

# CHEMPROP Data

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

Date: 2020-09-24

KPP name	$H^\ominus$ [M/atm]	Reference	$\frac{d \ln H^\ominus}{d(1/T)}$	Reference
			[K]	
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	$\frac{d \ln H^\ominus}{d(1/T)}$	Reference
			[K]	
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	???
HOCCOOH	5.0E8	Saxena and Hildemann (1996)	-9.99999	???
HOCH2CHO	1.0E6	???	-9.99999	???
HOCH2CHOHOH	209205.0	US EPA (2012)	-9.99999	???
HOCH2CO2H	1.5E6	see notes	6014.	???
HOCH2CO3	-9.99999	???	-9.99999	???
HOCH2CO3H	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	$\frac{d \ln H^\ominus}{d(1/T)}$	Reference
			[K]	
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	???
HYPPOPO2	-9.99999	???	-9.99999	???
HYPPOPO2H	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	???
HCOCOHCOC3	-9.99999	???	-9.99999	???
HCOCOHCOC3H	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	$\frac{d \ln H^\ominus}{d(1/T)}$	Reference
			[K]	
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	???

	$H^\ominus$		$\frac{d \ln H^\ominus}{d(1/T)}$	
KPP name	[M/atm]	Reference	[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	$\frac{d \ln H^\ominus}{d(1/T)}$	Reference
			[K]	
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	???
C5H7	-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	???

KPP name	$H^\ominus$ [M/atm]	Reference	$\frac{d \ln H^\ominus}{d(1/T)}$	Reference
			[K]	
ISOPDOOH	3.E6	Taraborrelli (2020)	-9.99999	???
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	???
ACCOMECCHO	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	???
NISOP2	-9.99999	???	-9.99999	???
NISOP2OOH	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	???



KPP name	$H^\ominus$ [M/atm]	Reference	$\frac{d \ln H^\ominus}{d(1/T)}$	Reference
			[K]	
LDISOPACO2	-9.99999	???	-9.99999	???
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	???
C5CO2OHCOC3	-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	???

KPP name	$H^\ominus$ [M/atm]	Reference	$\frac{d \ln H^\ominus}{d(1/T)}$	Reference
			[K]	
C6H5O	2.9e3	Taraborrelli (2020)	6800.	???
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	???
DNPHEO2	-9.99999	???	-9.99999	???
DNPHEOOH	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	???
NDNPHEO2	-9.99999	???	-9.99999	???
NDNPHEOOH	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	???

KPP name	$H^\ominus$ [M/atm]	Reference	$\frac{d \ln H^\ominus}{d(1/T)}$	
			[K]	Reference
BENZAL	-9.99999	???	-9.99999	???
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	???

KPP name	$H^\ominus$ [M/atm]	Reference	$\frac{d \ln H^\ominus}{d(1/T)}$	Reference
			[K]	
NPTLQO2	-9.99999	???	-9.99999	???
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	???
C8H9	-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	???

KPP name	$H^\ominus$ [M/atm]	Reference	$\frac{d \ln H^\ominus}{d(1/T)}$	Reference
			[K]	
NOPINDCO	1.0E6	Taraborrelli (2020)	-9.99999	???
NOPINDO2	-9.99999	???	-9.99999	???
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	???

KPP name	$H^\ominus$ [M/atm]	Reference	$\frac{d \ln H^\ominus}{d(1/T)}$	Reference
			[K]	
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	???
CF2ClCFC12	-9.99999	???	-9.99999	???
CF3CF2Cl	-9.99999	???	-9.99999	???
CFC13	-9.99999	???	-9.99999	???
CH2Cl2	-9.99999	???	-9.99999	???
CH2FCF3	-9.99999	???	-9.99999	???
CH3CCl3	-9.99999	???	-9.99999	???
CH3CFC12	-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	???
ClNO	4.9E-4	?	3103.	???
ClNO2	4.5E-4	?	2923.	???
ClONO	-9.99999	???	-9.99999	???
ClNO3	BIG_DP	see notes	0.	???
ClO	-9.99999	???	-9.99999	???
ClO2	-9.99999	???	-9.99999	???
Cl2O	-9.99999	???	-9.99999	???
Cl2O3	-9.99999	???	-9.99999	???
HCl	2./1.7	Brimblecombe and Clegg (1989)	9000.	???
HOCl	6.6E2	Burkholder et al. (2015)	5880.	???
OC1O	-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	???

KPP name	$H^\ominus$ [M/atm]	Reference	$\frac{d \ln H^\ominus}{d(1/T)}$	Reference
			[K]	
CH2CII	-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	???
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	???

KPP name	$H^\ominus$ [M/atm]	Reference	$\frac{d \ln H^\ominus}{d(1/T)}$	Reference
			[K]	
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	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	???



KPP name	$H^\ominus$		$\frac{d \ln H^\ominus}{d(1/T)}$	
	[M/atm]	Reference	[K]	Reference
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	$k_s$	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	???
HOCCOOH	9.99999	???
HOCH2CHO	9.99999	???
HOCH2CHOHOH	9.99999	???
HOCH2CO2H	9.99999	???
HOCH2CO3	9.99999	???
HOCH2CO3H	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	???
CH3COCHOH OH	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	???
HCOCOH PAN	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	???
HCOCCCH3CHOOH	9.99999	???
HCOCCCH3CO	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	???
LHMKABO2	9.99999	???
LHMKABOOH	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	???
C5H7	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	???
ACCOMMECHO	9.99999	???
ACCOMMECO3	9.99999	???
ACCOMMECO3H	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	???

KPP name	$k_s$	Reference
C5DIALO2	9.99999	???
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	???
LZCODC23DBCOD	9.99999	???
LC5PAN1719	9.99999	???



KPP name	$k_s$	Reference
LISOPACNO3	9.99999	???
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	???

KPP name	$k_s$	Reference
DNPHEOOH	9.99999	???
HOC6H4NO2	9.99999	???
NBZQO2	9.99999	???
NBZQOOH	9.99999	???
NCATECHOL	9.99999	???
NCATECO2	9.99999	???
NCATECOOH	9.99999	???
NCPDKETENE	9.99999	???
NDNPHEO2	9.99999	???
NDNPHEOOH	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	???

KPP name	$k_s$	Reference
TLEMUCCO3	9.99999	???
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	???

KPP name	$k_s$	Reference
STYRENE	9.99999	???
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	???
C8H9	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	???

KPP name	$k_s$	Reference
PINALO2	9.99999	???
PINALOOH	9.99999	???
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	???
CF2ClCFC12	9.99999	???
CF3CF2Cl	9.99999	???
CFC13	9.99999	???
CH2Cl2	9.99999	???
CH2FCF3	9.99999	???
CH3CCl3	9.99999	???
CH3CFC12	9.99999	???
CH3Cl	9.99999	???
CHCl3	9.99999	???
CHF2Cl	9.99999	???
Cl	9.99999	???
Cl2	9.99999	???
Cl2O2	9.99999	???
ClNO	9.99999	???
ClNO2	9.99999	???
ClONO	9.99999	???
ClNO3	9.99999	???
ClO	9.99999	???
ClO2	9.99999	???
Cl2O	9.99999	???
Cl2O3	9.99999	???
HCl	9.99999	???
HOCl	9.99999	???
OCIO	9.99999	???
LCHLORINE	9.99999	???

KPP name	$k_s$	Reference
Br	9.99999	???
Br2	9.99999	???
BrCl	9.99999	???
BrNO2	9.99999	???
BrNO3	9.99999	???
BrO	9.99999	???
CF2ClBr	9.99999	???
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	???

KPP name	$k_s$	Reference
ClHgOBr	9.99999	???
RGM	9.99999	???
lTERP	9.99999	???
LALK4	9.99999	???
LALK5	9.99999	???
LARO1	9.99999	???
LARO2	9.99999	???
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	???

KPP name	$k_s$	Reference
NH4p	9.99999	???
NO2m	9.99999	???
NO3m	9.99999	???
NO4m	9.99999	???
CO3m	9.99999	???
CO3mm	9.99999	???
HCO3m	9.99999	???
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	$\alpha$ -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	$\alpha$ -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.	???
HOCCOOH	0.1	see notes	0.	???
HOCH2CHO	0.1	see notes	0.	???
HOCH2CHOHOH	0.1	see notes	0.	???
HOCH2CO2H	0.1	see notes	0.	???
HOCH2CO3	0.1	see notes	0.	???
HOCH2CO3H	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	$\alpha$ -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.	???
HCOCOHC3O3	0.1	see notes	0.	???
HCOCOHC3O3H	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	$\alpha$ -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	$\alpha$ -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	$\alpha$ -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.	???
C5H7	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.	???
ACCOMMECHO	0.1	see notes	0.	???
ACCOMMECO3	0.1	see notes	0.	???
ACCOMMECO3H	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.	???

KPP name	$\alpha^{\ominus}$	Reference	$\alpha$ -T-dep	Reference
C5DIALO2	0.1	see notes	0.	???
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.	???

KPP name	$\alpha^{\ominus}$	Reference	$\alpha$ -T-dep	Reference
LISOPACNO3	0.1	see notes	0.	???
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.	???



KPP name	$\alpha^{\ominus}$	Reference	$\alpha$ -T-dep	Reference
DNPHEOOH	0.1	see notes	0.	???
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.	???
NDNPHEO2	0.1	see notes	0.	???
NDNPHEOOH	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.	???

KPP name	$\alpha^{\ominus}$	Reference	$\alpha$ -T-dep	Reference
TLEMUCCO3	0.1	see notes	0.	???
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.	???

KPP name	$\alpha^{\ominus}$	Reference	$\alpha$ -T-dep	Reference
STYRENE	0.1	see notes	0.	???
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.	???
C8H9	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.	???

KPP name	$\alpha^\ominus$	Reference	$\alpha$ -T-dep	Reference
PINALO2	0.1	see notes	0.	???
PINALOOH	0.1	see notes	0.	???
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.	???
CF2ClCFC12	0.1	see notes	0.	???
CF3CF2Cl	0.1	see notes	0.	???
CFC13	0.1	see notes	0.	???
CH2Cl2	0.1	see notes	0.	???
CH2FCF3	0.1	see notes	0.	???
CH3CCl3	0.1	see notes	0.	???
CH3CFC12	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.	???
ClNO	1.0E-5	?	0.	???
ClNO2	9.0E-3	?	0.	???
ClONO	0.1	see notes	0.	???
ClNO3	0.108	Deiber et al. (2004)	0.	???
ClO	0.1	see notes	0.	???
ClO2	0.1	see notes	0.	???
Cl2O	0.1	see notes	0.	???
Cl2O3	0.1	see notes	0.	???
HCl	0.074	Schweitzer et al. (2000)	3072.	???
HOCl	0.5	see notes	0.	???
OCIO	0.1	see notes	0.	???
LCHLORINE	0.1	see notes	0.	???

KPP name	$\alpha^{\ominus}$	Reference	$\alpha$ -T-dep	Reference
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.	???
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.	???

KPP name	$\alpha^\ominus$	Reference	$\alpha$ -T-dep	Reference
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.	???
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.	???

KPP name	$\alpha^{\ominus}$	Reference	$\alpha$ -T-dep	Reference
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.	???
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	???
HOCCOOH	9.99999	???	9.99999	???
HOCH2CHO	9.99999	???	9.99999	???
HOCH2CHOHOH	9.99999	???	9.99999	???
HOCH2CO2H	9.99999	???	9.99999	???
HOCH2CO3	9.99999	???	9.99999	???
HOCH2CO3H	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	???
HCOCOHC3O3	9.99999	???	9.99999	???
HCOCOHC3O3H	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	???
C5H7	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	???
ACCOMMECHO	9.99999	???	9.99999	???
ACCOMMECO3	9.99999	???	9.99999	???
ACCOMMECO3H	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	???

KPP name	$K_a$	Reference	$K_{a2}$	Reference
C5DIALO2	9.99999	???	9.99999	???
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	???

KPP name	$K_a$	Reference	$K_{a2}$	Reference
LISOPACNO3	9.99999	???	9.99999	???
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	???

KPP name	$K_a$	Reference	$K_{a2}$	Reference
DNPHENOOH	9.99999	???	9.99999	???
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	???
CRE SOL	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	???



KPP name	$K_a$	Reference	$K_{a2}$	Reference
TLEMUCCO3	9.99999	???	9.99999	???
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	???

KPP name	$K_a$	Reference	$K_{a2}$	Reference
STYRENE	9.99999	???	9.99999	???
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	???
C8H9	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	???

KPP name	$K_a$	Reference	$K_{a2}$	Reference
PINALO2	9.99999	???	9.99999	???
PINALOOH	9.99999	???	9.99999	???
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	???
CF2ClCFC12	9.99999	???	9.99999	???
CF3CF2Cl	9.99999	???	9.99999	???
CFC13	9.99999	???	9.99999	???
CH2Cl2	9.99999	???	9.99999	???
CH2FCF3	9.99999	???	9.99999	???
CH3CCl3	9.99999	???	9.99999	???
CH3CFC12	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	???
ClNO	9.99999	???	9.99999	???
ClNO2	9.99999	???	9.99999	???
ClONO	9.99999	???	9.99999	???
ClNO3	9.99999	???	9.99999	???
ClO	9.99999	???	9.99999	???
ClO2	9.99999	???	9.99999	???
Cl2O	9.99999	???	9.99999	???
Cl2O3	9.99999	???	9.99999	???
HCl	9.99999	???	9.99999	???
HOCl	9.99999	???	9.99999	???
OC1O	9.99999	???	9.99999	???
LCHLORINE	9.99999	???	9.99999	???

KPP name	$K_a$	Reference	$K_{a2}$	Reference
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	???
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	???

KPP name	$K_a$	Reference	$K_{a2}$	Reference
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	???
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	???

KPP name	$K_a$	Reference	$K_{a2}$	Reference
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	???
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	???
HOCCOOH	5.0E8	???	0.1	???
HOCH2CHO	1.0E6	???	0.1	???
HOCH2CHOHOH	1.0E6	???	0.1	???
HOCH2CO2H	4.2E7	???	0.1	???
HOCH2CO3	-9.99999	???	-9.99999	???
HOCH2CO3H	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	???
HCOCOHC03	-9.99999	???	-9.99999	???
HCOCOHC03H	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	???
LHMKABO2	-9.99999	???	-9.99999	???
LHMKABOOH	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	???
C5H7	-9.99999	???	-9.99999	???
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	???
ACCOMECCHO	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	???

KPP name	pss	Reference	dryreac	Reference
C5DIALO2	-9.99999	???	-9.99999	???
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	???
MMALANHYP	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	???

KPP name	pss	Reference	dryreac	Reference
LISOPACNO3	2.E4	???	0.1	???
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	???

KPP name	pss	Reference	dryreac	Reference
DNPHEOOH	2.3E3	???	0.1	???
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	???
NDNPHEO2	-9.99999	???	-9.99999	???
NDNPHEOOH	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	???

KPP name	pss	Reference	dryreac	Reference
TLEMUCCO3	-9.99999	???	-9.99999	???
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	???



KPP name	pss	Reference	dryreac	Reference
STYRENE	3.7E-1	???	0.1	???
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	???
C8H9	-9.99999	???	-9.99999	???
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	???

KPP name	pss	Reference	dryreac	Reference
PINALO2	-9.99999	???	-9.99999	???
PINALOOH	1.0E6	???	0.1	???
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	???
CF2ClCFC12	-9.99999	???	-9.99999	???
CF3CF2Cl	-9.99999	???	-9.99999	???
CFC13	-9.99999	???	-9.99999	???
CH2Cl2	-9.99999	???	-9.99999	???
CH2FCF3	-9.99999	???	-9.99999	???
CH3CCl3	-9.99999	???	-9.99999	???
CH3CFC12	-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	???
ClNO	-9.99999	???	-9.99999	???
ClNO2	-9.99999	???	-9.99999	???
ClONO	-9.99999	???	-9.99999	???
ClNO3	1.E30	???	1.0	???
ClO	-9.99999	???	-9.99999	???
ClO2	-9.99999	???	-9.99999	???
Cl2O	-9.99999	???	-9.99999	???
Cl2O3	-9.99999	???	-9.99999	???
HCl	1E14	???	1.0	???
HOCl	6.7E2	???	1.0	???
OC1O	-9.99999	???	-9.99999	???
LCHLORINE	-9.99999	???	-9.99999	???

KPP name	pss	Reference	dryreac	Reference
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	???
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	???

KPP name	pss	Reference	dryreac	Reference
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	???
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	???

KPP name	pss	Reference	dryreac	Reference
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	???
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:

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

where  $\Delta_{\text{soln}}H$  = molar enthalpy of dissolution [J/mol] and  $R = 8.314 \text{ J}/(\text{mol K})$ .

- **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.
- **HOCH2CO2H**: 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):

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

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

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

and further:

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

- **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  $\alpha(\text{HOBr})$ .
- **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  $\alpha(\text{Cl2})$ .
- **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  $\alpha(\text{HOBr})$ . 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  $\alpha(\text{ICl})$ .
- **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  $R_K\text{acid}$  and  $R_K\text{acid2}$  values as for succinic acid from Haynes (2014) are used.
- **norpinic acid:** The same  $R_K\text{acid}$  and  $R_K\text{acid2}$  values as for succinic acid from Haynes (2014) are used.
- **H2SO4:** From Wikipedia.



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