name	k_s	Reference
PINENOL	9.99999	???
PINONIC	9.99999	???
RO6R1O2	9.99999	???
RO6R3O2	9.99999	???
ROO6R1O2	9.99999	???
SABINENE	9.99999	???
BPINANO3	9.99999	???
C106NO3	9.99999	???
C10PAN2	9.99999	???
PINALNO3	9.99999	???
RO6R1NO3	9.99999	???
ROO6R1NO3	9.99999	???
LAPINABNO3	9.99999	???
LAPINABO2	9.99999	???
LAPINABOOH	9.99999	???
LNAPINABO2	9.99999	???
LNAPINABOOH	9.99999	???
LNBPINABO2	9.99999	???
LNBPINABOOH	9.99999	???
LHAROM	9.99999	???
LFLUORINE	9.99999	???
CHF3	9.99999	???
CHF2CF3	9.99999	???
CH3CF3	9.99999	???
CH2F2	9.99999	???
CH3CHF2	9.99999	???
CCl4	9.99999	???
CF2Cl2	9.99999	???
CF2ClCF2Cl	9.99999	???
CF2ClCFCl2	9.99999	???
CF3CF2Cl	9.99999	???
CFCl3	9.99999	???
CH2Cl2	9.99999	???
CH2FCF3	9.99999	???
CH3CCl3	9.99999	???
CH3CFCl2	9.99999	???
CH3Cl	9.99999	???
CHCl3	9.99999	???
CHF2Cl	9.99999	???
Cl	9.99999	???
Cl2	9.99999	???
Cl2O2	9.99999	???
ClNO2	9.99999	???
ClNO3	9.99999	???
ClO	9.99999	???
HCl	9.99999	???
HOCl	9.99999	???
OClO	9.99999	???
LCHLORINE	9.99999	???
Br	9.99999	???
Br2	9.99999	???
BrCl	9.99999	???
BrNO2	9.99999	???
BrNO3	9.99999	???
BrO	9.99999	???
CF2ClBr	9.99999	???

KPP name	k_s	Reference
CF3Br	9.99999	???
CH2Br2	9.99999	???
CH2ClBr	9.99999	???
CH3Br	9.99999	???
CHBr3	9.99999	???
CHCl2Br	9.99999	???
CHClBr2	9.99999	???
HBr	9.99999	???
HOBr	9.99999	???
LBROMINE	9.99999	???
C3H7I	9.99999	???
CH2ClI	9.99999	???
CH2I2	9.99999	???
CH3I	9.99999	???
HI	9.99999	???
HIO3	9.99999	???
HOI	9.99999	???
I	9.99999	???
I2	9.99999	???
I2O2	9.99999	???
IBr	9.99999	???
ICl	9.99999	???
INO2	9.99999	???
INO3	9.99999	???
IO	9.99999	???
IPART	9.99999	???
OIO	9.99999	???
CH3SO2	9.99999	???
CH3SO3	9.99999	???
CH3SO3H	9.99999	???
DMS	9.99999	???
DMSO	9.99999	???
H2SO4	9.99999	???
OCS	9.99999	???
S	9.99999	???
SF6	9.99999	???
SH	9.99999	???
SO	9.99999	???
SO2	9.99999	???
SO3	9.99999	???
LSULFUR	9.99999	???
Hg	9.99999	???
HgO	9.99999	???
HgCl	9.99999	???
HgCl2	9.99999	???
HgBr	9.99999	???
HgBr2	9.99999	???
ClHgBr	9.99999	???
BrHgOBr	9.99999	???
ClHgOBr	9.99999	???
RGM	9.99999	???
LTERP	9.99999	???
LALK4	9.99999	???
LALK5	9.99999	???
LARO1	9.99999	???
LARO2	9.99999	???

KPP name	k_s	Reference
LOLE1	9.99999	???
LOLE2	9.99999	???
LfPOG02	9.99999	???
LfPOG03	9.99999	???
LfPOG04	9.99999	???
LfPOG05	9.99999	???
LbbPOG02	9.99999	???
LbbPOG03	9.99999	???
LbbPOG04	9.99999	???
LfSOGsv01	9.99999	???
LfSOGsv02	9.99999	???
LbbSOGsv01	9.99999	???
LbbSOGsv02	9.99999	???
LfSOGiv01	9.99999	???
LfSOGiv02	9.99999	???
LfSOGiv03	9.99999	???
LfSOGiv04	9.99999	???
LbbSOGiv01	9.99999	???
LbbSOGiv02	9.99999	???
LbbSOGiv03	9.99999	???
LbSOGv01	9.99999	???
LbSOGv02	9.99999	???
LbSOGv03	9.99999	???
LbSOGv04	9.99999	???
LbOSOGv01	9.99999	???
LbOSOGv02	9.99999	???
LbOSOGv03	9.99999	???
LaSOGv01	9.99999	???
LaSOGv02	9.99999	???
LaSOGv03	9.99999	???
LaSOGv04	9.99999	???
LaOSOGv01	9.99999	???
LaOSOGv02	9.99999	???
LaOSOGv03	9.99999	???
ISO2	9.99999	???
ISON	9.99999	???
ISOOH	9.99999	???
LHOC3H6O2	9.99999	???
LHOC3H6OOH	9.99999	???
MVKO2	9.99999	???
MVKOOH	9.99999	???
NACA	9.99999	???
ONE	9.99999	???
O	9.99999	???
C	9.99999	???
OXL	9.99999	???
O2m	9.99999	???
OHm	9.99999	???
Hp	9.99999	???
NH4p	9.99999	???
NO2m	9.99999	???
NO3m	9.99999	???
NO4m	9.99999	???
CO3m	9.99999	???
CO3mm	9.99999	???
HCO3m	9.99999	???

KPP name	k_s	Reference
HCOOm	9.99999	???
CH3COOm	9.99999	???
HOCH2CO2m	9.99999	???
OXLm	9.99999	???
OXLmm	9.99999	???
CH3COCO2Hm	9.99999	???
Clm	9.99999	???
Cl2m	9.99999	???
ClOm	9.99999	???
ClOHm	9.99999	???
Brm	9.99999	???
Br2m	9.99999	???
BrOm	9.99999	???
BrOHm	9.99999	???
BrCl2m	9.99999	???
Br2Clm	9.99999	???
Im	9.99999	???
IO2m	9.99999	???
IO3m	9.99999	???
ICl2m	9.99999	???
IBr2m	9.99999	???
IClBrm	9.99999	???
SO3m	9.99999	???
SO3mm	9.99999	???
SO4m	9.99999	???
SO4mm	9.99999	???
SO5m	9.99999	???
HSO3m	9.99999	???
HSO4m	9.99999	???
HSO5m	9.99999	???
CH3SO3m	9.99999	???
CH2OHSO3m	9.99999	???
Nap	9.99999	???
Kp	9.99999	???
Mgpp	9.99999	???
Capp	9.99999	???
Fepp	9.99999	???
Feppp	9.99999	???

KPP name	$\alpha^{\ominus}$	Reference	α-T-dep	Reference
O1D	0.1	see notes	0.	???
O3P	0.1	see notes	0.	???
O2	0.01	see notes	2000.	???
O3	0.002	DeMore et al. (1997)	0.	???
H	0.1	see notes	0.	???
H2	0.1	see notes	0.	???
OH	0.01	Takami et al. (1998)	0.	???
HO2	0.5	Thornton and Abbatt (2005)	0.	???
H2O	0.0	see notes	0.	???
H2O2	0.077	Worsnop et al. (1989)	3127.	???
H2OH2O	0.1	see notes	0.	???
N	0.1	see notes	0.	???
N2D	0.1	see notes	0.	???
N2	0.1	see notes	0.	???
NH3	0.06	DeMore et al. (1997)	0.	???
N2O	0.1	see notes	0.	???
NO	5.0E-5	Saastad et al. (1993)	0.	???
NO2	0.0015	Ponche et al. (1993)	0.	???
NO3	0.04	Rudich et al. (1996)	0.	???
N2O5	0.1	see notes	0.	???
HONO	0.04	DeMore et al. (1997)	0.	???
HOONO	0.1	see notes	0.	???
HNO3	0.5	Abbatt and Waschewsky (1998)	0.	???
HNO4	0.1	see notes	0.	???
NH2	0.1	see notes	0.	???
HNO	0.1	see notes	0.	???
NHOH	0.1	see notes	0.	???
NH2O	0.1	see notes	0.	???
NH2OH	0.1	see notes	0.	???
LNITROGEN	0.1	see notes	0.	???
CH2OO	0.1	see notes	0.	???
CH2OOA	0.1	see notes	0.	???
CH3	0.1	see notes	0.	???
CH3O	0.1	see notes	0.	???
CH3O2	0.01	see notes	2000.	???
CH3OH	0.1	see notes	0.	???
CH3OOH	0.0046	Magi et al. (1997)	3273.	???
CH4	0.1	see notes	0.	???
CO	0.1	see notes	0.	???
CO2	0.01	see notes	2000.	???
HCHO	0.04	DeMore et al. (1997)	0.	???
HCOOH	0.014	DeMore et al. (1997)	3978.	???
HOCH2O2	0.1	see notes	0.	???
HOCH2OH	0.1	see notes	0.	???
HOCH2OOH	0.1	see notes	0.	???
CH3NO3	0.1	see notes	0.	???
CH3O2NO2	0.1	see notes	0.	???
CH3ONO	0.1	see notes	0.	???
CN	0.1	see notes	0.	???
HCN	0.1	see notes	0.	???
HOCH2O2NO2	0.1	see notes	0.	???
NCO	0.1	see notes	0.	???
LCARBON	0.1	see notes	0.	???
C2H2	0.1	see notes	0.	???
C2H4	0.1	see notes	0.	???

KPP name	$\alpha^{\ominus}$	Reference	α-T-dep	Reference
C2H5O2	0.1	see notes	0.	???
C2H5OH	9.E-3	???	0.	???
C2H5OOH	0.1	see notes	0.	???
C2H6	0.1	see notes	0.	???
CH2CHOH	0.1	see notes	0.	???
CH2CO	0.1	see notes	0.	???
CH3CHO	3.0E-2	see notes	0.	???
CH3CHOHO2	0.1	see notes	0.	???
CH3CHOHOH	0.1	see notes	0.	???
CH3CHOHOOH	0.1	see notes	0.	???
CH3CO	0.1	see notes	0.	???
CH3CO2H	2.0E-2	Davidovits et al. (1995)	4079.	???
CH3CO3	0.1	see notes	0.	???
CH3CO3H	0.1	see notes	0.	???
CHOCHOHOH	0.1	see notes	0.	???
CHOHOHCHOHOH	0.1	see notes	0.	???
CHOHOHCOOH	0.1	see notes	0.	???
ETHGLY	0.1	see notes	0.	???
GLYOX	0.1	see notes	0.	???
HCOCH2O2	0.1	see notes	0.	???
HCOCO	0.1	see notes	0.	???
HCOCO2H	0.1	see notes	0.	???
HCOCO3	0.1	see notes	0.	???
HCOCO3H	0.1	see notes	0.	???
HOCH2CH2O	0.1	see notes	0.	???
HOCH2CH2O2	0.1	see notes	0.	???
HOCH2CHO	0.1	see notes	0.	???
HOCH2CHOHOH	0.1	see notes	0.	???
HOCH2CO	0.1	see notes	0.	???
HOCH2CO2H	0.1	see notes	0.	???
HOCH2CO3	0.1	see notes	0.	???
HOCH2CO3H	0.1	see notes	0.	???
HOCHCHO	0.1	see notes	0.	???
HOOCCOOH	0.1	see notes	0.	???
HOOCH2CHO	0.1	see notes	0.	???
HOOCH2CHOHOH	0.1	see notes	0.	???
HOOCH2CO2H	0.1	see notes	0.	???
HOOCH2CO3	0.1	see notes	0.	???
HOOCH2CO3H	0.1	see notes	0.	???
HYETHO2H	0.1	see notes	0.	???
C2H5NO3	0.1	see notes	0.	???
C2H5O2NO2	0.1	see notes	0.	???
CH3CN	0.1	see notes	0.	???
ETHOHNO3	0.1	see notes	0.	???
NCCH2O2	0.1	see notes	0.	???
NO3CH2CHO	0.1	see notes	0.	???
NO3CH2CO3	0.1	see notes	0.	???
NO3CH2PAN	0.1	see notes	0.	???
PAN	0.1	see notes	0.	???
PHAN	0.1	see notes	0.	???
ACETOL	0.1	see notes	0.	???
ALCOCH2OOH	0.1	see notes	0.	???
C2H5CHO	0.1	see notes	0.	???
C2H5CO3	0.1	see notes	0.	???
C33CO	0.1	see notes	0.	???
C3H6	0.1	see notes	0.	???

KPP name	$\alpha^{\ominus}$	Reference	α-T-dep	Reference
C3H8	0.1	see notes	0.	???
CH3CHCO	0.1	see notes	0.	???
CH3COCH2O2	0.1	see notes	0.	???
CH3COCH3	3.72E-3	Davidovits et al. (1995)	6395.	???
CH3COCHOHOH	0.1	see notes	0.	???
CH3COCO2H	0.1	see notes	0.	???
CH3COCO3	0.1	see notes	0.	???
CH3COCO3H	0.1	see notes	0.	???
CHOCOCH2O2	0.1	see notes	0.	???
HCOCH2CHO	0.1	see notes	0.	???
HCOCH2CO2H	0.1	see notes	0.	???
HCOCH2CO3	0.1	see notes	0.	???
HCOCH2CO3H	0.1	see notes	0.	???
HCOCOCH2OOH	0.1	see notes	0.	???
HOC2H4CO2H	0.1	see notes	0.	???
HOC2H4CO3	0.1	see notes	0.	???
HOC2H4CO3H	0.1	see notes	0.	???
HOCH2COCH2O2	0.1	see notes	0.	???
HOCH2COCH2OOH	0.1	see notes	0.	???
HOCH2COCHO	0.1	see notes	0.	???
HYPERACET	0.1	see notes	0.	???
HYPROPO2	0.1	see notes	0.	???
HYPROPO2H	0.1	see notes	0.	???
IC3H7O2	0.1	see notes	0.	???
IC3H7OOH	0.1	see notes	0.	???
IPROPOL	0.1	see notes	0.	???
MGLYOX	0.1	see notes	0.	???
NC3H7O2	0.1	see notes	0.	???
NC3H7OOH	0.1	see notes	0.	???
NPROPOL	0.1	see notes	0.	???
PERPROACID	0.1	see notes	0.	???
PROPACID	0.1	see notes	0.	???
PROPENOL	0.1	see notes	0.	???
C32OH13CO	0.1	see notes	0.	???
C3DIALO2	0.1	see notes	0.	???
C3DIALOOH	0.1	see notes	0.	???
HCOCOHCO3	0.1	see notes	0.	???
HCOCOHCO3H	0.1	see notes	0.	???
METACETHO	0.1	see notes	0.	???
C3PAN1	0.1	see notes	0.	???
C3PAN2	0.1	see notes	0.	???
CH3COCH2O2NO2	0.1	see notes	0.	???
IC3H7NO3	0.1	see notes	0.	???
NC3H7NO3	0.1	see notes	0.	???
NOA	0.1	see notes	0.	???
PPN	0.1	see notes	0.	???
PR2O2HNO3	0.1	see notes	0.	???
PRONO3BO2	0.1	see notes	0.	???
PROPOLNO3	0.1	see notes	0.	???
HCOCOHPAN	0.1	see notes	0.	???
BIACET	0.1	see notes	0.	???
BIACETO2	0.1	see notes	0.	???
BIACETOH	0.1	see notes	0.	???
BIACETOOH	0.1	see notes	0.	???
BUT1ENE	0.1	see notes	0.	???
BUT2OLO	0.1	see notes	0.	???

KPP name	$\alpha^{\ominus}$	Reference	α-T-dep	Reference
BUT2OLO2	0.1	see notes	0.	???
BUT2OLOOH	0.1	see notes	0.	???
BUTENOL	0.1	see notes	0.	???
C312COCO3	0.1	see notes	0.	???
C312COCO3H	0.1	see notes	0.	???
C3H7CHO	0.1	see notes	0.	???
C413COOOH	0.1	see notes	0.	???
C44O2	0.1	see notes	0.	???
C44OOH	0.1	see notes	0.	???
C4CODIAL	0.1	see notes	0.	???
CBUT2ENE	0.1	see notes	0.	???
CH3COCHCO	0.1	see notes	0.	???
CH3COCHO2CHO	0.1	see notes	0.	???
CH3COCOCO2H	0.1	see notes	0.	???
CH3COOHCHCHO	0.1	see notes	0.	???
CHOC3COO2	0.1	see notes	0.	???
CO23C3CHO	0.1	see notes	0.	???
CO2C3CHO	0.1	see notes	0.	???
CO2H3CHO	0.1	see notes	0.	???
CO2H3CO2H	0.1	see notes	0.	???
CO2H3CO3	0.1	see notes	0.	???
CO2H3CO3H	0.1	see notes	0.	???
EZCH3CO2CHCHO	0.1	see notes	0.	???
EZCHOCCH3CHO2	0.1	see notes	0.	???
HCOCCH3CHOOH	0.1	see notes	0.	???
HCOCCH3CO	0.1	see notes	0.	???
HCOCO2CH3CHO	0.1	see notes	0.	???
HMAC	0.1	see notes	0.	???
HO12CO3C4	0.1	see notes	0.	???
HVMK	0.1	see notes	0.	???
IBUTALOH	0.1	see notes	0.	???
IBUTDIAL	0.1	see notes	0.	???
IBUTOLBO2	0.1	see notes	0.	???
IBUTOLBOOH	0.1	see notes	0.	???
IC4H10	0.1	see notes	0.	???
IC4H9O2	0.1	see notes	0.	???
IC4H9OOH	0.1	see notes	0.	???
IPRCHO	0.1	see notes	0.	???
IPRCO3	0.1	see notes	0.	???
IPRHOCO2H	0.1	see notes	0.	???
IPRHOCO3	0.1	see notes	0.	???
IPRHOCO3H	0.1	see notes	0.	???
MACO2	0.1	see notes	0.	???
MACO2H	0.1	see notes	0.	???
MACO3	0.1	see notes	0.	???
MACO3H	0.1	see notes	0.	???
MACR	0.1	see notes	0.	???
MACRO	0.1	see notes	0.	???
MACRO2	0.1	see notes	0.	???
MACROH	0.1	see notes	0.	???
MACROOH	0.1	see notes	0.	???
MBOOO	0.1	see notes	0.	???
MEK	0.1	see notes	0.	???
MEPROPENE	0.1	see notes	0.	???
MPROPENOL	0.1	see notes	0.	???
MVK	0.1	see notes	0.	???

KPP name	$\alpha^{\ominus}$	Reference	α-T-dep	Reference
NC4H10	0.1	see notes	0.	???
PERIBUACID	0.1	see notes	0.	???
TBUT2ENE	0.1	see notes	0.	???
TC4H9O2	0.1	see notes	0.	???
TC4H9OOH	0.1	see notes	0.	???
BZFUCO	0.1	see notes	0.	???
BZFUO2	0.1	see notes	0.	???
BZFUONE	0.1	see notes	0.	???
BZFUOOH	0.1	see notes	0.	???
CO14O3CHO	0.1	see notes	0.	???
CO14O3CO2H	0.1	see notes	0.	???
CO2C4DIAL	0.1	see notes	0.	???
EPXC4DIAL	0.1	see notes	0.	???
EPXDLCO2H	0.1	see notes	0.	???
EPXDLCO3	0.1	see notes	0.	???
EPXDLCO3H	0.1	see notes	0.	???
HOCOC4DIAL	0.1	see notes	0.	???
MALANHY	0.1	see notes	0.	???
MALANHYO2	0.1	see notes	0.	???
MALANHYOOH	0.1	see notes	0.	???
MALDALCO2H	0.1	see notes	0.	???
MALDALCO3H	0.1	see notes	0.	???
MALDIAL	0.1	see notes	0.	???
MALDIALCO3	0.1	see notes	0.	???
MALDIALO2	0.1	see notes	0.	???
MALDIALOOH	0.1	see notes	0.	???
MALNHYOHCO	0.1	see notes	0.	???
MECOACEOOH	0.1	see notes	0.	???
MECOACETO2	0.1	see notes	0.	???
BUT2OLNO3	0.1	see notes	0.	???
C312COPAN	0.1	see notes	0.	???
C4PAN5	0.1	see notes	0.	???
IBUTOLBNO3	0.1	see notes	0.	???
IC4H9NO3	0.1	see notes	0.	???
MACRNO3	0.1	see notes	0.	???
MPAN	0.1	see notes	0.	???
MVKNO3	0.1	see notes	0.	???
PIPN	0.1	see notes	0.	???
TC4H9NO3	0.1	see notes	0.	???
EPXDLPAN	0.1	see notes	0.	???
MALDIALPAN	0.1	see notes	0.	???
NBZFUO2	0.1	see notes	0.	???
NBZFUONE	0.1	see notes	0.	???
NBZFUOOH	0.1	see notes	0.	???
NC4DCO2H	0.1	see notes	0.	???
LBUT1ENO2	0.1	see notes	0.	???
LBUT1ENOOH	0.1	see notes	0.	???
LC4H9O2	0.1	see notes	0.	???
LC4H9OOH	0.1	see notes	0.	???
LHMVKABO2	0.1	see notes	0.	???
LHMVKABOOH	0.1	see notes	0.	???
LMEKO2	0.1	see notes	0.	???
LMEKOOH	0.1	see notes	0.	???
LBUT1ENNO3	0.1	see notes	0.	???
LC4H9NO3	0.1	see notes	0.	???
LMEKNO3	0.1	see notes	0.	???

KPP name	$\alpha^{\ominus}$	Reference	α-T-dep	Reference
C1ODC2O2C4OD	0.1	see notes	0.	???
C1ODC2O2C4OOH	0.1	see notes	0.	???
C1ODC2OOHC4OD	0.1	see notes	0.	???
C1ODC3O2C4OOH	0.1	see notes	0.	???
C1OOHC2O2C4OD	0.1	see notes	0.	???
C1OOHC2OOHC4OD	0.1	see notes	0.	???
C1OOHC3O2C4OD	0.1	see notes	0.	???
C4MDIAL	0.1	see notes	0.	???
C511O2	0.1	see notes	0.	???
C511OOH	0.1	see notes	0.	???
C512O2	0.1	see notes	0.	???
C512OOH	0.1	see notes	0.	???
C513CO	0.1	see notes	0.	???
C513O2	0.1	see notes	0.	???
C513OOH	0.1	see notes	0.	???
C514O2	0.1	see notes	0.	???
C514OOH	0.1	see notes	0.	???
C59O2	0.1	see notes	0.	???
C59OOH	0.1	see notes	0.	???
C5H8	0.1	see notes	0.	???
CHOC3COCO3	0.1	see notes	0.	???
CHOC3COOOH	0.1	see notes	0.	???
CO13C4CHO	0.1	see notes	0.	???
CO23C4CHO	0.1	see notes	0.	???
CO23C4CO3	0.1	see notes	0.	???
CO23C4CO3H	0.1	see notes	0.	???
DB1O	0.1	see notes	0.	???
DB1O2	0.1	see notes	0.	???
DB1OOH	0.1	see notes	0.	???
DB2O2	0.1	see notes	0.	???
DB2OOH	0.1	see notes	0.	???
HCOC5	0.1	see notes	0.	???
ISOPAOH	0.1	see notes	0.	???
ISOPBO2	0.1	see notes	0.	???
ISOPBOH	0.1	see notes	0.	???
ISOPBOOH	0.1	see notes	0.	???
ISOPDO2	0.1	see notes	0.	???
ISOPDOH	0.1	see notes	0.	???
ISOPDOOH	0.1	see notes	0.	???
MBO	0.1	see notes	0.	???
MBOACO	0.1	see notes	0.	???
MBOCOCO	0.1	see notes	0.	???
ME3FURAN	0.1	see notes	0.	???
ACCOMECHO	0.1	see notes	0.	???
ACCOMECO3	0.1	see notes	0.	???
ACCOMECO3H	0.1	see notes	0.	???
C24O3CCO2H	0.1	see notes	0.	???
C4CO2DBCO3	0.1	see notes	0.	???
C4CO2DCO3H	0.1	see notes	0.	???
C5134CO2OH	0.1	see notes	0.	???
C54CO	0.1	see notes	0.	???
C5CO14O2	0.1	see notes	0.	???
C5CO14OH	0.1	see notes	0.	???
C5CO14OOH	0.1	see notes	0.	???
C5DIALCO	0.1	see notes	0.	???
C5DIALO2	0.1	see notes	0.	???

KPP name	$\alpha^{\ominus}$	Reference	α-T-dep	Reference
C5DIALOOH	0.1	see notes	0.	???
C5DICARB	0.1	see notes	0.	???
C5DICARBO2	0.1	see notes	0.	???
C5DICAROOH	0.1	see notes	0.	???
MC3ODBCO2H	0.1	see notes	0.	???
MMALANHY	0.1	see notes	0.	???
MMALANHYO2	0.1	see notes	0.	???
MMALNHYOOH	0.1	see notes	0.	???
TLFUO2	0.1	see notes	0.	???
TLFUONE	0.1	see notes	0.	???
TLFUOOH	0.1	see notes	0.	???
C4MCONO3OH	0.1	see notes	0.	???
C514NO3	0.1	see notes	0.	???
C5PAN9	0.1	see notes	0.	???
CHOC3COPAN	0.1	see notes	0.	???
DB1NO3	0.1	see notes	0.	???
ISOPBDNO3O2	0.1	see notes	0.	???
ISOPBNO3	0.1	see notes	0.	???
ISOPDNO3	0.1	see notes	0.	???
NC4CHO	0.1	see notes	0.	???
NC4OHCO3	0.1	see notes	0.	???
NC4OHCO3H	0.1	see notes	0.	???
NC4OHCPAN	0.1	see notes	0.	???
NISOPO2	0.1	see notes	0.	???
NISOPOOH	0.1	see notes	0.	???
NMBOBCO	0.1	see notes	0.	???
ACCOMEPAN	0.1	see notes	0.	???
C4CO2DBPAN	0.1	see notes	0.	???
C5COO2NO2	0.1	see notes	0.	???
NC4MDCO2H	0.1	see notes	0.	???
NTLFUO2	0.1	see notes	0.	???
NTLFUOOH	0.1	see notes	0.	???
LC578O2	0.1	see notes	0.	???
LC578OOH	0.1	see notes	0.	???
LDISOPACO	0.1	see notes	0.	???
LDISOPACO2	0.1	see notes	0.	???
LHC4ACCHO	0.1	see notes	0.	???
LHC4ACCO2H	0.1	see notes	0.	???
LHC4ACCO3	0.1	see notes	0.	???
LHC4ACCO3H	0.1	see notes	0.	???
LIEPOX	0.1	see notes	0.	???
LISOPAB	0.1	see notes	0.	???
LISOPACO	0.1	see notes	0.	???
LISOPACO2	0.1	see notes	0.	???
LISOPACOOH	0.1	see notes	0.	???
LISOPCD	0.1	see notes	0.	???
LISOPEFO	0.1	see notes	0.	???
LISOPEFO2	0.1	see notes	0.	???
LMBOABO2	0.1	see notes	0.	???
LMBOABOOH	0.1	see notes	0.	???
LME3FURANO2	0.1	see notes	0.	???
LZCO3C23DBCOD	0.1	see notes	0.	???
LZCO3HC23DBCOD	0.1	see notes	0.	???
LZCODC23DBCOOH	0.1	see notes	0.	???
LC5PAN1719	0.1	see notes	0.	???
LISOPACNO3	0.1	see notes	0.	???

KPP name	$\alpha^{\ominus}$	Reference	α-T-dep	Reference
LISOPACNO3O2	0.1	see notes	0.	???
LMBOABNO3	0.1	see notes	0.	???
LNISO3	0.1	see notes	0.	???
LNISOOH	0.1	see notes	0.	???
LNMBOABO2	0.1	see notes	0.	???
LNMBOABOOH	0.1	see notes	0.	???
LZCPANC23DBCOD	0.1	see notes	0.	???
C614CO	0.1	see notes	0.	???
C614O2	0.1	see notes	0.	???
C614OOH	0.1	see notes	0.	???
CO235C5CHO	0.1	see notes	0.	???
CO235C6O2	0.1	see notes	0.	???
CO235C6OOH	0.1	see notes	0.	???
BENZENE	0.1	see notes	0.	???
BZBIPERO2	0.1	see notes	0.	???
BZBIPEROOH	0.1	see notes	0.	???
BZEMUCCO	0.1	see notes	0.	???
BZEMUCCO2H	0.1	see notes	0.	???
BZEMUCCO3	0.1	see notes	0.	???
BZEMUCCO3H	0.1	see notes	0.	???
BZEMUCO2	0.1	see notes	0.	???
BZEMUCOOH	0.1	see notes	0.	???
BZEPOXMUC	0.1	see notes	0.	???
BZOBIPEROH	0.1	see notes	0.	???
C5CO2DBCO3	0.1	see notes	0.	???
C5CO2DCO3H	0.1	see notes	0.	???
C5CO2OHCO3	0.1	see notes	0.	???
C5COOHCO3H	0.1	see notes	0.	???
C6125CO	0.1	see notes	0.	???
C615CO2O2	0.1	see notes	0.	???
C615CO2OOH	0.1	see notes	0.	???
C6CO4DB	0.1	see notes	0.	???
C6H5O	0.1	see notes	0.	???
C6H5O2	0.1	see notes	0.	???
C6H5OOH	0.1	see notes	0.	???
CATEC1O	0.1	see notes	0.	???
CATEC1O2	0.1	see notes	0.	???
CATEC1OOH	0.1	see notes	0.	???
CATECHOL	0.1	see notes	0.	???
CPDKETENE	0.1	see notes	0.	???
PBZQCO	0.1	see notes	0.	???
PBZQO2	0.1	see notes	0.	???
PBZQONE	0.1	see notes	0.	???
PBZQOOH	0.1	see notes	0.	???
PHENO2	0.1	see notes	0.	???
PHENOL	0.1	see notes	0.	???
PHENOOH	0.1	see notes	0.	???
C614NO3	0.1	see notes	0.	???
BZBIPERNO3	0.1	see notes	0.	???
BZEMUCNO3	0.1	see notes	0.	???
BZEMUCPAN	0.1	see notes	0.	???
C5CO2DBPAN	0.1	see notes	0.	???
C5CO2OHPAN	0.1	see notes	0.	???
DNPHEN	0.1	see notes	0.	???
DNPHENO2	0.1	see notes	0.	???
DNPHENOOH	0.1	see notes	0.	???

KPP name	$\alpha^{\ominus}$	Reference	α-T-dep	Reference
HOC6H4NO2	0.1	see notes	0.	???
NBZQO2	0.1	see notes	0.	???
NBZQOOH	0.1	see notes	0.	???
NCATECHOL	0.1	see notes	0.	???
NCATECO2	0.1	see notes	0.	???
NCATECOOH	0.1	see notes	0.	???
NCPDKETENE	0.1	see notes	0.	???
NDNPHENO2	0.1	see notes	0.	???
NDNPHENOOH	0.1	see notes	0.	???
NNCATECO2	0.1	see notes	0.	???
NNCATECOOH	0.1	see notes	0.	???
NPHEN1O	0.1	see notes	0.	???
NPHEN1O2	0.1	see notes	0.	???
NPHEN1OOH	0.1	see notes	0.	???
NPHENO2	0.1	see notes	0.	???
NPHENOOH	0.1	see notes	0.	???
C235C6CO3H	0.1	see notes	0.	???
C716O2	0.1	see notes	0.	???
C716OOH	0.1	see notes	0.	???
C721O2	0.1	see notes	0.	???
C721OOH	0.1	see notes	0.	???
C722O2	0.1	see notes	0.	???
C722OOH	0.1	see notes	0.	???
CO235C6CHO	0.1	see notes	0.	???
CO235C6CO3	0.1	see notes	0.	???
MCPDKETENE	0.1	see notes	0.	???
ROO6R3O	0.1	see notes	0.	???
ROO6R3O2	0.1	see notes	0.	???
ROO6R5O2	0.1	see notes	0.	???
BENZAL	0.1	see notes	0.	???
C6CO2OHCO3	0.1	see notes	0.	???
C6COOHCO3H	0.1	see notes	0.	???
C6H5CH2O2	0.1	see notes	0.	???
C6H5CH2OOH	0.1	see notes	0.	???
C6H5CO3	0.1	see notes	0.	???
C6H5CO3H	0.1	see notes	0.	???
C7CO4DB	0.1	see notes	0.	???
CRESO2	0.1	see notes	0.	???
CRESOL	0.1	see notes	0.	???
CRESOOH	0.1	see notes	0.	???
MCATEC1O	0.1	see notes	0.	???
MCATEC1O2	0.1	see notes	0.	???
MCATEC1OOH	0.1	see notes	0.	???
MCATECHOL	0.1	see notes	0.	???
OXYL1O2	0.1	see notes	0.	???
OXYL1OOH	0.1	see notes	0.	???
PHCOOH	0.1	see notes	0.	???
PTLQCO	0.1	see notes	0.	???
PTLQO2	0.1	see notes	0.	???
PTLQONE	0.1	see notes	0.	???
PTLQOOH	0.1	see notes	0.	???
TLBIPERO2	0.1	see notes	0.	???
TLBIPEROOH	0.1	see notes	0.	???
TLEMUCCO	0.1	see notes	0.	???
TLEMUCCO2H	0.1	see notes	0.	???
TLEMUCCO3	0.1	see notes	0.	???

KPP name	$\alpha^{\ominus}$	Reference	α-T-dep	Reference
TLEMUCCO3H	0.1	see notes	0.	???
TLEMUCO2	0.1	see notes	0.	???
TLEMUCOOH	0.1	see notes	0.	???
TLEPOXMUC	0.1	see notes	0.	???
TLOBIPEROH	0.1	see notes	0.	???
TOL1O	0.1	see notes	0.	???
TOLUENE	0.1	see notes	0.	???
C7PAN3	0.1	see notes	0.	???
C6CO2OHPAN	0.1	see notes	0.	???
C6H5CH2NO3	0.1	see notes	0.	???
DNCRES	0.1	see notes	0.	???
DNCRESO2	0.1	see notes	0.	???
DNCRESOOH	0.1	see notes	0.	???
MNCATECH	0.1	see notes	0.	???
MNCATECO2	0.1	see notes	0.	???
MNCATECOOH	0.1	see notes	0.	???
MNCPDKETENE	0.1	see notes	0.	???
MNNCATCOOH	0.1	see notes	0.	???
MNNCATECO2	0.1	see notes	0.	???
NCRES1O	0.1	see notes	0.	???
NCRES1O2	0.1	see notes	0.	???
NCRES1OOH	0.1	see notes	0.	???
NCRESO2	0.1	see notes	0.	???
NCRESOOH	0.1	see notes	0.	???
NDNCRESO2	0.1	see notes	0.	???
NDNCRESOOH	0.1	see notes	0.	???
NPTLQO2	0.1	see notes	0.	???
NPTLQOOH	0.1	see notes	0.	???
PBZN	0.1	see notes	0.	???
TLBIPERNO3	0.1	see notes	0.	???
TLEMUCNO3	0.1	see notes	0.	???
TLEMUCPAN	0.1	see notes	0.	???
TOL1OHNO2	0.1	see notes	0.	???
C721CHO	0.1	see notes	0.	???
C721CO3	0.1	see notes	0.	???
C721CO3H	0.1	see notes	0.	???
C810O2	0.1	see notes	0.	???
C810OOH	0.1	see notes	0.	???
C811O2	0.1	see notes	0.	???
C812O2	0.1	see notes	0.	???
C812OOH	0.1	see notes	0.	???
C813O2	0.1	see notes	0.	???
C813OOH	0.1	see notes	0.	???
C85O2	0.1	see notes	0.	???
C85OOH	0.1	see notes	0.	???
C86O2	0.1	see notes	0.	???
C86OOH	0.1	see notes	0.	???
C89O2	0.1	see notes	0.	???
C89OOH	0.1	see notes	0.	???
C8BC	0.1	see notes	0.	???
C8BCCO	0.1	see notes	0.	???
C8BCO2	0.1	see notes	0.	???
C8BCOOH	0.1	see notes	0.	???
NORPINIC	0.1	see notes	0.	???
EBENZ	0.1	see notes	0.	???
STYRENE	0.1	see notes	0.	???

KPP name	$\alpha^{\ominus}$	Reference	α-T-dep	Reference
STYRENO2	0.1	see notes	0.	???
STYRENOOH	0.1	see notes	0.	???
C721PAN	0.1	see notes	0.	???
C810NO3	0.1	see notes	0.	???
C89NO3	0.1	see notes	0.	???
C8BCNO3	0.1	see notes	0.	???
NSTYRENO2	0.1	see notes	0.	???
NSTYRENOOH	0.1	see notes	0.	???
LXYL	0.1	see notes	0.	???
C811CO3	0.1	see notes	0.	???
C811CO3H	0.1	see notes	0.	???
C85CO3	0.1	see notes	0.	???
C85CO3H	0.1	see notes	0.	???
C89CO2H	0.1	see notes	0.	???
C89CO3	0.1	see notes	0.	???
C89CO3H	0.1	see notes	0.	???
C96O2	0.1	see notes	0.	???
C96OOH	0.1	see notes	0.	???
C97O2	0.1	see notes	0.	???
C97OOH	0.1	see notes	0.	???
C98O2	0.1	see notes	0.	???
C98OOH	0.1	see notes	0.	???
NOPINDCO	0.1	see notes	0.	???
NOPINDO2	0.1	see notes	0.	???
NOPINDOOH	0.1	see notes	0.	???
NOPINONE	0.1	see notes	0.	???
NOPINOO	0.1	see notes	0.	???
NORPINAL	0.1	see notes	0.	???
NORPINENOL	0.1	see notes	0.	???
PINIC	0.1	see notes	0.	???
C811PAN	0.1	see notes	0.	???
C89PAN	0.1	see notes	0.	???
C96NO3	0.1	see notes	0.	???
C9PAN2	0.1	see notes	0.	???
LTMB	0.1	see notes	0.	???
APINAOO	0.1	see notes	0.	???
APINBOO	0.1	see notes	0.	???
APINENE	0.1	see notes	0.	???
BPINAO2	0.1	see notes	0.	???
BPINAOOH	0.1	see notes	0.	???
BPINENE	0.1	see notes	0.	???
C106O2	0.1	see notes	0.	???
C106OOH	0.1	see notes	0.	???
C109CO	0.1	see notes	0.	???
C109O2	0.1	see notes	0.	???
C109OOH	0.1	see notes	0.	???
C96CO3	0.1	see notes	0.	???
CAMPHENE	0.1	see notes	0.	???
CARENE	0.1	see notes	0.	???
MENTHEN6ONE	0.1	see notes	0.	???
OH2MENTHEN6ONE	0.1	see notes	0.	???
OHMENTHEN6ONEO2	0.1	see notes	0.	???
PERPINONIC	0.1	see notes	0.	???
PINAL	0.1	see notes	0.	???
PINALO2	0.1	see notes	0.	???
PINALOOH	0.1	see notes	0.	???

KPP name	$\alpha^{\ominus}$	Reference	α-T-dep	Reference
PINENOL	0.1	see notes	0.	???
PINONIC	0.1	see notes	0.	???
RO6R1O2	0.1	see notes	0.	???
RO6R3O2	0.1	see notes	0.	???
ROO6R1O2	0.1	see notes	0.	???
SABINENE	0.1	see notes	0.	???
BPINANO3	0.1	see notes	0.	???
C106NO3	0.1	see notes	0.	???
C10PAN2	0.1	see notes	0.	???
PINALNO3	0.1	see notes	0.	???
RO6R1NO3	0.1	see notes	0.	???
ROO6R1NO3	0.1	see notes	0.	???
LAPINABNO3	0.1	see notes	0.	???
LAPINABO2	0.1	see notes	0.	???
LAPINABOOH	0.1	see notes	0.	???
LNAPINABO2	0.1	see notes	0.	???
LNAPINABOOH	0.1	see notes	0.	???
LNBPINABO2	0.1	see notes	0.	???
LNBPINABOOH	0.1	see notes	0.	???
LHAROM	0.1	see notes	0.	???
LFLUORINE	0.1	see notes	0.	???
CHF3	0.1	see notes	0.	???
CHF2CF3	0.1	see notes	0.	???
CH3CF3	0.1	see notes	0.	???
CH2F2	0.1	see notes	0.	???
CH3CHF2	0.1	see notes	0.	???
CCl4	0.1	see notes	0.	???
CF2Cl2	0.1	see notes	0.	???
CF2ClCF2Cl	0.1	see notes	0.	???
CF2ClCFCl2	0.1	see notes	0.	???
CF3CF2Cl	0.1	see notes	0.	???
CFCl3	0.1	see notes	0.	???
CH2Cl2	0.1	see notes	0.	???
CH2FCF3	0.1	see notes	0.	???
CH3CCl3	0.1	see notes	0.	???
CH3CFCl2	0.1	see notes	0.	???
CH3Cl	0.1	see notes	0.	???
CHCl3	0.1	see notes	0.	???
CHF2Cl	0.1	see notes	0.	???
Cl	0.1	see notes	0.	???
Cl2	0.038	Hu et al. (1995)	6546.	???
Cl2O2	0.1	see notes	0.	???
ClNO2	0.1	see notes	0.	???
ClNO3	0.108	Deiber et al. (2004)	0.	???
ClO	0.1	see notes	0.	???
HCl	0.074	Schweitzer et al. (2000)	3072.	???
HOCl	0.5	see notes	0.	???
OClO	0.1	see notes	0.	???
LCHLORINE	0.1	see notes	0.	???
Br	0.1	see notes	0.	???
Br2	0.038	Hu et al. (1995)	6546.	???
BrCl	0.038	see notes	6546.	???
BrNO2	0.1	see notes	0.	???
BrNO3	0.063	Deiber et al. (2004)	0.	???
BrO	0.1	see notes	0.	???
CF2ClBr	0.1	see notes	0.	???

KPP name	$\alpha^{\ominus}$	Reference	α-T-dep	Reference
CF3Br	0.1	see notes	0.	???
CH2Br2	0.1	see notes	0.	???
CH2ClBr	0.1	see notes	0.	???
CH3Br	0.1	see notes	0.	???
CHBr3	0.1	see notes	0.	???
CHCl2Br	0.1	see notes	0.	???
CHClBr2	0.1	see notes	0.	???
HBr	0.032	Schweitzer et al. (2000)	3940.	???
HOBr	0.5	Abbatt and Waschewsky (1998)	0.	???
LBROMINE	0.1	see notes	0.	???
C3H7I	0.1	see notes	0.	???
CH2ClI	0.1	see notes	0.	???
CH2I2	0.1	see notes	0.	???
CH3I	0.1	see notes	0.	???
HI	0.036	Schweitzer et al. (2000)	4130.	???
HIO3	0.01	see notes	0.	???
HOI	0.5	see notes	0.	???
I	0.1	see notes	0.	???
I2	0.01	see notes	2000.	???
I2O2	0.1	see notes	2000.	???
IBr	0.018	see notes	2000.	???
ICl	0.018	Braban et al. (2007)	2000.	???
INO2	0.1	see notes	2000.	???
INO3	0.1	see notes	2000.	???
IO	0.5	see notes	2000.	???
IPART	0.1	see notes	0.	???
OIO	0.01	see notes	0.	???
CH3SO2	0.1	see notes	0.	???
CH3SO3	0.1	see notes	0.	???
CH3SO3H	0.076	De Bruyn et al. (1994)	1762.	???
DMS	0.1	see notes	0.	???
DMSO	0.048	De Bruyn et al. (1994)	2578.	???
H2SO4	0.65	Pöschl et al. (1998)	0.	???
OCS	0.1	see notes	0.	???
S	0.1	see notes	0.	???
SF6	0.1	see notes	0.	???
SH	0.1	see notes	0.	???
SO	0.1	see notes	0.	???
SO2	0.11	DeMore et al. (1997)	0.	???
SO3	0.1	see notes	0.	???
LSULFUR	0.1	see notes	0.	???
Hg	0.1	see notes	0.	???
HgO	0.1	see notes	0.	???
HgCl	0.1	see notes	0.	???
HgCl2	0.1	see notes	0.	???
HgBr	0.1	see notes	0.	???
HgBr2	0.1	see notes	0.	???
ClHgBr	0.1	see notes	0.	???
BrHgOBr	0.1	see notes	0.	???
ClHgOBr	0.1	see notes	0.	???
RGM	0.1	see notes	0.	???
LTERP	0.1	see notes	0.	???
LALK4	0.1	see notes	0.	???
LALK5	0.1	see notes	0.	???
LARO1	0.1	see notes	0.	???
LARO2	0.1	see notes	0.	???

KPP name	$\alpha^{\ominus}$	Reference	α-T-dep	Reference
LOLE1	0.1	see notes	0.	???
LOLE2	0.1	see notes	0.	???
LfPOG02	0.1	see notes	0.	???
LfPOG03	0.1	see notes	0.	???
LfPOG04	0.1	see notes	0.	???
LfPOG05	0.1	see notes	0.	???
LbbPOG02	0.1	see notes	0.	???
LbbPOG03	0.1	see notes	0.	???
LbbPOG04	0.1	see notes	0.	???
LfSOGsv01	0.1	see notes	0.	???
LfSOGsv02	0.1	see notes	0.	???
LbbSOGsv01	0.1	see notes	0.	???
LbbSOGsv02	0.1	see notes	0.	???
LfSOGiv01	0.1	see notes	0.	???
LfSOGiv02	0.1	see notes	0.	???
LfSOGiv03	0.1	see notes	0.	???
LfSOGiv04	0.1	see notes	0.	???
LbbSOGiv01	0.1	see notes	0.	???
LbbSOGiv02	0.1	see notes	0.	???
LbbSOGiv03	0.1	see notes	0.	???
LbSOGv01	0.1	see notes	0.	???
LbSOGv02	0.1	see notes	0.	???
LbSOGv03	0.1	see notes	0.	???
LbSOGv04	0.1	see notes	0.	???
LbOSOGv01	0.1	see notes	0.	???
LbOSOGv02	0.1	see notes	0.	???
LbOSOGv03	0.1	see notes	0.	???
LaSOGv01	0.1	see notes	0.	???
LaSOGv02	0.1	see notes	0.	???
LaSOGv03	0.1	see notes	0.	???
LaSOGv04	0.1	see notes	0.	???
LaOSOGv01	0.1	see notes	0.	???
LaOSOGv02	0.1	see notes	0.	???
LaOSOGv03	0.1	see notes	0.	???
ISO2	0.1	see notes	0.	???
ISON	0.1	see notes	0.	???
ISOOH	0.1	see notes	0.	???
LHOC3H6O2	0.1	see notes	0.	???
LHOC3H6OOH	0.1	see notes	0.	???
MVKO2	0.1	see notes	0.	???
MVKOOH	0.1	see notes	0.	???
NACA	0.1	see notes	0.	???
ONE	0.1	see notes	0.	???
O	0.1	see notes	0.	???
C	0.1	see notes	0.	???
OXL	0.1	see notes	0.	???
O2m	0.1	see notes	0.	???
OHm	0.1	see notes	0.	???
Hp	0.1	see notes	0.	???
NH4p	0.1	see notes	0.	???
NO2m	0.1	see notes	0.	???
NO3m	0.1	see notes	0.	???
NO4m	0.1	see notes	0.	???
CO3m	0.1	see notes	0.	???
CO3mm	0.1	see notes	0.	???
HCO3m	0.1	see notes	0.	???

KPP name	$\alpha^{\ominus}$	Reference	α-T-dep	Reference
HCOOm	0.1	see notes	0.	???
CH3COOm	0.1	see notes	0.	???
HOCH2CO2m	0.1	see notes	0.	???
OXLm	0.1	see notes	0.	???
OXLmm	0.1	see notes	0.	???
CH3COCO2Hm	0.1	see notes	0.	???
Clm	0.1	see notes	0.	???
Cl2m	0.1	see notes	0.	???
ClOm	0.1	see notes	0.	???
ClOHm	0.1	see notes	0.	???
Brm	0.1	see notes	0.	???
Br2m	0.1	see notes	0.	???
BrOm	0.1	see notes	0.	???
BrOHm	0.1	see notes	0.	???
BrCl2m	0.1	see notes	0.	???
Br2Clm	0.1	see notes	0.	???
Im	0.1	see notes	0.	???
IO2m	0.1	see notes	0.	???
IO3m	0.1	see notes	0.	???
ICl2m	0.1	see notes	0.	???
IBr2m	0.1	see notes	0.	???
IClBrm	0.1	see notes	0.	???
SO3m	0.1	see notes	0.	???
SO3mm	0.1	see notes	0.	???
SO4m	0.1	see notes	0.	???
SO4mm	0.1	see notes	0.	???
SO5m	0.1	see notes	0.	???
HSO3m	0.1	see notes	0.	???
HSO4m	0.1	see notes	0.	???
HSO5m	0.1	see notes	0.	???
CH3SO3m	0.1	see notes	0.	???
CH2OHSO3m	0.1	see notes	0.	???
Nap	0.1	see notes	0.	???
Kp	0.1	see notes	0.	???
Mgpp	0.1	see notes	0.	???
Capp	0.1	see notes	0.	???
Fepp	0.1	see notes	0.	???
Feppp	0.1	see notes	0.	???

KPP name	K_a	Reference	K_{a2}	Reference
O1D	9.99999	???	9.99999	???
O3P	9.99999	???	9.99999	???
O2	9.99999	???	9.99999	???
O3	9.99999	???	9.99999	???
H	9.99999	???	9.99999	???
H2	9.99999	???	9.99999	???
OH	9.99999	???	9.99999	???
HO2	3.5E-5	Pandis and Seinfeld (1989)	9.99999	???
H2O	9.99999	???	9.99999	???
H2O2	9.99999	???	9.99999	???
H2OH2O	9.99999	???	9.99999	???
N	9.99999	???	9.99999	???
N2D	9.99999	???	9.99999	???
N2	9.99999	???	9.99999	???
NH3	-1.75E-5	Pandis and Seinfeld (1989)	9.99999	???
N2O	9.99999	???	9.99999	???
NO	9.99999	???	9.99999	???
NO2	9.99999	???	9.99999	???
NO3	9.99999	???	9.99999	???
N2O5	9.99999	???	9.99999	???
HONO	5.1E-4	Pandis and Seinfeld (1989)	9.99999	???
HOONO	9.99999	???	9.99999	???
HNO3	15.4	Pandis and Seinfeld (1989)	9.99999	???
HNO4	1.E-5	Warneck (1999)	9.99999	???
NH2	9.99999	???	9.99999	???
HNO	9.99999	???	9.99999	???
NHOH	9.99999	???	9.99999	???
NH2O	9.99999	???	9.99999	???
NH2OH	9.99999	???	9.99999	???
LNITROGEN	9.99999	???	9.99999	???
CH2OO	9.99999	???	9.99999	???
CH2OOA	9.99999	???	9.99999	???
CH3	9.99999	???	9.99999	???
CH3O	9.99999	???	9.99999	???
CH3O2	9.99999	???	9.99999	???
CH3OH	9.99999	???	9.99999	???
CH3OOH	9.99999	???	9.99999	???
CH4	9.99999	???	9.99999	???
CO	9.99999	???	9.99999	???
CO2	9.99999	???	9.99999	???
HCHO	9.99999	???	9.99999	???
HCOOH	1.78E-4	Pandis and Seinfeld (1989)	9.99999	???
HOCH2O2	9.99999	???	9.99999	???
HOCH2OH	9.99999	???	9.99999	???
HOCH2OOH	9.99999	???	9.99999	???
CH3NO3	9.99999	???	9.99999	???
CH3O2NO2	9.99999	???	9.99999	???
CH3ONO	9.99999	???	9.99999	???
CN	9.99999	???	9.99999	???
HCN	9.99999	???	9.99999	???
HOCH2O2NO2	9.99999	???	9.99999	???
NCO	9.99999	???	9.99999	???
LCARBON	9.99999	???	9.99999	???
C2H2	9.99999	???	9.99999	???
C2H4	9.99999	???	9.99999	???

KPP name	K_a	Reference	K_{a2}	Reference
C2H5O2	9.99999	???	9.99999	???
C2H5OH	9.99999	???	9.99999	???
C2H5OOH	9.99999	???	9.99999	???
C2H6	9.99999	???	9.99999	???
CH2CHOH	9.99999	???	9.99999	???
CH2CO	9.99999	???	9.99999	???
CH3CHO	9.99999	???	9.99999	???
CH3CHOHO2	9.99999	???	9.99999	???
CH3CHOHOH	9.99999	???	9.99999	???
CH3CHOHOOH	9.99999	???	9.99999	???
CH3CO	9.99999	???	9.99999	???
CH3CO2H	1.75E-5	Lide (2008)	9.99999	???
CH3CO3	9.99999	???	9.99999	???
CH3CO3H	9.99999	???	9.99999	???
CHOCHOHOH	9.99999	???	9.99999	???
CHOHOHCHOHOH	9.99999	???	9.99999	???
CHOHOHCOOH	9.99999	???	9.99999	???
ETHGLY	9.99999	???	9.99999	???
GLYOX	9.99999	???	9.99999	???
HCOCH2O2	9.99999	???	9.99999	???
HCOCO	9.99999	???	9.99999	???
HCOCO2H	6.61E-4	Lide (2008)	9.99999	???
HCOCO3	9.99999	???	9.99999	???
HCOCO3H	9.99999	???	9.99999	???
HOCH2CH2O	9.99999	???	9.99999	???
HOCH2CH2O2	9.99999	???	9.99999	???
HOCH2CHO	9.99999	???	9.99999	???
HOCH2CHOHOH	9.99999	???	9.99999	???
HOCH2CO	9.99999	???	9.99999	???
HOCH2CO2H	1.48E-4	Lide (2008)	9.99999	???
HOCH2CO3	9.99999	???	9.99999	???
HOCH2CO3H	9.99999	???	9.99999	???
HOCHCHO	9.99999	???	9.99999	???
HOOCCOOH	9.99999	???	9.99999	???
HOOCH2CHO	9.99999	???	9.99999	???
HOOCH2CHOHOH	9.99999	???	9.99999	???
HOOCH2CO2H	9.99999	???	9.99999	???
HOOCH2CO3	9.99999	???	9.99999	???
HOOCH2CO3H	9.99999	???	9.99999	???
HYETHO2H	9.99999	???	9.99999	???
C2H5NO3	9.99999	???	9.99999	???
C2H5O2NO2	9.99999	???	9.99999	???
CH3CN	9.99999	???	9.99999	???
ETHOHNO3	9.99999	???	9.99999	???
NCCH2O2	9.99999	???	9.99999	???
NO3CH2CHO	9.99999	???	9.99999	???
NO3CH2CO3	9.99999	???	9.99999	???
NO3CH2PAN	9.99999	???	9.99999	???
PAN	9.99999	???	9.99999	???
PHAN	9.99999	???	9.99999	???
ACETOL	9.99999	???	9.99999	???
ALCOCH2OOH	9.99999	???	9.99999	???
C2H5CHO	9.99999	???	9.99999	???
C2H5CO3	9.99999	???	9.99999	???
C33CO	9.99999	???	9.99999	???
C3H6	9.99999	???	9.99999	???

KPP name	K_a	Reference	K_{a2}	Reference
C3H8	9.99999	???	9.99999	???
CH3CHCO	9.99999	???	9.99999	???
CH3COCH2O2	9.99999	???	9.99999	???
CH3COCH3	9.99999	???	9.99999	???
CH3COCHOHOH	9.99999	???	9.99999	???
CH3COCO2H	4.07E-3	Lide (2008)	9.99999	???
CH3COCO3	9.99999	???	9.99999	???
CH3COCO3H	9.99999	???	9.99999	???
CHOCOCH2O2	9.99999	???	9.99999	???
HCOCH2CHO	9.99999	???	9.99999	???
HCOCH2CO2H	9.99999	???	9.99999	???
HCOCH2CO3	9.99999	???	9.99999	???
HCOCH2CO3H	9.99999	???	9.99999	???
HCOCOCH2OOH	9.99999	???	9.99999	???
HOC2H4CO2H	9.99999	???	9.99999	???
HOC2H4CO3	9.99999	???	9.99999	???
HOC2H4CO3H	9.99999	???	9.99999	???
HOCH2COCH2O2	9.99999	???	9.99999	???
HOCH2COCH2OOH	9.99999	???	9.99999	???
HOCH2COCHO	9.99999	???	9.99999	???
HYPERACET	9.99999	???	9.99999	???
HYPROPO2	9.99999	???	9.99999	???
HYPROPO2H	9.99999	???	9.99999	???
IC3H7O2	9.99999	???	9.99999	???
IC3H7OOH	9.99999	???	9.99999	???
IPROPOL	9.99999	???	9.99999	???
MGLYOX	9.99999	???	9.99999	???
NC3H7O2	9.99999	???	9.99999	???
NC3H7OOH	9.99999	???	9.99999	???
NPROPOL	9.99999	???	9.99999	???
PERPROACID	9.99999	???	9.99999	???
PROPACID	1.35E-5	Lide (2008)	9.99999	???
PROPENOL	9.99999	???	9.99999	???
C32OH13CO	9.99999	???	9.99999	???
C3DIALO2	9.99999	???	9.99999	???
C3DIALOOH	9.99999	???	9.99999	???
HCOCOHCO3	9.99999	???	9.99999	???
HCOCOHCO3H	9.99999	???	9.99999	???
METACETHO	9.99999	???	9.99999	???
C3PAN1	9.99999	???	9.99999	???
C3PAN2	9.99999	???	9.99999	???
CH3COCH2O2NO2	9.99999	???	9.99999	???
IC3H7NO3	9.99999	???	9.99999	???
NC3H7NO3	9.99999	???	9.99999	???
NOA	9.99999	???	9.99999	???
PPN	9.99999	???	9.99999	???
PR2O2HNO3	9.99999	???	9.99999	???
PRONO3BO2	9.99999	???	9.99999	???
PROPOLNO3	9.99999	???	9.99999	???
HCOCOHPAN	9.99999	???	9.99999	???
BIACET	9.99999	???	9.99999	???
BIACETO2	9.99999	???	9.99999	???
BIACETOH	9.99999	???	9.99999	???
BIACETOOH	9.99999	???	9.99999	???
BUT1ENE	9.99999	???	9.99999	???
BUT2OLO	9.99999	???	9.99999	???

KPP name	K_a	Reference	K_{a2}	Reference
BUT2OLO2	9.99999	???	9.99999	???
BUT2OLOOH	9.99999	???	9.99999	???
BUTENOL	9.99999	???	9.99999	???
C312COCO3	9.99999	???	9.99999	???
C312COCO3H	9.99999	???	9.99999	???
C3H7CHO	9.99999	???	9.99999	???
C413COOOH	9.99999	???	9.99999	???
C44O2	9.99999	???	9.99999	???
C44OOH	9.99999	???	9.99999	???
C4CODIAL	9.99999	???	9.99999	???
CBUT2ENE	9.99999	???	9.99999	???
CH3COCHCO	9.99999	???	9.99999	???
CH3COCHO2CHO	9.99999	???	9.99999	???
CH3COCOCO2H	9.99999	???	9.99999	???
CH3COOHCHCHO	9.99999	???	9.99999	???
CHOC3COO2	9.99999	???	9.99999	???
CO23C3CHO	9.99999	???	9.99999	???
CO2C3CHO	9.99999	???	9.99999	???
CO2H3CHO	9.99999	???	9.99999	???
CO2H3CO2H	9.99999	???	9.99999	???
CO2H3CO3	9.99999	???	9.99999	???
CO2H3CO3H	9.99999	???	9.99999	???
EZCH3CO2CHCHO	9.99999	???	9.99999	???
EZCHOCCH3CHO2	9.99999	???	9.99999	???
HCOCCH3CHOOH	9.99999	???	9.99999	???
HCOCCH3CO	9.99999	???	9.99999	???
HCOCO2CH3CHO	9.99999	???	9.99999	???
HMAC	9.99999	???	9.99999	???
HO12CO3C4	9.99999	???	9.99999	???
HVMK	9.99999	???	9.99999	???
IBUTALOH	9.99999	???	9.99999	???
IBUTDIAL	9.99999	???	9.99999	???
IBUTOLBO2	9.99999	???	9.99999	???
IBUTOLBOOH	9.99999	???	9.99999	???
IC4H10	9.99999	???	9.99999	???
IC4H9O2	9.99999	???	9.99999	???
IC4H9OOH	9.99999	???	9.99999	???
IPRCHO	9.99999	???	9.99999	???
IPRCO3	9.99999	???	9.99999	???
IPRHOCO2H	9.99999	???	9.99999	???
IPRHOCO3	9.99999	???	9.99999	???
IPRHOCO3H	9.99999	???	9.99999	???
MACO2	9.99999	???	9.99999	???
MACO2H	2.24E-5	Dong et al. (2008)	9.99999	???
MACO3	9.99999	???	9.99999	???
MACO3H	9.99999	???	9.99999	???
MACR	9.99999	???	9.99999	???
MACRO	9.99999	???	9.99999	???
MACRO2	9.99999	???	9.99999	???
MACROH	9.99999	???	9.99999	???
MACROOH	9.99999	???	9.99999	???
MBOOO	9.99999	???	9.99999	???
MEK	9.99999	???	9.99999	???
MEPROPENE	9.99999	???	9.99999	???
MPROPENOL	9.99999	???	9.99999	???
MVK	9.99999	???	9.99999	???

KPP name	K_a	Reference	K_{a2}	Reference
NC4H10	9.99999	???	9.99999	???
PERIBUACID	9.99999	???	9.99999	???
TBUT2ENE	9.99999	???	9.99999	???
TC4H9O2	9.99999	???	9.99999	???
TC4H9OOH	9.99999	???	9.99999	???
BZFUCO	9.99999	???	9.99999	???
BZFUO2	9.99999	???	9.99999	???
BZFUONE	9.99999	???	9.99999	???
BZFUOOH	9.99999	???	9.99999	???
CO14O3CHO	9.99999	???	9.99999	???
CO14O3CO2H	9.99999	???	9.99999	???
CO2C4DIAL	9.99999	???	9.99999	???
EPXC4DIAL	9.99999	???	9.99999	???
EPXDLCO2H	9.99999	???	9.99999	???
EPXDLCO3	9.99999	???	9.99999	???
EPXDLCO3H	9.99999	???	9.99999	???
HOCOC4DIAL	9.99999	???	9.99999	???
MALANHY	9.99999	???	9.99999	???
MALANHYO2	9.99999	???	9.99999	???
MALANHYOOH	9.99999	???	9.99999	???
MALDALCO2H	9.99999	???	9.99999	???
MALDALCO3H	9.99999	???	9.99999	???
MALDIAL	9.99999	???	9.99999	???
MALDIALCO3	9.99999	???	9.99999	???
MALDIALO2	9.99999	???	9.99999	???
MALDIALOOH	9.99999	???	9.99999	???
MALNHYOHCO	9.99999	???	9.99999	???
MECOACEOOH	9.99999	???	9.99999	???
MECOACETO2	9.99999	???	9.99999	???
BUT2OLNO3	9.99999	???	9.99999	???
C312COPAN	9.99999	???	9.99999	???
C4PAN5	9.99999	???	9.99999	???
IBUTOLBNO3	9.99999	???	9.99999	???
IC4H9NO3	9.99999	???	9.99999	???
MACRNO3	9.99999	???	9.99999	???
MPAN	9.99999	???	9.99999	???
MVKNO3	9.99999	???	9.99999	???
PIPN	9.99999	???	9.99999	???
TC4H9NO3	9.99999	???	9.99999	???
EPXDLPAN	9.99999	???	9.99999	???
MALDIALPAN	9.99999	???	9.99999	???
NBZFUO2	9.99999	???	9.99999	???
NBZFUONE	9.99999	???	9.99999	???
NBZFUOOH	9.99999	???	9.99999	???
NC4DCO2H	9.99999	???	9.99999	???
LBUT1ENO2	9.99999	???	9.99999	???
LBUT1ENOOH	9.99999	???	9.99999	???
LC4H9O2	9.99999	???	9.99999	???
LC4H9OOH	9.99999	???	9.99999	???
LHMVKABO2	9.99999	???	9.99999	???
LHMVKABOOH	9.99999	???	9.99999	???
LMEKO2	9.99999	???	9.99999	???
LMEKOOH	9.99999	???	9.99999	???
LBUT1ENNO3	9.99999	???	9.99999	???
LC4H9NO3	9.99999	???	9.99999	???
LMEKNO3	9.99999	???	9.99999	???

KPP name	K_a	Reference	K_{a2}	Reference
C1ODC2O2C4OD	9.99999	???	9.99999	???
C1ODC2O2C4OOH	9.99999	???	9.99999	???
C1ODC2OOHC4OD	9.99999	???	9.99999	???
C1ODC3O2C4OOH	9.99999	???	9.99999	???
C1OOHC2O2C4OD	9.99999	???	9.99999	???
C1OOHC2OOHC4OD	9.99999	???	9.99999	???
C1OOHC3O2C4OD	9.99999	???	9.99999	???
C4MDIAL	9.99999	???	9.99999	???
C511O2	9.99999	???	9.99999	???
C511OOH	9.99999	???	9.99999	???
C512O2	9.99999	???	9.99999	???
C512OOH	9.99999	???	9.99999	???
C513CO	9.99999	???	9.99999	???
C513O2	9.99999	???	9.99999	???
C513OOH	9.99999	???	9.99999	???
C514O2	9.99999	???	9.99999	???
C514OOH	9.99999	???	9.99999	???
C59O2	9.99999	???	9.99999	???
C59OOH	9.99999	???	9.99999	???
C5H8	9.99999	???	9.99999	???
CHOC3COCO3	9.99999	???	9.99999	???
CHOC3COOOH	9.99999	???	9.99999	???
CO13C4CHO	9.99999	???	9.99999	???
CO23C4CHO	9.99999	???	9.99999	???
CO23C4CO3	9.99999	???	9.99999	???
CO23C4CO3H	9.99999	???	9.99999	???
DB1O	9.99999	???	9.99999	???
DB1O2	9.99999	???	9.99999	???
DB1OOH	9.99999	???	9.99999	???
DB2O2	9.99999	???	9.99999	???
DB2OOH	9.99999	???	9.99999	???
HCOC5	9.99999	???	9.99999	???
ISOPAOH	9.99999	???	9.99999	???
ISOPBO2	9.99999	???	9.99999	???
ISOPBOH	9.99999	???	9.99999	???
ISOPBOOH	9.99999	???	9.99999	???
ISOPDO2	9.99999	???	9.99999	???
ISOPDOH	9.99999	???	9.99999	???
ISOPDOOH	9.99999	???	9.99999	???
MBO	9.99999	???	9.99999	???
MBOACO	9.99999	???	9.99999	???
MBOCOCO	9.99999	???	9.99999	???
ME3FURAN	9.99999	???	9.99999	???
ACCOMECHO	9.99999	???	9.99999	???
ACCOMECO3	9.99999	???	9.99999	???
ACCOMECO3H	9.99999	???	9.99999	???
C24O3CCO2H	9.99999	???	9.99999	???
C4CO2DBCO3	9.99999	???	9.99999	???
C4CO2DCO3H	9.99999	???	9.99999	???
C5134CO2OH	9.99999	???	9.99999	???
C54CO	9.99999	???	9.99999	???
C5CO14O2	9.99999	???	9.99999	???
C5CO14OH	9.99999	???	9.99999	???
C5CO14OOH	9.99999	???	9.99999	???
C5DIALCO	9.99999	???	9.99999	???
C5DIALO2	9.99999	???	9.99999	???

KPP name	K_a	Reference	K_{a2}	Reference
C5DIALOOH	9.99999	???	9.99999	???
C5DICARB	9.99999	???	9.99999	???
C5DICARBO2	9.99999	???	9.99999	???
C5DICAROOH	9.99999	???	9.99999	???
MC3ODBCO2H	9.99999	???	9.99999	???
MMALANHY	9.99999	???	9.99999	???
MMALANHYO2	9.99999	???	9.99999	???
MMALNHYOOH	9.99999	???	9.99999	???
TLFUO2	9.99999	???	9.99999	???
TLFUONE	9.99999	???	9.99999	???
TLFUOOH	9.99999	???	9.99999	???
C4MCONO3OH	9.99999	???	9.99999	???
C514NO3	9.99999	???	9.99999	???
C5PAN9	9.99999	???	9.99999	???
CHOC3COPAN	9.99999	???	9.99999	???
DB1NO3	9.99999	???	9.99999	???
ISOPBDNO3O2	9.99999	???	9.99999	???
ISOPBNO3	9.99999	???	9.99999	???
ISOPDNO3	9.99999	???	9.99999	???
NC4CHO	9.99999	???	9.99999	???
NC4OHCO3	9.99999	???	9.99999	???
NC4OHCO3H	9.99999	???	9.99999	???
NC4OHCPAN	9.99999	???	9.99999	???
NISOPO2	9.99999	???	9.99999	???
NISOPOOH	9.99999	???	9.99999	???
NMBOBCO	9.99999	???	9.99999	???
ACCOMEPAN	9.99999	???	9.99999	???
C4CO2DBPAN	9.99999	???	9.99999	???
C5COO2NO2	9.99999	???	9.99999	???
NC4MDCO2H	9.99999	???	9.99999	???
NTLFUO2	9.99999	???	9.99999	???
NTLFUOOH	9.99999	???	9.99999	???
LC578O2	9.99999	???	9.99999	???
LC578OOH	9.99999	???	9.99999	???
LDISOPACO	9.99999	???	9.99999	???
LDISOPACO2	9.99999	???	9.99999	???
LHC4ACCHO	9.99999	???	9.99999	???
LHC4ACCO2H	9.99999	???	9.99999	???
LHC4ACCO3	9.99999	???	9.99999	???
LHC4ACCO3H	9.99999	???	9.99999	???
LIEPOX	9.99999	???	9.99999	???
LISOPAB	9.99999	???	9.99999	???
LISOPACO	9.99999	???	9.99999	???
LISOPACO2	9.99999	???	9.99999	???
LISOPACOOH	9.99999	???	9.99999	???
LISOPCD	9.99999	???	9.99999	???
LISOPEFO	9.99999	???	9.99999	???
LISOPEFO2	9.99999	???	9.99999	???
LMBOABO2	9.99999	???	9.99999	???
LMBOABOOH	9.99999	???	9.99999	???
LME3FURANO2	9.99999	???	9.99999	???
LZCO3C23DBCOD	9.99999	???	9.99999	???
LZCO3HC23DBCOD	9.99999	???	9.99999	???
LZCODC23DBCOOH	9.99999	???	9.99999	???
LC5PAN1719	9.99999	???	9.99999	???
LISOPACNO3	9.99999	???	9.99999	???

KPP name	K_a	Reference	K_{a2}	Reference
LISOPACNO3O2	9.99999	???	9.99999	???
LMBOABNO3	9.99999	???	9.99999	???
LNISO3	9.99999	???	9.99999	???
LNISOOH	9.99999	???	9.99999	???
LNMBOABO2	9.99999	???	9.99999	???
LNMBOABOOH	9.99999	???	9.99999	???
LZCPANC23DBCOD	9.99999	???	9.99999	???
C614CO	9.99999	???	9.99999	???
C614O2	9.99999	???	9.99999	???
C614OOH	9.99999	???	9.99999	???
CO235C5CHO	9.99999	???	9.99999	???
CO235C6O2	9.99999	???	9.99999	???
CO235C6OOH	9.99999	???	9.99999	???
BENZENE	9.99999	???	9.99999	???
BZBIPERO2	9.99999	???	9.99999	???
BZBIPEROOH	9.99999	???	9.99999	???
BZEMUCCO	9.99999	???	9.99999	???
BZEMUCCO2H	9.99999	???	9.99999	???
BZEMUCCO3	9.99999	???	9.99999	???
BZEMUCCO3H	9.99999	???	9.99999	???
BZEMUCO2	9.99999	???	9.99999	???
BZEMUCOOH	9.99999	???	9.99999	???
BZEPOXMUC	9.99999	???	9.99999	???
BZOBIPEROH	9.99999	???	9.99999	???
C5CO2DBCO3	9.99999	???	9.99999	???
C5CO2DCO3H	9.99999	???	9.99999	???
C5CO2OHCO3	9.99999	???	9.99999	???
C5COOHCO3H	9.99999	???	9.99999	???
C6125CO	9.99999	???	9.99999	???
C615CO2O2	9.99999	???	9.99999	???
C615CO2OOH	9.99999	???	9.99999	???
C6CO4DB	9.99999	???	9.99999	???
C6H5O	9.99999	???	9.99999	???
C6H5O2	9.99999	???	9.99999	???
C6H5OOH	9.99999	???	9.99999	???
CATEC1O	9.99999	???	9.99999	???
CATEC1O2	9.99999	???	9.99999	???
CATEC1OOH	9.99999	???	9.99999	???
CATECHOL	9.99999	???	9.99999	???
CPDKETENE	9.99999	???	9.99999	???
PBZQCO	9.99999	???	9.99999	???
PBZQO2	9.99999	???	9.99999	???
PBZQONE	9.99999	???	9.99999	???
PBZQOOH	9.99999	???	9.99999	???
PHENO2	9.99999	???	9.99999	???
PHENOL	9.99999	???	9.99999	???
PHENOOH	9.99999	???	9.99999	???
C614NO3	9.99999	???	9.99999	???
BZBIPERNO3	9.99999	???	9.99999	???
BZEMUCNO3	9.99999	???	9.99999	???
BZEMUCPAN	9.99999	???	9.99999	???
C5CO2DBPAN	9.99999	???	9.99999	???
C5CO2OHPAN	9.99999	???	9.99999	???
DNPHEN	9.99999	???	9.99999	???
DNPHENO2	9.99999	???	9.99999	???
DNPHENOOH	9.99999	???	9.99999	???

KPP name	K_a	Reference	K_{a2}	Reference
HOC6H4NO2	9.99999	???	9.99999	???
NBZQO2	9.99999	???	9.99999	???
NBZQOOH	9.99999	???	9.99999	???
NCATECHOL	9.99999	???	9.99999	???
NCATECO2	9.99999	???	9.99999	???
NCATECOOH	9.99999	???	9.99999	???
NCPDKETENE	9.99999	???	9.99999	???
NDNPHENO2	9.99999	???	9.99999	???
NDNPHENOOH	9.99999	???	9.99999	???
NNCATECO2	9.99999	???	9.99999	???
NNCATECOOH	9.99999	???	9.99999	???
NPHEN1O	9.99999	???	9.99999	???
NPHEN1O2	9.99999	???	9.99999	???
NPHEN1OOH	9.99999	???	9.99999	???
NPHENO2	9.99999	???	9.99999	???
NPHENOOH	9.99999	???	9.99999	???
C235C6CO3H	9.99999	???	9.99999	???
C716O2	9.99999	???	9.99999	???
C716OOH	9.99999	???	9.99999	???
C721O2	9.99999	???	9.99999	???
C721OOH	9.99999	???	9.99999	???
C722O2	9.99999	???	9.99999	???
C722OOH	9.99999	???	9.99999	???
CO235C6CHO	9.99999	???	9.99999	???
CO235C6CO3	9.99999	???	9.99999	???
MCPDKETENE	9.99999	???	9.99999	???
ROO6R3O	9.99999	???	9.99999	???
ROO6R3O2	9.99999	???	9.99999	???
ROO6R5O2	9.99999	???	9.99999	???
BENZAL	9.99999	???	9.99999	???
C6CO2OHCO3	9.99999	???	9.99999	???
C6COOHCO3H	9.99999	???	9.99999	???
C6H5CH2O2	9.99999	???	9.99999	???
C6H5CH2OOH	9.99999	???	9.99999	???
C6H5CO3	9.99999	???	9.99999	???
C6H5CO3H	9.99999	???	9.99999	???
C7CO4DB	9.99999	???	9.99999	???
CRESO2	9.99999	???	9.99999	???
CRESOL	9.99999	???	9.99999	???
CRESOOH	9.99999	???	9.99999	???
MCATEC1O	9.99999	???	9.99999	???
MCATEC1O2	9.99999	???	9.99999	???
MCATEC1OOH	9.99999	???	9.99999	???
MCATECHOL	9.99999	???	9.99999	???
OXYL1O2	9.99999	???	9.99999	???
OXYL1OOH	9.99999	???	9.99999	???
PHCOOH	6.25E-5	Lide (2008)	9.99999	???
PTLQCO	9.99999	???	9.99999	???
PTLQO2	9.99999	???	9.99999	???
PTLQONE	9.99999	???	9.99999	???
PTLQOOH	9.99999	???	9.99999	???
TLBIPERO2	9.99999	???	9.99999	???
TLBIPEROOH	9.99999	???	9.99999	???
TLEMUCCO	9.99999	???	9.99999	???
TLEMUCCO2H	9.99999	???	9.99999	???
TLEMUCCO3	9.99999	???	9.99999	???

KPP name	K_a	Reference	K_{a2}	Reference
TLEMUCCO3H	9.99999	???	9.99999	???
TLEMUCO2	9.99999	???	9.99999	???
TLEMUCOOH	9.99999	???	9.99999	???
TLEPOXMUC	9.99999	???	9.99999	???
TLOBIPEROH	9.99999	???	9.99999	???
TOL1O	9.99999	???	9.99999	???
TOLUENE	9.99999	???	9.99999	???
C7PAN3	9.99999	???	9.99999	???
C6CO2OHPAN	9.99999	???	9.99999	???
C6H5CH2NO3	9.99999	???	9.99999	???
DNCRES	9.99999	???	9.99999	???
DNCRESO2	9.99999	???	9.99999	???
DNCRESOOH	9.99999	???	9.99999	???
MNCATECH	9.99999	???	9.99999	???
MNCATECO2	9.99999	???	9.99999	???
MNCATECOOH	9.99999	???	9.99999	???
MNCPDKETENE	9.99999	???	9.99999	???
MNNCATCOOH	9.99999	???	9.99999	???
MNNCATECO2	9.99999	???	9.99999	???
NCRES1O	9.99999	???	9.99999	???
NCRES1O2	9.99999	???	9.99999	???
NCRES1OOH	9.99999	???	9.99999	???
NCRESO2	9.99999	???	9.99999	???
NCRESOOH	9.99999	???	9.99999	???
NDNCRESO2	9.99999	???	9.99999	???
NDNCRESOOH	9.99999	???	9.99999	???
NPTLQO2	9.99999	???	9.99999	???
NPTLQOOH	9.99999	???	9.99999	???
PBZN	9.99999	???	9.99999	???
TLBIPERNO3	9.99999	???	9.99999	???
TLEMUCNO3	9.99999	???	9.99999	???
TLEMUCPAN	9.99999	???	9.99999	???
TOL1OHNO2	9.99999	???	9.99999	???
C721CHO	9.99999	???	9.99999	???
C721CO3	9.99999	???	9.99999	???
C721CO3H	9.99999	???	9.99999	???
C810O2	9.99999	???	9.99999	???
C810OOH	9.99999	???	9.99999	???
C811O2	9.99999	???	9.99999	???
C812O2	9.99999	???	9.99999	???
C812OOH	9.99999	???	9.99999	???
C813O2	9.99999	???	9.99999	???
C813OOH	9.99999	???	9.99999	???
C85O2	9.99999	???	9.99999	???
C85OOH	9.99999	???	9.99999	???
C86O2	9.99999	???	9.99999	???
C86OOH	9.99999	???	9.99999	???
C89O2	9.99999	???	9.99999	???
C89OOH	9.99999	???	9.99999	???
C8BC	9.99999	???	9.99999	???
C8BCCO	9.99999	???	9.99999	???
C8BCO2	9.99999	???	9.99999	???
C8BCOOH	9.99999	???	9.99999	???
NORPINIC	6.166E-05	see notes	2.291E-06	see notes
EBENZ	9.99999	???	9.99999	???
STYRENE	9.99999	???	9.99999	???

KPP name	K_a	Reference	K_{a2}	Reference
STYRENO2	9.99999	???	9.99999	???
STYRENOOH	9.99999	???	9.99999	???
C721PAN	9.99999	???	9.99999	???
C810NO3	9.99999	???	9.99999	???
C89NO3	9.99999	???	9.99999	???
C8BCNO3	9.99999	???	9.99999	???
NSTYRENO2	9.99999	???	9.99999	???
NSTYRENOOH	9.99999	???	9.99999	???
LXYL	9.99999	???	9.99999	???
C811CO3	9.99999	???	9.99999	???
C811CO3H	9.99999	???	9.99999	???
C85CO3	9.99999	???	9.99999	???
C85CO3H	9.99999	???	9.99999	???
C89CO2H	9.99999	???	9.99999	???
C89CO3	9.99999	???	9.99999	???
C89CO3H	9.99999	???	9.99999	???
C96O2	9.99999	???	9.99999	???
C96OOH	9.99999	???	9.99999	???
C97O2	9.99999	???	9.99999	???
C97OOH	9.99999	???	9.99999	???
C98O2	9.99999	???	9.99999	???
C98OOH	9.99999	???	9.99999	???
NOPINDCO	9.99999	???	9.99999	???
NOPINDO2	9.99999	???	9.99999	???
NOPINDOOH	9.99999	???	9.99999	???
NOPINONE	9.99999	???	9.99999	???
NOPINOO	9.99999	???	9.99999	???
NORPINAL	9.99999	???	9.99999	???
NORPINENOL	9.99999	???	9.99999	???
PINIC	6.166E-05	see notes	2.291E-06	see notes
C811PAN	9.99999	???	9.99999	???
C89PAN	9.99999	???	9.99999	???
C96NO3	9.99999	???	9.99999	???
C9PAN2	9.99999	???	9.99999	???
LTMB	9.99999	???	9.99999	???
APINAOO	9.99999	???	9.99999	???
APINBOO	9.99999	???	9.99999	???
APINENE	9.99999	???	9.99999	???
BPINAO2	9.99999	???	9.99999	???
BPINAOOH	9.99999	???	9.99999	???
BPINENE	9.99999	???	9.99999	???
C106O2	9.99999	???	9.99999	???
C106OOH	9.99999	???	9.99999	???
C109CO	9.99999	???	9.99999	???
C109O2	9.99999	???	9.99999	???
C109OOH	9.99999	???	9.99999	???
C96CO3	9.99999	???	9.99999	???
CAMPHENE	9.99999	???	9.99999	???
CARENE	9.99999	???	9.99999	???
MENTHEN6ONE	9.99999	???	9.99999	???
OH2MENTHEN6ONE	9.99999	???	9.99999	???
OHMENTHEN6ONEO2	9.99999	???	9.99999	???
PERPINONIC	9.99999	???	9.99999	???
PINAL	9.99999	???	9.99999	???
PINALO2	9.99999	???	9.99999	???
PINALOOH	9.99999	???	9.99999	???

KPP name	K_a	Reference	K_{a2}	Reference
PINENOL	9.99999	???	9.99999	???
PINONIC	9.99999	???	9.99999	???
RO6R1O2	9.99999	???	9.99999	???
RO6R3O2	9.99999	???	9.99999	???
ROO6R1O2	9.99999	???	9.99999	???
SABINENE	9.99999	???	9.99999	???
BPINANO3	9.99999	???	9.99999	???
C106NO3	9.99999	???	9.99999	???
C10PAN2	9.99999	???	9.99999	???
PINALNO3	9.99999	???	9.99999	???
RO6R1NO3	9.99999	???	9.99999	???
ROO6R1NO3	9.99999	???	9.99999	???
LAPINABNO3	9.99999	???	9.99999	???
LAPINABO2	9.99999	???	9.99999	???
LAPINABOOH	9.99999	???	9.99999	???
LNAPINABO2	9.99999	???	9.99999	???
LNAPINABOOH	9.99999	???	9.99999	???
LNBPINABO2	9.99999	???	9.99999	???
LNBPINABOOH	9.99999	???	9.99999	???
LHAROM	9.99999	???	9.99999	???
LFLUORINE	9.99999	???	9.99999	???
CHF3	9.99999	???	9.99999	???
CHF2CF3	9.99999	???	9.99999	???
CH3CF3	9.99999	???	9.99999	???
CH2F2	9.99999	???	9.99999	???
CH3CHF2	9.99999	???	9.99999	???
CCl4	9.99999	???	9.99999	???
CF2Cl2	9.99999	???	9.99999	???
CF2ClCF2Cl	9.99999	???	9.99999	???
CF2ClCFCl2	9.99999	???	9.99999	???
CF3CF2Cl	9.99999	???	9.99999	???
CFCl3	9.99999	???	9.99999	???
CH2Cl2	9.99999	???	9.99999	???
CH2FCF3	9.99999	???	9.99999	???
CH3CCl3	9.99999	???	9.99999	???
CH3CFCl2	9.99999	???	9.99999	???
CH3Cl	9.99999	???	9.99999	???
CHCl3	9.99999	???	9.99999	???
CHF2Cl	9.99999	???	9.99999	???
Cl	9.99999	???	9.99999	???
Cl2	9.99999	???	9.99999	???
Cl2O2	9.99999	???	9.99999	???
ClNO2	9.99999	???	9.99999	???
ClNO3	9.99999	???	9.99999	???
ClO	9.99999	???	9.99999	???
HCl	9.99999	???	9.99999	???
HOCl	9.99999	???	9.99999	???
OClO	9.99999	???	9.99999	???
LCHLORINE	9.99999	???	9.99999	???
Br	9.99999	???	9.99999	???
Br2	9.99999	???	9.99999	???
BrCl	9.99999	???	9.99999	???
BrNO2	9.99999	???	9.99999	???
BrNO3	9.99999	???	9.99999	???
BrO	9.99999	???	9.99999	???
CF2ClBr	9.99999	???	9.99999	???

KPP name	K_a	Reference	K_{a2}	Reference
CF3Br	9.99999	???	9.99999	???
CH2Br2	9.99999	???	9.99999	???
CH2ClBr	9.99999	???	9.99999	???
CH3Br	9.99999	???	9.99999	???
CHBr3	9.99999	???	9.99999	???
CHCl2Br	9.99999	???	9.99999	???
CHClBr2	9.99999	???	9.99999	???
HBr	9.99999	???	9.99999	???
HOBr	9.99999	???	9.99999	???
LBROMINE	9.99999	???	9.99999	???
C3H7I	9.99999	???	9.99999	???
CH2ClI	9.99999	???	9.99999	???
CH2I2	9.99999	???	9.99999	???
CH3I	9.99999	???	9.99999	???
HI	9.99999	???	9.99999	???
HIO3	9.99999	???	9.99999	???
HOI	9.99999	???	9.99999	???
I	9.99999	???	9.99999	???
I2	9.99999	???	9.99999	???
I2O2	9.99999	???	9.99999	???
IBr	9.99999	???	9.99999	???
ICl	9.99999	???	9.99999	???
INO2	9.99999	???	9.99999	???
INO3	9.99999	???	9.99999	???
IO	9.99999	???	9.99999	???
IPART	9.99999	???	9.99999	???
OIO	9.99999	???	9.99999	???
CH3SO2	9.99999	???	9.99999	???
CH3SO3	9.99999	???	9.99999	???
CH3SO3H	9.99999	???	9.99999	???
DMS	9.99999	???	9.99999	???
DMSO	9.99999	???	9.99999	???
H2SO4	1E3	see notes	1.023E-2	see notes
OCS	9.99999	???	9.99999	???
S	9.99999	???	9.99999	???
SF6	9.99999	???	9.99999	???
SH	9.99999	???	9.99999	???
SO	9.99999	???	9.99999	???
SO2	1.23E-2	Pandis and Seinfeld (1989)	6.61E-8	Pandis and Seinfeld (1989)
SO3	9.99999	???	9.99999	???
LSULFUR	9.99999	???	9.99999	???
Hg	9.99999	???	9.99999	???
HgO	9.99999	???	9.99999	???
HgCl	9.99999	???	9.99999	???
HgCl2	9.99999	???	9.99999	???
HgBr	9.99999	???	9.99999	???
HgBr2	9.99999	???	9.99999	???
ClHgBr	9.99999	???	9.99999	???
BrHgOBr	9.99999	???	9.99999	???
ClHgOBr	9.99999	???	9.99999	???
RGM	9.99999	???	9.99999	???
LTERP	9.99999	???	9.99999	???
LALK4	9.99999	???	9.99999	???
LALK5	9.99999	???	9.99999	???
LARO1	9.99999	???	9.99999	???
LARO2	9.99999	???	9.99999	???

KPP name	K_a	Reference	K_{a2}	Reference
LOLE1	9.99999	???	9.99999	???
LOLE2	9.99999	???	9.99999	???
LfPOG02	9.99999	???	9.99999	???
LfPOG03	9.99999	???	9.99999	???
LfPOG04	9.99999	???	9.99999	???
LfPOG05	9.99999	???	9.99999	???
LbbPOG02	9.99999	???	9.99999	???
LbbPOG03	9.99999	???	9.99999	???
LbbPOG04	9.99999	???	9.99999	???
LfSOGsv01	9.99999	???	9.99999	???
LfSOGsv02	9.99999	???	9.99999	???
LbbSOGsv01	9.99999	???	9.99999	???
LbbSOGsv02	9.99999	???	9.99999	???
LfSOGiv01	9.99999	???	9.99999	???
LfSOGiv02	9.99999	???	9.99999	???
LfSOGiv03	9.99999	???	9.99999	???
LfSOGiv04	9.99999	???	9.99999	???
LbbSOGiv01	9.99999	???	9.99999	???
LbbSOGiv02	9.99999	???	9.99999	???
LbbSOGiv03	9.99999	???	9.99999	???
LbSOGv01	9.99999	???	9.99999	???
LbSOGv02	9.99999	???	9.99999	???
LbSOGv03	9.99999	???	9.99999	???
LbSOGv04	9.99999	???	9.99999	???
LbOSOGv01	9.99999	???	9.99999	???
LbOSOGv02	9.99999	???	9.99999	???
LbOSOGv03	9.99999	???	9.99999	???
LaSOGv01	9.99999	???	9.99999	???
LaSOGv02	9.99999	???	9.99999	???
LaSOGv03	9.99999	???	9.99999	???
LaSOGv04	9.99999	???	9.99999	???
LaOSOGv01	9.99999	???	9.99999	???
LaOSOGv02	9.99999	???	9.99999	???
LaOSOGv03	9.99999	???	9.99999	???
ISO2	9.99999	???	9.99999	???
ISON	9.99999	???	9.99999	???
ISOOH	9.99999	???	9.99999	???
LHOC3H6O2	9.99999	???	9.99999	???
LHOC3H6OOH	9.99999	???	9.99999	???
MVKO2	9.99999	???	9.99999	???
MVKOOH	9.99999	???	9.99999	???
NACA	9.99999	???	9.99999	???
ONE	9.99999	???	9.99999	???
O	9.99999	???	9.99999	???
C	9.99999	???	9.99999	???
OXL	9.99999	???	9.99999	???
O2m	9.99999	???	9.99999	???
OHm	9.99999	???	9.99999	???
Hp	9.99999	???	9.99999	???
NH4p	9.99999	???	9.99999	???
NO2m	9.99999	???	9.99999	???
NO3m	9.99999	???	9.99999	???
NO4m	9.99999	???	9.99999	???
CO3m	9.99999	???	9.99999	???
CO3mm	9.99999	???	9.99999	???
HCO3m	9.99999	???	9.99999	???

KPP name	K_a	Reference	K_{a2}	Reference
HCOOm	9.99999	???	9.99999	???
CH3COOm	9.99999	???	9.99999	???
HOCH2CO2m	9.99999	???	9.99999	???
OXLm	9.99999	???	9.99999	???
OXLmm	9.99999	???	9.99999	???
CH3COCO2Hm	9.99999	???	9.99999	???
Clm	9.99999	???	9.99999	???
Cl2m	9.99999	???	9.99999	???
ClOm	9.99999	???	9.99999	???
ClOHm	9.99999	???	9.99999	???
Brm	9.99999	???	9.99999	???
Br2m	9.99999	???	9.99999	???
BrOm	9.99999	???	9.99999	???
BrOHm	9.99999	???	9.99999	???
BrCl2m	9.99999	???	9.99999	???
Br2Clm	9.99999	???	9.99999	???
Im	9.99999	???	9.99999	???
IO2m	9.99999	???	9.99999	???
IO3m	9.99999	???	9.99999	???
ICl2m	9.99999	???	9.99999	???
IBr2m	9.99999	???	9.99999	???
IClBrm	9.99999	???	9.99999	???
SO3m	9.99999	???	9.99999	???
SO3mm	9.99999	???	9.99999	???
SO4m	9.99999	???	9.99999	???
SO4mm	9.99999	???	9.99999	???
SO5m	9.99999	???	9.99999	???
HSO3m	9.99999	???	9.99999	???
HSO4m	9.99999	???	9.99999	???
HSO5m	9.99999	???	9.99999	???
CH3SO3m	9.99999	???	9.99999	???
CH2OHSO3m	9.99999	???	9.99999	???
Nap	9.99999	???	9.99999	???
Kp	9.99999	???	9.99999	???
Mgpp	9.99999	???	9.99999	???
Capp	9.99999	???	9.99999	???
Fepp	9.99999	???	9.99999	???
Feppp	9.99999	???	9.99999	???

KPP name	pss	Reference	dryreac	Reference
O1D	-9.99999	???	-9.99999	???
O3P	-9.99999	???	-9.99999	???
O2	0.0	???	0.0	???
O3	0.01	???	1.0	???
H	-9.99999	???	-9.99999	???
H2	-9.99999	???	-9.99999	???
OH	25.	???	0.0	???
HO2	1.37E6	???	1.0	???
H2O	0.0	???	0.0	???
H2O2	7.45E4	???	1.0	???
H2OH2O	-9.99999	???	-9.99999	???
N	-9.99999	???	-9.99999	???
N2D	-9.99999	???	-9.99999	???
N2	-9.99999	???	-9.99999	???
NH3	1.02E4	???	0.0	???
N2O	-9.99999	???	-9.99999	???
NO	2.E-3	???	1.0	???
NO2	1.0E-2	???	1.0	???
NO3	1.8	???	1.0	???
N2O5	BIG_DP	???	1.0	???
HONO	5.05E4	???	0.1	???
HOONO	-9.99999	???	-9.99999	???
HNO3	BIG_DP	???	1.0	???
HNO4	1.26E6	???	1.0	???
NH2	-9.99999	???	0.0	???
HNO	-9.99999	???	0.0	???
NHOH	-9.99999	???	0.0	???
NH2O	-9.99999	???	0.0	???
NH2OH	-9.99999	???	0.0	???
LNITROGEN	-9.99999	???	-9.99999	???
CH2OO	-9.99999	???	-9.99999	???
CH2OOA	-9.99999	???	-9.99999	???
CH3	-9.99999	???	-9.99999	???
CH3O	-9.99999	???	-9.99999	???
CH3O2	6.	???	1.0	???
CH3OH	2.2E2	???	0.1	???
CH3OOH	3.E2	???	0.1	???
CH4	-9.99999	???	-9.99999	???
CO	-9.99999	???	-9.99999	???
CO2	0.0	???	0.0	???
HCHO	3.2E3	???	0.1	???
HCOOH	6.7E6	???	0.0	???
HOCH2O2	4.6E4	???	1.0	???
HOCH2OH	1.015E4	???	0.1	???
HOCH2OOH	1.7E6	???	0.1	???
CH3NO3	2.	???	0.1	???
CH3O2NO2	2.	???	0.1	???
CH3ONO	2.	???	0.1	???
CN	-9.99999	???	-9.99999	???
HCN	7.6	???	0.1	???
HOCH2O2NO2	2.	???	0.1	???
NCO	-9.99999	???	-9.99999	???
LCARBON	-9.99999	???	-9.99999	???
C2H2	-9.99999	???	-9.99999	???
C2H4	-9.99999	???	-9.99999	???

KPP name	pss	Reference	dryreac	Reference
C2H5O2	0.0	???	0.0	???
C2H5OH	2.0E2	???	0.1	???
C2H5OOH	3.4E2	???	0.1	???
C2H6	-9.99999	???	-9.99999	???
CH2CHOH	2.0E2	???	0.1	???
CH2CO	1.0E6	???	0.1	???
CH3CHO	1.3E1	???	0.1	???
CH3CHOHO2	-9.99999	???	-9.99999	???
CH3CHOHOH	1.0E6	???	0.1	???
CH3CHOHOOH	1.0E6	???	0.1	???
CH3CO	-9.99999	???	-9.99999	???
CH3CO2H	7.4E5	???	0.1	???
CH3CO3	-9.99999	???	-9.99999	???
CH3CO3H	8.4E2	???	0.1	???
CHOCHOHOH	1.0E6	???	0.1	???
CHOHOHCHOHOH	1.0E6	???	0.1	???
CHOHOHCOOH	1.0E6	???	0.1	???
ETHGLY	4.0E6	???	0.1	???
GLYOX	4.2E5	???	0.1	???
HCOCH2O2	-9.99999	???	-9.99999	???
HCOCO	-9.99999	???	-9.99999	???
HCOCO2H	6.6E7	???	0.1	???
HCOCO3	-9.99999	???	-9.99999	???
HCOCO3H	2.7E6	???	0.1	???
HOCH2CH2O	-9.99999	???	-9.99999	???
HOCH2CH2O2	-9.99999	???	-9.99999	???
HOCH2CHO	4.10E4	???	0.1	???
HOCH2CHOHOH	1.0E6	???	0.1	???
HOCH2CO	-9.99999	???	-9.99999	???
HOCH2CO2H	4.2E7	???	0.1	???
HOCH2CO3	-9.99999	???	-9.99999	???
HOCH2CO3H	4.2E5	???	0.1	???
HOCHCHO	-9.99999	???	-9.99999	???
HOOCCOOH	5.0E8	???	0.1	???
HOOCH2CHO	1.0E6	???	0.1	???
HOOCH2CHOHOH	1.0E6	???	0.1	???
HOOCH2CO2H	4.2E7	???	0.1	???
HOOCH2CO3	-9.99999	???	-9.99999	???
HOOCH2CO3H	1.0E6	???	0.1	???
HYETHO2H	4.0E6	???	0.1	???
C2H5NO3	1.6	???	0.1	???
C2H5O2NO2	1.6	???	0.1	???
CH3CN	5.3	???	0.1	???
ETHOHNO3	3.9E4	???	0.1	???
NCCH2O2	-9.99999	???	-9.99999	???
NO3CH2CHO	1.6	???	0.1	???
NO3CH2CO3	-9.99999	???	-9.99999	???
NO3CH2PAN	2.8	???	0.1	???
PAN	2.8	???	0.1	???
PHAN	4.E4	???	0.1	???
ACETOL	4.7E2	???	-9.99999	???
ALCOCH2OOH	1.0E6	???	0.1	???
C2H5CHO	1.3E1	???	0.1	???
C2H5CO3	-9.99999	???	-9.99999	???
C33CO	9.0E3	???	0.1	???
C3H6	-9.99999	???	-9.99999	???

KPP name	pss	Reference	dryreac	Reference
C3H8	-9.99999	???	-9.99999	???
CH3CHCO	1.0E6	???	0.1	???
CH3COCH2O2	-9.99999	???	-9.99999	???
CH3COCH3	3.E1	???	0.1	???
CH3COCHOHOH	9.1E5	???	0.1	???
CH3COCO2H	4.3E8	???	0.1	???
CH3COCO3	-9.99999	???	-9.99999	???
CH3COCO3H	1.0E6	???	0.1	???
CHOCOCH2O2	-9.99999	???	-9.99999	???
HCOCH2CHO	1.0E6	???	0.1	???
HCOCH2CO2H	6.6E7	???	0.1	???
HCOCH2CO3	-9.99999	???	-9.99999	???
HCOCH2CO3H	1.0E6	???	0.1	???
HCOCOCH2OOH	1.0E6	???	0.1	???
HOC2H4CO2H	4.2E7	???	0.1	???
HOC2H4CO3	-9.99999	???	-9.99999	???
HOC2H4CO3H	1.0E6	???	0.1	???
HOCH2COCH2O2	-9.99999	???	-9.99999	???
HOCH2COCH2OOH	1.0E6	???	0.1	???
HOCH2COCHO	4.1E5	???	0.1	???
HYPERACET	4.7E2	???	0.1	???
HYPROPO2	-9.99999	???	-9.99999	???
HYPROPO2H	9.2E5	???	0.1	???
IC3H7O2	-9.99999	???	-9.99999	???
IC3H7OOH	1.3E2	???	0.1	???
IPROPOL	1.3E2	???	0.1	???
MGLYOX	3.7E3	???	0.1	???
NC3H7O2	-9.99999	???	-9.99999	???
NC3H7OOH	1.3E2	???	0.1	???
NPROPOL	1.3E2	???	0.1	???
PERPROACID	1.5E3	???	0.1	???
PROPACID	3.E5	???	0.1	???
PROPENOL	1.3E1	???	0.1	???
C32OH13CO	9.0E3	???	0.1	???
C3DIALO2	-9.99999	???	-9.99999	???
C3DIALOOH	9.0E3	???	0.1	???
HCOCOHCO3	-9.99999	???	-9.99999	???
HCOCOHCO3H	2.0E6	???	0.1	???
METACETHO	3.7E3	???	0.1	???
C3PAN1	1.0E6	???	0.1	???
C3PAN2	1.0E6	???	0.1	???
CH3COCH2O2NO2	1.0E3	???	0.1	???
IC3H7NO3	0.83E0	???	0.1	???
NC3H7NO3	0.83E0	???	0.1	???
NOA	1.0E3	???	0.1	???
PPN	2.8	???	0.1	???
PR2O2HNO3	1.1E4	???	0.1	???
PRONO3BO2	-9.99999	???	-9.99999	???
PROPOLNO3	4.5E3	???	0.1	???
HCOCOHPAN	4.0E4	???	0.1	???
BIACET	7.4E1	???	0.1	???
BIACETO2	1.0E6	???	0.1	???
BIACETOH	1.3E3	???	0.1	???
BIACETOOH	1.0E6	???	0.1	???
BUT1ENE	-9.99999	???	-9.99999	???
BUT2OLO	1.0E3	???	0.1	???

KPP name	pss	Reference	dryreac	Reference
BUT2OLO2	-9.99999	???	-9.99999	???
BUT2OLOOH	1.0E6	???	0.1	???
BUTENOL	8.9	???	0.1	???
C312COCO3	-9.99999	???	-9.99999	???
C312COCO3H	1.0E6	???	0.1	???
C3H7CHO	8.9	???	0.1	???
C413COOOH	1.0E6	???	0.1	???
C44O2	-9.99999	???	-9.99999	???
C44OOH	1.0E6	???	0.1	???
C4CODIAL	1.0E6	???	0.1	???
CBUT2ENE	-9.99999	???	-9.99999	???
CH3COCHCO	1.0E6	???	0.1	???
CH3COCHO2CHO	-9.99999	???	-9.99999	???
CH3COCOCO2H	4.3E8	???	0.1	???
CH3COOHCHCHO	1.0E6	???	0.1	???
CHOC3COO2	1.0E6	???	0.1	???
CO23C3CHO	3.6E5	???	0.1	???
CO2C3CHO	1.7E3	???	0.1	???
CO2H3CHO	4.1E5	???	0.1	???
CO2H3CO2H	1.0E6	???	0.1	???
CO2H3CO3	-9.99999	???	-9.99999	???
CO2H3CO3H	1.E6	???	0.1	???
EZCH3CO2CHCHO	-9.99999	???	-9.99999	???
EZCHOCCH3CHO2	-9.99999	???	-9.99999	???
HCOCCH3CHOOH	1.0E6	???	0.1	???
HCOCCH3CO	1.0E6	???	0.1	???
HCOCO2CH3CHO	-9.99999	???	-9.99999	???
HMAC	1.7E3	???	0.1	???
HO12CO3C4	5.E7	???	0.1	???
HVMK	1.7E3	???	0.1	???
IBUTALOH	1.0E6	???	0.1	???
IBUTDIAL	1.7E3	???	0.1	???
IBUTOLBO2	-9.99999	???	-9.99999	???
IBUTOLBOOH	1.0E6	???	0.1	???
IC4H10	-9.99999	???	-9.99999	???
IC4H9O2	-9.99999	???	-9.99999	???
IC4H9OOH	1.1E2	???	0.1	???
IPRCHO	5.9E-1	???	0.1	???
IPRCO3	-9.99999	???	-9.99999	???
IPRHOCO2H	4.2E7	???	0.1	???
IPRHOCO3	-9.99999	???	-9.99999	???
IPRHOCO3H	1.0E6	???	0.1	???
MACO2	-9.99999	???	-9.99999	???
MACO2H	5.8E5	???	0.1	???
MACO3	-9.99999	???	-9.99999	???
MACO3H	3.4E3	???	0.1	???
MACR	5.0E1	???	0.1	???
MACRO	-9.99999	???	-9.99999	???
MACRO2	-9.99999	???	-9.99999	???
MACROH	5.E7	???	0.1	???
MACROOH	5.E7	???	0.1	???
MBOOO	-9.99999	???	-9.99999	???
MEK	2.E1	???	0.1	???
MEPROPENE	-9.99999	???	-9.99999	???
MPROPENOL	5.9E-1	???	0.1	???
MVK	2.3E1	???	0.1	???

KPP name	pss	Reference	dryreac	Reference
NC4H10	-9.99999	???	-9.99999	???
PERIBUACID	9.7E2	???	0.1	???
TBUT2ENE	-9.99999	???	-9.99999	???
TC4H9O2	-9.99999	???	-9.99999	???
TC4H9OOH	7.0E1	???	0.1	???
BZFUCO	9.0E3	???	0.1	???
BZFUO2	-9.99999	???	-9.99999	???
BZFUONE	36.	???	0.1	???
BZFUOOH	2.0E6	???	0.1	???
CO14O3CHO	3.6E5	???	0.1	???
CO14O3CO2H	6.6E7	???	0.1	???
CO2C4DIAL	2.0E6	???	0.1	???
EPXC4DIAL	3.6E5	???	0.1	???
EPXDLCO2H	6.6E7	???	0.1	???
EPXDLCO3	-9.99999	???	-9.99999	???
EPXDLCO3H	9.0E3	???	0.1	???
HOCOC4DIAL	3.1E5	???	0.1	???
MALANHY	36.	???	0.1	???
MALANHYO2	-9.99999	???	-9.99999	???
MALANHYOOH	2.0E6	???	0.1	???
MALDALCO2H	6.6E7	???	0.1	???
MALDALCO3H	9.0E3	???	0.1	???
MALDIAL	3.6E5	???	0.1	???
MALDIALCO3	-9.99999	???	-9.99999	???
MALDIALO2	-9.99999	???	-9.99999	???
MALDIALOOH	2.0E6	???	0.1	???
MALNHYOHCO	2.0E6	???	0.1	???
MECOACEOOH	3.1E5	???	0.1	???
MECOACETO2	-9.99999	???	-9.99999	???
BUT2OLNO3	8.8E1	???	0.1	???
C312COPAN	1.0E6	???	0.1	???
C4PAN5	1.0E6	???	0.1	???
IBUTOLBNO3	8.8E1	???	0.1	???
IC4H9NO3	6.4E-3	???	0.1	???
MACRNO3	1.0E6	???	0.1	???
MPAN	3.6	???	0.1	???
MVKNO3	1.0E6	???	0.1	???
PIPN	2.9	???	0.1	???
TC4H9NO3	6.4E-3	???	0.1	???
EPXDLPAN	2.8	???	0.1	???
MALDIALPAN	2.8	???	0.1	???
NBZFUO2	-9.99999	???	-9.99999	???
NBZFUONE	20.	???	0.1	???
NBZFUOOH	2.4E4	???	0.1	???
NC4DCO2H	6.6E7	???	0.1	???
LBUT1ENO2	-9.99999	???	-9.99999	???
LBUT1ENOOH	1.0E6	???	0.1	???
LC4H9O2	-9.99999	???	-9.99999	???
LC4H9OOH	1.1E2	???	0.1	???
LHMVKABO2	-9.99999	???	-9.99999	???
LHMVKABOOH	5.E6	???	-9.99999	???
LMEKO2	-9.99999	???	-9.99999	???
LMEKOOH	1.E3	???	0.1	???
LBUT1ENNO3	8.8E1	???	0.1	???
LC4H9NO3	6.4E-3	???	0.1	???
LMEKNO3	0.86E0	???	0.1	???

KPP name	pss	Reference	dryreac	Reference
C1ODC2O2C4OD	-9.99999	???	-9.99999	???
C1ODC2O2C4OOH	1.0E6	???	0.1	???
C1ODC2OOHC4OD	1.0E6	???	0.1	???
C1ODC3O2C4OOH	1.0E6	???	0.1	???
C1OOHC2O2C4OD	-9.99999	???	-9.99999	???
C1OOHC2OOHC4OD	1.0E6	???	0.1	???
C1OOHC3O2C4OD	-9.99999	???	-9.99999	???
C4MDIAL	1.0E6	???	0.1	???
C511O2	-9.99999	???	-9.99999	???
C511OOH	1.0E6	???	0.1	???
C512O2	-9.99999	???	-9.99999	???
C512OOH	1.0E6	???	0.1	???
C513CO	1.0E6	???	0.1	???
C513O2	-9.99999	???	-9.99999	???
C513OOH	1.0E6	???	0.1	???
C514O2	-9.99999	???	-9.99999	???
C514OOH	1.0E6	???	0.1	???
C59O2	-9.99999	???	-9.99999	???
C59OOH	3.E11	???	0.1	???
C5H8	0.01	???	0.0	???
CHOC3COCO3	-9.99999	???	-9.99999	???
CHOC3COOOH	1.0E6	???	0.1	???
CO13C4CHO	1.0E6	???	0.1	???
CO23C4CHO	1.0E6	???	0.1	???
CO23C4CO3	-9.99999	???	-9.99999	???
CO23C4CO3H	1.0E6	???	0.1	???
DB1O	-9.99999	???	-9.99999	???
DB1O2	-9.99999	???	-9.99999	???
DB1OOH	1.0E6	???	0.1	???
DB2O2	-9.99999	???	-9.99999	???
DB2OOH	1.0E6	???	0.1	???
HCOC5	4.7E2	???	0.1	???
ISOPAOH	4.E6	???	0.1	???
ISOPBO2	-9.99999	???	-9.99999	???
ISOPBOH	3.E6	???	0.1	???
ISOPBOOH	3.E6	???	0.1	???
ISOPDO2	-9.99999	???	-9.99999	???
ISOPDOH	3.E6	???	0.1	???
ISOPDOOH	3.E6	???	0.1	???
MBO	1.0E6	???	0.1	???
MBOACO	1.0E6	???	0.1	???
MBOCOCO	1.0E6	???	0.1	???
ME3FURAN	1.0E6	???	0.1	???
ACCOMECHO	3.7E3	???	0.1	???
ACCOMECO3	-9.99999	???	0.1	???
ACCOMECO3H	3.1E5	???	0.1	???
C24O3CCO2H	7.4E5	???	0.1	???
C4CO2DBCO3	-9.99999	???	0.1	???
C4CO2DCO3H	2.0E6	???	0.1	???
C5134CO2OH	3.1E5	???	0.1	???
C54CO	3.6E5	???	0.1	???
C5CO14O2	-9.99999	???	-9.99999	???
C5CO14OH	2.2E3	???	0.1	???
C5CO14OOH	3.1E5	???	0.1	???
C5DIALCO	9.0E3	???	0.1	???
C5DIALO2	-9.99999	???	-9.99999	???

KPP name	pss	Reference	dryreac	Reference
C5DIALOOH	3.6E5	???	0.1	???
C5DICARB	3.7E3	???	0.1	???
C5DICARBO2	-9.99999	???	-9.99999	???
C5DICAROOH	2.0E6	???	0.1	???
MC3ODBCO2H	6.6E7	???	0.1	???
MMALANHY	20.	???	0.1	???
MMALANHYO2	-9.99999	???	0.1	???
MMALNHYOOH	2.0E6	???	0.1	???
TLFUO2	-9.99999	???	-9.99999	???
TLFUONE	3.6E1	???	0.1	???
TLFUOOH	2.0E6	???	0.1	???
C4MCONO3OH	1.0E6	???	0.1	???
C514NO3	1.0E6	???	0.1	???
C5PAN9	1.0E6	???	0.1	???
CHOC3COPAN	1.0E6	???	0.1	???
DB1NO3	1.0E4	???	0.1	???
ISOPBDNO3O2	-9.99999	???	-9.99999	???
ISOPBNO3	8.9E3	???	0.1	???
ISOPDNO3	8.9E3	???	0.1	???
NC4CHO	9.6	???	0.1	???
NC4OHCO3	-9.99999	???	-9.99999	???
NC4OHCO3H	1.0E6	???	0.1	???
NC4OHCPAN	1.0E6	???	0.1	???
NISOPO2	-9.99999	???	-9.99999	???
NISOPOOH	2.E4	???	0.1	???
NMBOBCO	1.0E6	???	0.1	???
ACCOMEPAN	2.8	???	0.1	???
C4CO2DBPAN	4.0E4	???	0.1	???
C5COO2NO2	2.8	???	0.1	???
NC4MDCO2H	6.6E7	???	0.1	???
NTLFUO2	-9.99999	???	-9.99999	???
NTLFUOOH	9.0E3	???	0.1	???
LC578O2	-9.99999	???	-9.99999	???
LC578OOH	3.E11	???	0.1	???
LDISOPACO	-9.99999	???	-9.99999	???
LDISOPACO2	-9.99999	???	-9.99999	???
LHC4ACCHO	4.E5	???	0.1	???
LHC4ACCO2H	6.6E7	???	0.1	???
LHC4ACCO3	-9.99999	???	-9.99999	???
LHC4ACCO3H	2.2E5	???	0.1	???
LIEPOX	1.0E6	???	0.1	???
LISOPAB	-9.99999	???	-9.99999	???
LISOPACO	-9.99999	???	-9.99999	???
LISOPACO2	-9.99999	???	-9.99999	???
LISOPACOOH	4.E6	???	0.1	???
LISOPCD	-9.99999	???	-9.99999	???
LISOPEFO	-9.99999	???	-9.99999	???
LISOPEFO2	-9.99999	???	-9.99999	???
LMBOABO2	-9.99999	???	-9.99999	???
LMBOABOOH	1.0E6	???	0.1	???
LME3FURANO2	-9.99999	???	-9.99999	???
LZCO3C23DBCOD	-9.99999	???	-9.99999	???
LZCO3HC23DBCOD	1.0E6	???	0.1	???
LZCODC23DBCOOH	1.0E6	???	0.1	???
LC5PAN1719	6.E4	???	0.1	???
LISOPACNO3	2.E4	???	0.1	???

KPP name	pss	Reference	dryreac	Reference
LISOPACNO3O2	-9.99999	???	-9.99999	???
LMBOABNO3	1.0E6	???	0.1	???
LNISO3	-9.99999	???	-9.99999	???
LNISOOH	6.E3	???	0.1	???
LNMBOABO2	-9.99999	???	-9.99999	???
LNMBOABOOH	1.0E6	???	0.1	???
LZCPANC23DBCOD	1.E1	???	0.1	???
C614CO	1.0E6	???	0.1	???
C614O2	-9.99999	???	-9.99999	???
C614OOH	1.0E6	???	0.1	???
CO235C5CHO	1.0E6	???	0.1	???
CO235C6O2	-9.99999	???	-9.99999	???
CO235C6OOH	1.0E6	???	0.1	???
BENZENE	1.8E-1	???	0.1	???
BZBIPERO2	-9.99999	???	-9.99999	???
BZBIPEROOH	2.0E6	???	0.1	???
BZEMUCCO	9.0E3	???	0.1	???
BZEMUCCO2H	6.6E7	???	0.1	???
BZEMUCCO3	-9.99999	???	-9.99999	???
BZEMUCCO3H	9.0E3	???	0.1	???
BZEMUCO2	-9.99999	???	-9.99999	???
BZEMUCOOH	2.0E6	???	0.1	???
BZEPOXMUC	3.6E5	???	0.1	???
BZOBIPEROH	9.0E3	???	0.1	???
C5CO2DBCO3	-9.99999	???	0.1	???
C5CO2DCO3H	2.0E6	???	0.1	???
C5CO2OHCO3	-9.99999	???	0.1	???
C5COOHCO3H	2.0E6	???	0.1	???
C6125CO	3.7E3	???	0.1	???
C615CO2O2	-9.99999	???	-9.99999	???
C615CO2OOH	3.1E5	???	0.1	???
C6CO4DB	2.0E6	???	0.1	???
C6H5O	2.9E3	???	0.1	???
C6H5O2	-9.99999	???	-9.99999	???
C6H5OOH	2.9E3	???	0.1	???
CATEC1O	4.6E3	???	0.1	???
CATEC1O2	-9.99999	???	-9.99999	???
CATEC1OOH	4.6E3	???	0.1	???
CATECHOL	4.6E3	???	0.1	???
CPDKETENE	-9.99999	???	-9.99999	???
PBZQCO	4.6E3	???	0.1	???
PBZQO2	-9.99999	???	-9.99999	???
PBZQONE	20.	???	0.1	???
PBZQOOH	2.0E6	???	0.1	???
PHENO2	-9.99999	???	-9.99999	???
PHENOL	2.9E3	???	0.1	???
PHENOOH	2.0E6	???	0.1	???
C614NO3	1.0E6	???	0.1	???
BZBIPERNO3	2.9E3	???	0.1	???
BZEMUCNO3	4.0E4	???	0.1	???
BZEMUCPAN	2.8	???	0.1	???
C5CO2DBPAN	3.7E3	???	0.1	???
C5CO2OHPAN	4.0E4	???	0.1	???
DNPHEN	2.3E3	???	0.1	???
DNPHENO2	-9.99999	???	-9.99999	???
DNPHENOOH	2.3E3	???	0.1	???

KPP name	pss	Reference	dryreac	Reference
HOC6H4NO2	70.	???	0.1	???
NBZQO2	-9.99999	???	-9.99999	???
NBZQOOH	2.4E4	???	0.1	???
NCATECHOL	4.6E3	???	0.1	???
NCATECO2	-9.99999	???	-9.99999	???
NCATECOOH	2.0E6	???	0.1	???
NCPDKETENE	-9.99999	???	-9.99999	???
NDNPHENO2	-9.99999	???	-9.99999	???
NDNPHENOOH	2.3E3	???	0.1	???
NNCATECO2	-9.99999	???	-9.99999	???
NNCATECOOH	2.3E3	???	0.1	???
NPHEN1O	70.	???	0.1	???
NPHEN1O2	-9.99999	???	-9.99999	???
NPHEN1OOH	70.	???	0.1	???
NPHENO2	-9.99999	???	-9.99999	???
NPHENOOH	4.6E3	???	0.1	???
C235C6CO3H	1.0E6	???	0.1	???
C716O2	-9.99999	???	-9.99999	???
C716OOH	1.0E6	???	0.1	???
C721O2	-9.99999	???	-9.99999	???
C721OOH	1.0E6	???	0.1	???
C722O2	-9.99999	???	-9.99999	???
C722OOH	1.0E6	???	0.1	???
CO235C6CHO	1.0E6	???	0.1	???
CO235C6CO3	-9.99999	???	-9.99999	???
MCPDKETENE	-9.99999	???	-9.99999	???
ROO6R3O	-9.99999	???	-9.99999	???
ROO6R3O2	-9.99999	???	-9.99999	???
ROO6R5O2	-9.99999	???	-9.99999	???
BENZAL	36.	???	0.1	???
C6CO2OHCO3	-9.99999	???	-9.99999	???
C6COOHCO3H	2.0E6	???	0.1	???
C6H5CH2O2	-9.99999	???	-9.99999	???
C6H5CH2OOH	2.9E3	???	0.1	???
C6H5CO3	-9.99999	???	-9.99999	???
C6H5CO3H	2.4E4	???	0.1	???
C7CO4DB	3.7E3	???	0.1	???
CRESO2	-9.99999	???	-9.99999	???
CRESOL	2.9E3	???	0.1	???
CRESOOH	2.0E6	???	0.1	???
MCATEC1O	2.0E6	???	0.1	???
MCATEC1O2	-9.99999	???	-9.99999	???
MCATEC1OOH	4.6E3	???	0.1	???
MCATECHOL	4.6E3	???	0.1	???
OXYL1O2	-9.99999	???	-9.99999	???
OXYL1OOH	2.9E3	???	0.1	???
PHCOOH	1.5E7	???	0.1	???
PTLQCO	2.4E4	???	0.1	???
PTLQO2	-9.99999	???	-9.99999	???
PTLQONE	41.	???	0.1	???
PTLQOOH	2.0E6	???	0.1	???
TLBIPERO2	-9.99999	???	-9.99999	???
TLBIPEROOH	2.0E6	???	0.1	???
TLEMUCCO	3.1E5	???	0.1	???
TLEMUCCO2H	7.4E5	???	0.1	???
TLEMUCCO3	-9.99999	???	-9.99999	???

KPP name	pss	Reference	dryreac	Reference
TLEMUCCO3H	2.2E3	???	0.1	???
TLEMUCO2	-9.99999	???	-9.99999	???
TLEMUCOOH	2.0E6	???	0.1	???
TLEPOXMUC	41.	???	0.1	???
TLOBIPEROH	4.0E4	???	0.1	???
TOL1O	2.9E3	???	0.1	???
TOLUENE	1.5E-1	???	0.1	???
C7PAN3	1.0E6	???	0.1	???
C6CO2OHPAN	4.0E4	???	0.1	???
C6H5CH2NO3	36.	???	0.1	???
DNCRES	2.3E3	???	0.1	???
DNCRESO2	-9.99999	???	-9.99999	???
DNCRESOOH	2.3E3	???	0.1	???
MNCATECH	4.6E3	???	0.1	???
MNCATECO2	-9.99999	???	-9.99999	???
MNCATECOOH	2.0E6	???	0.1	???
MNCPDKETENE	-9.99999	???	-9.99999	???
MNNCATCOOH	2.3E3	???	0.1	???
MNNCATECO2	-9.99999	???	-9.99999	???
NCRES1O	70.	???	0.1	???
NCRES1O2	-9.99999	???	-9.99999	???
NCRES1OOH	70.	???	0.1	???
NCRESO2	-9.99999	???	-9.99999	???
NCRESOOH	4.6E3	???	0.1	???
NDNCRESO2	-9.99999	???	-9.99999	???
NDNCRESOOH	2.3E3	???	0.1	???
NPTLQO2	-9.99999	???	-9.99999	???
NPTLQOOH	2.4E4	???	0.1	???
PBZN	70.	???	0.1	???
TLBIPERNO3	70.	???	0.1	???
TLEMUCNO3	4.0E4	???	0.1	???
TLEMUCPAN	2.8	???	0.1	???
TOL1OHNO2	7.0E1	???	0.1	???
C721CHO	1.0E6	???	0.1	???
C721CO3	-9.99999	???	-9.99999	???
C721CO3H	1.0E6	???	0.1	???
C810O2	-9.99999	???	-9.99999	???
C810OOH	1.0E6	???	0.1	???
C811O2	-9.99999	???	-9.99999	???
C812O2	-9.99999	???	-9.99999	???
C812OOH	1.0E6	???	0.1	???
C813O2	-9.99999	???	-9.99999	???
C813OOH	1.0E6	???	0.1	???
C85O2	-9.99999	???	-9.99999	???
C85OOH	1.0E6	???	0.1	???
C86O2	-9.99999	???	-9.99999	???
C86OOH	1.0E6	???	0.1	???
C89O2	-9.99999	???	-9.99999	???
C89OOH	1.0E6	???	0.1	???
C8BC	1.0E6	???	0.1	???
C8BCCO	1.0E6	???	0.1	???
C8BCO2	-9.99999	???	-9.99999	???
C8BCOOH	1.0E6	???	0.1	???
NORPINIC	4E13	???	0.1	???
EBENZ	1.2E-1	???	0.1	???
STYRENE	3.7E-1	???	0.1	???

KPP name	pss	Reference	dryreac	Reference
STYRENO2	-9.99999	???	-9.99999	???
STYRENOOH	70.	???	0.1	???
C721PAN	1.0E6	???	0.1	???
C810NO3	1.0E6	???	0.1	???
C89NO3	1.0E6	???	0.1	???
C8BCNO3	1.0E6	???	0.1	???
NSTYRENO2	-9.99999	???	-9.99999	???
NSTYRENOOH	70.	???	0.1	???
LXYL	1.7E-1	???	0.1	???
C811CO3	-9.99999	???	-9.99999	???
C811CO3H	1.0E6	???	0.1	???
C85CO3	-9.99999	???	-9.99999	???
C85CO3H	1.0E6	???	0.1	???
C89CO2H	6.6E7	???	0.1	???
C89CO3	-9.99999	???	-9.99999	???
C89CO3H	1.0E6	???	0.1	???
C96O2	-9.99999	???	-9.99999	???
C96OOH	1.0E6	???	0.1	???
C97O2	-9.99999	???	-9.99999	???
C97OOH	1.0E6	???	0.1	???
C98O2	-9.99999	???	-9.99999	???
C98OOH	1.0E6	???	0.1	???
NOPINDCO	1.0E6	???	0.1	???
NOPINDO2	-9.99999	???	-9.99999	???
NOPINDOOH	1.0E6	???	0.1	???
NOPINONE	1.0E6	???	0.1	???
NOPINOO	1.0E6	???	0.1	???
NORPINAL	1.0E6	???	0.1	???
NORPINENOL	1.0E6	???	0.1	???
PINIC	4E13	???	0.1	???
C811PAN	1.0E6	???	0.1	???
C89PAN	1.0E6	???	0.1	???
C96NO3	1.0E6	???	0.1	???
C9PAN2	1.0E6	???	0.1	???
LTMB	2.2E-1	???	0.1	???
APINAOO	-9.99999	???	-9.99999	???
APINBOO	-9.99999	???	-9.99999	???
APINENE	1.0E1	???	0.1	???
BPINAO2	-9.99999	???	-9.99999	???
BPINAOOH	1.0E6	???	0.1	???
BPINENE	1.0E1	???	0.1	???
C106O2	-9.99999	???	-9.99999	???
C106OOH	1.0E6	???	0.1	???
C109CO	1.0E6	???	0.1	???
C109O2	-9.99999	???	-9.99999	???
C109OOH	1.0E6	???	0.1	???
C96CO3	-9.99999	???	-9.99999	???
CAMPHENE	1.0E1	???	0.1	???
CARENE	1.0E1	???	0.1	???
MENTHEN6ONE	1.0E6	???	0.1	???
OH2MENTHEN6ONE	1.0E6	???	0.1	???
OHMENTHEN6ONEO2	-9.99999	???	-9.99999	???
PERPINONIC	7.4E5	???	0.1	???
PINAL	1.0E6	???	0.1	???
PINALO2	-9.99999	???	-9.99999	???
PINALOOH	1.0E6	???	0.1	???

KPP name	pss	Reference	dryreac	Reference
PINENOL	1.0E6	???	0.1	???
PINONIC	7.4E5	???	0.1	???
RO6R1O2	-9.99999	???	-9.99999	???
RO6R3O2	-9.99999	???	-9.99999	???
ROO6R1O2	-9.99999	???	-9.99999	???
SABINENE	1.0E1	???	0.1	???
BPINANO3	1.0E6	???	0.1	???
C106NO3	1.0E6	???	0.1	???
C10PAN2	1.0E6	???	0.1	???
PINALNO3	1.0E6	???	0.1	???
RO6R1NO3	1.0E6	???	0.1	???
ROO6R1NO3	1.0E6	???	0.1	???
LAPINABNO3	1.0E6	???	0.1	???
LAPINABO2	-9.99999	???	-9.99999	???
LAPINABOOH	1.0E6	???	0.1	???
LNAPINABO2	-9.99999	???	-9.99999	???
LNAPINABOOH	1.0E6	???	0.1	???
LNBPINABO2	-9.99999	???	-9.99999	???
LNBPINABOOH	1.0E6	???	0.1	???
LHAROM	1.2E-1	???	0.1	???
LFLUORINE	-9.99999	???	-9.99999	???
CHF3	-9.99999	???	-9.99999	???
CHF2CF3	-9.99999	???	-9.99999	???
CH3CF3	-9.99999	???	-9.99999	???
CH2F2	-9.99999	???	-9.99999	???
CH3CHF2	-9.99999	???	-9.99999	???
CCl4	-9.99999	???	-9.99999	???
CF2Cl2	-9.99999	???	-9.99999	???
CF2ClCF2Cl	-9.99999	???	-9.99999	???
CF2ClCFCl2	-9.99999	???	-9.99999	???
CF3CF2Cl	-9.99999	???	-9.99999	???
CFCl3	-9.99999	???	-9.99999	???
CH2Cl2	-9.99999	???	-9.99999	???
CH2FCF3	-9.99999	???	-9.99999	???
CH3CCl3	-9.99999	???	-9.99999	???
CH3CFCl2	-9.99999	???	-9.99999	???
CH3Cl	9.4E-2	???	0.0	???
CHCl3	-9.99999	???	-9.99999	???
CHF2Cl	-9.99999	???	-9.99999	???
Cl	-9.99999	???	-9.99999	???
Cl2	7.E-2	???	0.1	???
Cl2O2	-9.99999	???	-9.99999	???
ClNO2	-9.99999	???	-9.99999	???
ClNO3	1.E30	???	1.0	???
ClO	-9.99999	???	-9.99999	???
HCl	1E14	???	1.0	???
HOCl	6.7E2	???	1.0	???
OClO	-9.99999	???	-9.99999	???
LCHLORINE	-9.99999	???	-9.99999	???
Br	-9.99999	???	-9.99999	???
Br2	0.7	???	0.1	???
BrCl	1.0	???	0.1	???
BrNO2	-9.99999	???	-9.99999	???
BrNO3	1.0E30	???	1.0	???
BrO	-9.99999	???	-9.99999	???
CF2ClBr	-9.99999	???	-9.99999	???

KPP name	pss	Reference	dryreac	Reference
CF3Br	-9.99999	???	-9.99999	???
CH2Br2	1.1	???	0.0	???
CH2ClBr	1.1	???	0.0	???
CH3Br	1.6E-1	???	0.0	???
CHBr3	1.7	???	0.0	???
CHCl2Br	4.0E-1	???	0.0	???
CHClBr2	8.7E-1	???	0.0	???
HBr	1.3E17	???	1.0	???
HOBr	9.1E1	???	1.0	???
LBROMINE	-9.99999	???	-9.99999	???
C3H7I	-9.99999	???	-9.99999	???
CH2ClI	2.4E1	???	0.1	???
CH2I2	-9.99999	???	-9.99999	???
CH3I	-9.99999	???	-9.99999	???
HI	1.E30	???	1.0	???
HIO3	1.E30	???	1.0	???
HOI	1.E30	???	1.0	???
I	-9.99999	???	-9.99999	???
I2	3.0	???	0.1	???
I2O2	0.0	???	0.0	???
IBr	0.0	???	0.0	???
ICl	1.1E2	???	0.1	???
INO2	4.5	???	0.1	???
INO3	1.E30	???	1.0	???
IO	0.0	???	0.0	???
IPART	-9.99999	???	-9.99999	???
OIO	0.0	???	0.0	???
CH3SO2	-9.99999	???	-9.99999	???
CH3SO3	-9.99999	???	-9.99999	???
CH3SO3H	1.E30	???	1.0	???
DMS	0.0	???	0.0	???
DMSO	5.E4	???	0.1	???
H2SO4	1.3E15	???	1.0	???
OCS	-9.99999	???	-9.99999	???
S	-9.99999	???	-9.99999	???
SF6	-9.99999	???	-9.99999	???
SH	-9.99999	???	-9.99999	???
SO	-9.99999	???	-9.99999	???
SO2	2.45E5	???	0.0	???
SO3	-9.99999	???	-9.99999	???
LSULFUR	-9.99999	???	-9.99999	???
Hg	0.13	???	0.1	???
HgO	2.4E7	???	1.0	???
HgCl	2.4E7	???	1.0	???
HgCl2	2.4E7	???	1.0	???
HgBr	2.4E7	???	1.0	???
HgBr2	2.4E7	???	1.0	???
ClHgBr	2.4E7	???	1.0	???
BrHgOBr	2.4E7	???	1.0	???
ClHgOBr	2.4E7	???	1.0	???
RGM	-9.99999	???	-9.99999	???
LTERP	4.9E-2	???	0.0	???
LALK4	7.7E-4	???	0.0	???
LALK5	2.5E-4	???	0.0	???
LARO1	1.4E-1	???	0.0	???
LARO2	1.4E-1	???	0.0	???

KPP name	pss	Reference	dryreac	Reference
LOLE1	5.0E-3	???	0.0	???
LOLE2	5.0E-3	???	0.0	???
LfPOG02	1.0E5	???	0.0	???
LfPOG03	1.0E5	???	0.0	???
LfPOG04	1.0E5	???	0.0	???
LfPOG05	1.0E5	???	0.0	???
LbbPOG02	1.0E5	???	0.0	???
LbbPOG03	1.0E5	???	0.0	???
LbbPOG04	1.0E5	???	0.0	???
LfSOGsv01	1.0E5	???	0.0	???
LfSOGsv02	1.0E5	???	0.0	???
LbbSOGsv01	1.0E5	???	0.0	???
LbbSOGsv02	1.0E5	???	0.0	???
LfSOGiv01	1.0E5	???	0.0	???
LfSOGiv02	1.0E5	???	0.0	???
LfSOGiv03	1.0E5	???	0.0	???
LfSOGiv04	1.0E5	???	0.0	???
LbbSOGiv01	1.0E5	???	0.0	???
LbbSOGiv02	1.0E5	???	0.0	???
LbbSOGiv03	1.0E5	???	0.0	???
LbSOGv01	1.0E5	???	0.0	???
LbSOGv02	1.0E5	???	0.0	???
LbSOGv03	1.0E5	???	0.0	???
LbSOGv04	1.0E5	???	0.0	???
LbOSOGv01	1.0E5	???	0.0	???
LbOSOGv02	1.0E5	???	0.0	???
LbOSOGv03	1.0E5	???	0.0	???
LaSOGv01	1.0E5	???	0.0	???
LaSOGv02	1.0E5	???	0.0	???
LaSOGv03	1.0E5	???	0.0	???
LaSOGv04	1.0E5	???	0.0	???
LaOSOGv01	1.0E5	???	0.0	???
LaOSOGv02	1.0E5	???	0.0	???
LaOSOGv03	1.0E5	???	0.0	???
ISO2	-9.99999	???	-9.99999	???
ISON	1.7E4	???	0.1	???
ISOOH	1.7E6	???	0.1	???
LHOC3H6O2	-9.99999	???	-9.99999	???
LHOC3H6OOH	-9.99999	???	-9.99999	???
MVKO2	-9.99999	???	-9.99999	???
MVKOOH	-9.99999	???	-9.99999	???
NACA	-9.99999	???	-9.99999	???
ONE	-9.99999	???	-9.99999	???
O	-9.99999	???	-9.99999	???
C	-9.99999	???	-9.99999	???
OXL	3.26E6	???	0.1	???
O2m	-9.99999	???	-9.99999	???
OHm	-9.99999	???	-9.99999	???
Hp	-9.99999	???	-9.99999	???
NH4p	-9.99999	???	-9.99999	???
NO2m	-9.99999	???	-9.99999	???
NO3m	-9.99999	???	-9.99999	???
NO4m	-9.99999	???	-9.99999	???
CO3m	-9.99999	???	-9.99999	???
CO3mm	-9.99999	???	-9.99999	???
HCO3m	-9.99999	???	-9.99999	???

KPP name	pss	Reference	dryreac	Reference
HCOOm	-9.99999	???	-9.99999	???
CH3COOm	-9.99999	???	-9.99999	???
HOCH2CO2m	-9.99999	???	-9.99999	???
OXLm	-9.99999	???	-9.99999	???
OXLmm	-9.99999	???	-9.99999	???
CH3COCO2Hm	-9.99999	???	-9.99999	???
Clm	-9.99999	???	-9.99999	???
Cl2m	-9.99999	???	-9.99999	???
ClOm	-9.99999	???	-9.99999	???
ClOHm	-9.99999	???	-9.99999	???
Brm	-9.99999	???	-9.99999	???
Br2m	-9.99999	???	-9.99999	???
BrOm	-9.99999	???	-9.99999	???
BrOHm	-9.99999	???	-9.99999	???
BrCl2m	-9.99999	???	-9.99999	???
Br2Clm	-9.99999	???	-9.99999	???
Im	-9.99999	???	-9.99999	???
IO2m	-9.99999	???	-9.99999	???
IO3m	-9.99999	???	-9.99999	???
ICl2m	-9.99999	???	-9.99999	???
IBr2m	-9.99999	???	-9.99999	???
IClBrm	-9.99999	???	-9.99999	???
SO3m	-9.99999	???	-9.99999	???
SO3mm	-9.99999	???	-9.99999	???
SO4m	-9.99999	???	-9.99999	???
SO4mm	-9.99999	???	-9.99999	???
SO5m	-9.99999	???	-9.99999	???
HSO3m	-9.99999	???	-9.99999	???
HSO4m	-9.99999	???	-9.99999	???
HSO5m	-9.99999	???	-9.99999	???
CH3SO3m	-9.99999	???	-9.99999	???
CH2OHSO3m	-9.99999	???	-9.99999	???
Nap	-9.99999	???	-9.99999	???
Kp	-9.99999	???	-9.99999	???
Mgpp	-9.99999	???	-9.99999	???
Capp	-9.99999	???	-9.99999	???
Fepp	-9.99999	???	-9.99999	???
Feppp	-9.99999	???	-9.99999	???

Notes

Henry's law constants

- BIG_DP is a large number that represents infinite solubility in the code.
- The temperature dependence of the Henry constants is:

$$K_{\mathrm{H}} = K_{\mathrm{H}}^{\ominus} \times \exp\left(\frac{-\Delta_{\mathrm{soln}}H}{R}\left(\frac{1}{T} - \frac{1}{T^{\ominus}}\right)\right)$$

  where $\Delta_{\mathrm{soln}}H$ = molar enthalpy of dissolution [J/mol] and $R = 8.314$ J/(mol K).
- **HNO3:** Calculated using the acidity constant from Davis and de Bruin (1964).
- **CH3O2:** This value was estimated by Jacob (1986).
- **C2H5O2:** Assumed to be the same as for CH3O2.
- **HOCH2CO3H:** Estimate.
- **HOOCH2CO2H:** Estimate.
- **HBr:** Calculated using the acidity constant from Lax (1969).
- **HOBr:** Twice the value of HOCl, according to Blatchley et al. (1992). Same temperature dependence as for HOCl assumed.
- **IO:** Assumed to be the same as for HOI.
- **HOI:** Lower limit.
- **ICl:** Calculated using thermodynamic data from Wagman et al. (1982).
- **IBr:** Calculated using thermodynamic data from Wagman et al. (1982).
- **H2SO4:** To account for the very high Henry's law coefficient of H2SO4, a very high value was chosen arbitrarily.
- **DMSO:** Lower limit cited from another reference.
- **HgCl:** Assumed to be the same as for HgCl2.
- **HgBr:** Assumed to be the same as for HgCl2.
- **HgBr2:** Assumed to be the same as for HgCl2.
- **ClHgBr:** Assumed to be the same as for HgCl2.
- **BrHgOBr:** Assumed to be the same as for HgCl2.
- **ClHgOBr:** Assumed to be the same as for HgCl2.

Accommodation coefficients

- If the accommodation coefficient is not known, a value of $\alpha = 0.1$ is assumed.
- The temperature dependence of the accommodation coefficients is given by (Jayne et al., 1991):

$$\begin{aligned}\frac{\alpha}{1-\alpha} &= \exp\left(\frac{-\Delta_{\mathrm{obs}}G}{RT}\right) \\ &= \exp\left(\frac{-\Delta_{\mathrm{obs}}H}{RT} + \frac{\Delta_{\mathrm{obs}}S}{R}\right)\end{aligned}$$

where $\Delta_{\mathrm{obs}}G$ is the Gibbs free energy barrier of the transition state toward solution (Jayne et al., 1991), and $\Delta_{\mathrm{obs}}H$ and $\Delta_{\mathrm{obs}}S$ are the corresponding enthalpy and entropy, respectively. The equation can be rearranged to:

$$\ln\left(\frac{\alpha}{1-\alpha}\right) = \frac{-\Delta_{\mathrm{obs}}H}{R} \times \frac{1}{T} + \frac{-\Delta_{\mathrm{obs}}S}{R}$$

and further:

$$\mathrm{d}\ln\left(\frac{\alpha}{1-\alpha}\right) \Big/ \mathrm{d}\left(\frac{1}{T}\right) = \frac{-\Delta_{\mathrm{obs}}H}{R}$$

- **O2:** Estimate.
- **O3:** Value measured at 292 K.
- **OH:** Value measured at 293 K.
- **HO2:** Value for aqueous salts at 293 K.
- **NH3:** Value measured at 295 K.
- **NO:** Value measured between 193 and 243 K.
- **NO2:** Value measured at 298 K.
- **NO3:** Value is a lower limit, measured at 273 K.
- **N2O5:** Value for sulfuric acid, measured between 195 and 300 K.
- **HONO:** Value measured between 247 and 297 K.
- **HNO3:** Value measured at room temperature. Abbatt and Waschewsky (1998) say $\gamma > 0.2$. Here $\alpha = 0.5$ is used.
- **HNO4:** Value measured at 200 K for water ice.
- **CH3O2:** Estimate.
- **CO2:** Estimate.
- **HCHO:** Value measured between 260 and 270 K.
- **PAN:** Estimate.
- **C2H5O2:** Estimate.
- **CH3CHO:** Using the same estimate as in the CAPRAM 2.4 model (Ervens et al., 2003).
- **HCl:** Temperature dependence derived from published data at 2 different temperatures
- **HOCl:** Assumed to be the same as α(HOBr).
- **ClNO3:** Value measured at 274.5 K.
- **HBr:** Temperature dependence derived from published data at 2 different temperatures
- **HOBr:** Value measured at room temperature. Abbatt and Waschewsky (1998) say $\gamma > 0.2$. Here $\alpha = 0.5$ is used.
- **BrNO3:** Value measured at 273 K.
- **BrCl:** Assumed to be the same as α(Cl2).
- **I2:** Estimate.
- **IO:** Estimate.

- **OIO:** Estimate.
- **I2O2:** Estimate.
- **HI:** Temperature dependence derived from published data at 2 different temperatures
- **HOI:** Assumed to be the same as α(HOBr). See also Mössinger and Cox (2001) and Holmes et al. (2001).
- **HIO3:** Estimate.
- **INO2:** Estimate.
- **INO3:** Estimate.
- **ICl:** Estimate.
- **IBr:** Assumed to be the same as α(ICl).
- **H2SO4:** Value measured at 303 K.
- **Hg:** Estimate.
- **HgO:** Estimate.
- **HgCl2:** Estimate.
- **HgBr2:** Estimate.
- **ClHgBr:** Estimate.
- **BrHgOBr:** Estimate.
- **ClHgOBr:** Estimate.

Acid/base constants

- **pinic acid:** The same R_K_acid and R_K_acid2 values as for succinic acid from Haynes (2014) are used.
- **norpinic acid:** The same R_K_acid and R_K_acid2 values as for succinic acid from Haynes (2014) are used.
- **H2SO4:** From Wikipedia.

References

Abbatt, J. P. D. and Waschewsky, G. C. G.: Heterogeneous interactions of HOBr, HNO_3, O_3, and NO_2 with deliquescent NaCl aerosols at room temperature, J. Phys. Chem. A, 102, 3719–3725, doi:10.1021/JP980932D, 1998.

Abraham, M. H.: Thermodynamics of solution of homologous series of solutes in water, J. Chem. Soc. Faraday Trans. 1, 80, 153–181, doi:10.1039/F19848000153, 1984.

Andersson, M. E., Gårdfeldt, K., Wängberg, I., and Strömberg, D.: Determination of Henry's law constant for elemental mercury, Chemosphere, 73, 587–592, doi:10.1016/J.CHEMOSPHERE.2008.05.067, 2008.

Bartlett, W. P. and Margerum, D. W.: Temperature dependencies of the Henry's law constant and the aqueous phase dissociation constant of bromine chloride, Environ. Sci. Technol., 33, 3410–3414, doi:10.1021/ES990300K, 1999.

Berdnikov, V. M. and Bazhin, N. M.: Oxidation-reduction potentials of certain inorganic radicals in aqueous solutions, Russ. J. Phys. Chem., 44, 395–398, 1970.

Blatchley, III, E. R., Johnson, R. W., Alleman, J. E., and McCoy, W. F.: Effective Henry's law constants for free chlorine and free bromine, Wat. Res., 26, 99–106, doi:10.1016/0043-1354(92)90117-M, 1992.

Bone, R., Cullis, P., and Wolfenden, R.: Solvent effects on equilibria of addition of nucleophiles to acetaldehyde and the hydrophilic character of diols, J. Am. Chem. Soc., 105, 1339–1343, doi:10.1021/ja00343a044, 1983.

Braban, C. F., Adams, J. W., Rodriguez, D., Cox, R. A., Crowley, J. N., and Schuster, G.: Heterogeneous reactions of HOI, ICl and IBr on sea salt and sea salt proxies, Phys. Chem. Chem. Phys., 9, 3136–3148, doi:10.1039/B700829E, 2007.

Brimblecombe, P. and Clegg, S. L.: Erratum, J. Atmos. Chem., 8, 95, doi:10.1007/BF00053818, 1989.

Brimblecombe, P., Clegg, S. L., and Khan, I.: Thermodynamic properties of carboxylic acids relevant to their solubility in aqueous solutions, J. Aerosol Sci., 23, S901–S904, doi:10.1016/0021-8502(92)90557-C, 1992.

Burkholder, J. B., Sander, S. P., Abbatt, J., Barker, J. R., Huie, R. E., Kolb, C. E., Kurylo, M. J., Orkin, V. L., Wilmouth, D. M., and Wine, P. H.: Chemical Kinetics and Photochemical Data for Use in Atmospheric Studies, Evaluation No. 18, JPL Publication 15-10, Jet Propulsion Laboratory, Pasadena, `http://jpldataeval.jpl.nasa.gov`, 2015.

Chatfield, R. B. and Crutzen, P. J.: Are there interactions of iodine and sulfur species in marine air photochemistry?, J. Geophys. Res., 95D, 22 319–22 341, doi:10.1029/JD095ID13P22319, 1990.

Davidovits, P., Hu, J. H., Worsnop, D. R., Zahniser, M. S., and Kolb, C. E.: Entry of gas molecules into liquids, Faraday Discuss., 100, 65–81, doi:10.1039/FD9950000065, 1995.

Davis, Jr., W. and de Bruin, H. J.: New activity coefficients of 0-100 per cent aqueous nitric acid, J. Inorg. Nucl. Chem., 26, 1069–1083, doi:10.1016/0022-1902(64)80268-2, 1964.

De Bruyn, W. J., Shorter, J. A., Davidovits, P., Worsnop, D. R., Zahniser, M. S., and Kolb, C. E.: Uptake of gas-phase sulfur species methanesulfonic acid, dimethylsulfoxide, and dimethyl sulfone by aqueous surfaces, J. Geophys. Res., 99D, 16 927–16 932, doi:10.1029/94JD00684, 1994.

Deiber, G., George, C., Le Calvé, S., Schweitzer, F., and Mirabel, P.: Uptake study of $ClONO_2$ and $BrONO_2$ by halide containing droplets, Atmos. Chem. Phys., 4, 1291–1299, doi:10.5194/ACP-4-1291-2004, 2004.

DeMore, W. B., Sander, S. P., Golden, D. M., Hampson, R. F., Kurylo, M. J., Howard, C. J., Ravishankara, A. R., Kolb, C. E., and Molina, M. J.: Chemical kinetics and photochemical data for use in stratospheric modeling. Evaluation number 12, JPL Publication 97-4, Jet Propulsion Laboratory, Pasadena, CA, 1997.

Dong, H., Du, H., and Qian, X.: Theoretical prediction of pKa values for methacrylic acid oligomers using combined quantum mechanical and continuum solvation methods, J. Phys. Chem. A, 112, 12 687–12 694, doi:10.1021/jp807315p, 2008.

Ervens, B., George, C., Williams, J. E., Buxton, G. V., Salmon, G. A., Bydder, M., Wilkinson, F., Dentener, F., Mirabel, P., Wolke, R., and Herrmann, H.: CAPRAM 2.4 (MODAC mechanism): An extended and condensed tropospheric aqueous phase mechanism and its application, J. Geophys. Res., 108D, 4426, doi:10.1029/2002JD002202, 2003.

Fried, A., Henry, B. E., Calvert, J. G., and Mozurkewich, M.: The reaction probability of N_2O_5 with sulfuric acid aerosols at stratospheric temperatures and compositions, J. Geophys. Res., 99D, 3517–3532, doi:10.1029/93JD01907, 1994.

Goldstein, D. J.: Air and steam stripping of toxic pollutants, Tech. Rep. EPA-68-03-002, Industrial Environmental Research Laboratory, Cincinnati, OH, USA, 1982.

Hanson, D. R., Burkholder, J. B., Howard, C. J., and Ravishankara, A. R.: Measurement of OH and HO_2 radical uptake coefficients on water and sulfuric acid surfaces, J. Phys. Chem., 96, 4979–4985, doi:10.1021/J100191A046, 1992.

Haynes, W. M., ed.: CRC Handbook of Chemistry and Physics, 95th Edition (Internet Version 2015), Taylor and Francis Group, 2014.

Holmes, N. S., Adams, J. W., and Crowley, J. N.: Uptake and reaction of HOI and $IONO_2$ on frozen and dry NaCl/NaBr surfaces and H_2SO_4, Phys. Chem. Chem. Phys., 3, 1679–1687, doi:10.1039/B100247N, 2001.

Hu, J. H., Shi, Q., Davidovits, P., Worsnop, D. R., Zahniser, M. S., and Kolb, C. E.: Reactive uptake of Cl_2(g) and Br_2(g) by aqueous surfaces as a function of Br^- and I^- ion concentration: The effect of chemical reaction at the interface, J. Phys. Chem., 99, 8768–8776, doi:10.1021/J100021A050, 1995.

Jacob, D. J.: Chemistry of OH in remote clouds and its role in the production of formic acid and peroxymonosulfate, J. Geophys. Res., 91D, 9807–9826, doi:10.1029/JD091ID09P09807, 1986.

Jayne, J. T., Duan, S. X., Davidovits, P., Worsnop, D. R., Zahniser, M. S., and Kolb, C. E.: Uptake of gas-phase alcohol and organic acid molecules by water surfaces, J. Phys. Chem., 95, 6329–6336, doi:10.1021/J100169A047, 1991.

Ji, C. and Evans, E. M.: Using an internal standard method to determine Henry's law constants, Environ. Toxicol. Chem., 26, 231–236, doi:10.1897/06-339R.1, 2007.

Khan, I., Brimblecombe, P., and Clegg, S. L.: The Henry's law constants of pyruvic and methacrylic acids, Environ. Technol., 13, 587–593, doi:10.1080/09593339209385187, 1992.

Khan, I., Brimblecombe, P., and Clegg, S. L.: Solubilities of pyruvic acid and the lower (C_1-C_6) carboxylic acids. Experimental determination of equilibrium vapour pressures above pure aqueous and salt solutions, J. Atmos. Chem., 22, 285–302, doi:10.1007/BF00696639, 1995.

Lax, E.: Taschenbuch für Chemiker und Physiker, Springer Verlag, Berlin, 1969.

Leriche, M., Voisin, D., Chaumerliac, N., Monod, A., and Aumont, B.: A model for tropospheric multiphase chemistry: application to one cloudy event during the CIME experiment, Atmos. Environ., 34, 5015–5036, doi:10.1016/S1352-2310(00)00329-0, 2000.

Lide, D. R., ed.: CRC Handbook of Chemistry and Physics, 88th Edition (Internet Version 2008), CRC Press/Taylor and Francis, Boca Raton, FL, 2008.

Lind, J. A. and Kok, G. L.: Correction to "Henry's law determinations for aqueous solutions of hydrogen peroxide, methylhydroperoxide, and peroxyacetic acid" by John A. Lind and Gregory L. Kok, J. Geophys. Res., 99D, 21 119, 1994.

Magi, L., Schweitzer, F., Pallares, C., Cherif, S., Mirabel, P., and George, C.: Investigation of the uptake rate of ozone and methyl hydroperoxide by water surfaces, J. Phys. Chem. A, 101, 4943–4949, doi:10.1021/JP970646M, 1997.

Mössinger, J. C. and Cox, R. A.: Heterogeneous reaction of HOI with sodium halide salts, J. Phys. Chem. A, 105, 5165–5177, doi:10.1021/JP0044678, 2001.

O'Sullivan, D. W., Lee, M., Noone, B. C., and Heikes, B. G.: Henry's law constant determinations for hydrogen peroxide, methyl hydroperoxide, hydroxymethyl hydroperoxide, ethyl hydroperoxide, and peroxyacetic acid, J. Phys. Chem., 100, 3241–3247, doi:10.1021/JP951168N, 1996.

Palmer, D. A., Ramette, R. W., and Mesmer, R. E.: The hydrolysis of iodine: Equilibria at high temperatures, J. Nucl. Mater., 130, 280–286, doi:10.1016/0022-3115(85)90317-4, 1985.

Pandis, S. N. and Seinfeld, J. H.: Sensitivity analysis of a chemical mechanism for aqueous-phase atmospheric chemistry, J. Geophys. Res., 94D, 1105–1126, doi:10.1029/JD094ID01P01105, 1989.

Ponche, J. L., George, C., and Mirabel, P.: Mass transfer at the air/water interface: Mass accommodation coefficients of SO_2, HNO_3, NO_2 and NH_3, J. Atmos. Chem., 16, 1–21, doi:10.1007/BF00696620, 1993.

Pöschl, U., Canagaratna, M., Jayne, J. T., Molina, L. T., Worsnop, D. R., Kolb, C. E., and Molina, M. J.: Mass accommodation coefficient of H_2SO_4 vapor on aqueous sulfuric acid surfaces and gaseous diffusion coefficient of H_2SO_4 in N_2/H_2O, J. Phys. Chem. A, 102, 10 082–10 089, doi:10.1021/JP982809S, 1998.

Régimbal, J.-M. and Mozurkewich, M.: Peroxynitric acid decay mechanisms and kinetics at low pH, J. Phys. Chem. A, 101, 8822–8829, doi:10.1021/JP971908N, 1997.

Rosanka, S., Sander, R., Wahner, A., and Taraborrelli, D.: Oxidation of low-molecular weight organic compounds in cloud droplets: implementation into the chemistry mechanism of CAABA/MECCA (version 4.5.0), Geosci. Model Dev., in preparation, 2020.

Rudich, Y., Talukdar, R. K., Imamura, T., Fox, R. W., and Ravishankara, A. R.: Uptake of NO_3 on KI solutions: Rate coefficient for the $NO_3 + I^-$ reaction and gas-phase diffusion coefficients for NO_3, Chem. Phys. Lett., 261, 467–473, doi:10.1016/0009-2614(96)00980-3, 1996.

Saastad, O. W., Ellermann, T., and Nielsen, C. J.: On the adsorption of NO and NO_2 on cold H_2O/H_2SO_4 surfaces, Geophys. Res. Lett., 20, 1191–1193, doi:10.1029/93GL01621, 1993.

Sander, R.: Compilation of Henry's law constants (version 4.0) for water as solvent, Atmos. Chem. Phys., 15, 4399–4981, doi:10.5194/acp-15-4399-2015, 2015.

Sander, S. P., Abbatt, J., Barker, J. R., Burkholder, J. B., Friedl, R. R., Golden, D. M., Huie, R. E., Kolb, C. E., Kurylo, M. J., Moortgat, G. K., Orkin, V. L., and Wine, P. H.: Chemical Kinetics and Photochemical Data for Use in Atmospheric Studies, Evaluation No. 17, JPL Publication 10-6, Jet Propulsion Laboratory, Pasadena, `http://jpldataeval.jpl.nasa.gov`, 2011.

Saxena, P. and Hildemann, L. M.: Water-soluble organics in atmospheric particles: A critical review of the literature and application of thermodynamics to identify candidate compounds, J. Atmos. Chem., 24, 57–109, doi:10.1007/BF00053823, 1996.

Schwartz, S. E. and White, W. H.: Solubility equilibria of the nitrogen oxides and oxyacids in dilute aqueous solution, in: Advances in Environmental Science and Engineering, edited by Pfafflin, J. R. and Ziegler, E. N., vol. 4, pp. 1–45, Gordon and Breach Science Publishers, NY, 1981.

Schweitzer, F., Mirabel, P., and George, C.: Uptake of hydrogen halides by water droplets, J. Phys. Chem. A, 104, 72–76, doi:10.1021/JP992621O, 2000.

Shon, Z.-H., Kim, K.-H., Kim, M.-Y., and Lee, M.: Modeling study of reactive gaseous mercury in the urban air, Atmos. Environ., 39, 749–761, doi:10.1016/J.ATMOSENV.2004.09.071, 2005.

Snider, J. R. and Dawson, G. A.: Tropospheric light alcohols, carbonyls, and acetonitrile: Concentrations in the southwestern United States and Henry's law data, J. Geophys. Res., 90D, 3797–3805, doi:10.1029/JD090ID02P03797, 1985.

Takami, A., Kato, S., Shimono, A., and Koda, S.: Uptake coefficient of OH radical on aqueous surface, Chem. Phys., 231, 215–227, doi:10.1016/S0301-0104(98)00004-4, 1998.

Taraborrelli, D.: Estimated value, unpublished, 2020.

Thornton, J. and Abbatt, J. P. D.: Measurements of HO_2 uptake to aqueous aerosol: Mass accommodation coefficients and net reactive loss, J. Geophys. Res., 110D, doi:10.1029/2004JD005402, 2005.

US EPA: Estimation Programs Interface Suite™ for Microsoft® Windows, https://www.epa.gov/tsca-screening-tools/epi-suitetm-estimation-program-interface, Washington, DC, USA, 2012.

Wagman, D. D., Evans, W. H., Parker, V. B., Schumm, R. H., Halow, I., Bailey, S. M., Churney, K. L., and Nuttall, R. L.: The NBS tables of chemical thermodynamic properties; Selected values for inorganic and C_1 and C_2 organic substances in SI units, J. Phys. Chem. Ref. Data, 11, suppl. 2, 1982.

Warneck, P.: The relative importance of various pathways for the oxidation of sulfur dioxide and nitrogen dioxide in sunlit continental fair weather clouds, Phys. Chem. Chem. Phys., 1, 5471–5483, doi:10.1039/A906558J, 1999.

Watts, S. F. and Brimblecombe, P.: The Henry's law constant of dimethyl sulphoxide, Environ. Technol. Lett., 8, 483–486, doi:10.1080/09593338709384509, 1987.

Wilhelm, E., Battino, R., and Wilcock, R. J.: Low-pressure solubility of gases in liquid water, Chem. Rev., 77, 219–262, doi:10.1021/CR60306A003, 1977.

Worsnop, D. R., Zahniser, M. S., Kolb, C. E., Gardner, J. A., Watson, L. R., van Doren, J. M., Jayne, J. T., and Davidovits, P.: The temperature dependence of mass accommodation of SO_2 and H_2O_2 on aqueous surfaces, J. Phys. Chem., 93, 1159–1172, doi:10.1021/J100340A027, 1989.