

KPP name	$H^\ominus$ [M/atm]	Reference	$\frac{d \ln H^\ominus}{d(1/T)}$	
			[K]	Reference
O1D	-9.99999	???	-9.99999	???
O3P	-9.99999	???	-9.99999	???
O2	1.3E-3	Wilhelm et al. (1977)	1500.	???
O3	1.03E-2	Burkholder et al. (2015)	2830.	???
H	-9.99999	???	-9.99999	???
H2	-9.99999	???	-9.99999	???
OH	3.0E1	Hanson et al. (1992)	4300.	???
HO2	3.9E3	Hanson et al. (1992)	5900.	???
H2O	BIG_DP	see notes	0.	???
H2O2	1.E5	Lind and Kok (1994)	6338.	???
H2OH2O	-9.99999	???	-9.99999	???
N	-9.99999	???	-9.99999	???
N2D	-9.99999	???	-9.99999	???
N2	-9.99999	???	-9.99999	???
NH3	60.2	Burkholder et al. (2015)	4160.	???
N2O	-9.99999	???	-9.99999	???
NO	1.9E-3	Schwartz and White (1981)	1480.	???
NO2	1.2E-2	Burkholder et al. (2015)	2360.	???
NO3	3.8E-2	Burkholder et al. (2015)	2000.	Berdnikov and Bazhin (1977)
N2O5	BIG_DP	see notes	0.	???
HONO	4.9E1	Schwartz and White (1981)	4780.	???
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	-9.99999	???	-9.99999	???
CO2	3.4E-2	Sander et al. (2011)	2400.	???
HCHO	3.23E3	Burkholder et al. (2015)	7100.	???
HCOOH	8.9E3	Burkholder et al. (2015)	6100.	???
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	???

KPP name	$H^\ominus$ [M/atm]	Reference	$\frac{d \ln H^\ominus}{d(1/T)}$	
			[K]	Reference
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	???
C2H5O2	6.	see notes	5600.	???
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	1.29E1	Burkholder et al. (2015)	5890.	???
CH3CHOHO2	-9.99999	???	-9.99999	???
CH3CHOHOOH	-9.99999	???	-9.99999	???
CH3CO	-9.99999	???	-9.99999	???
CH3CO2H	4.1E3	Burkholder et al. (2015)	6200.	???
CH3CO3	-9.99999	???	-9.99999	???
CH3CO3H	-9.99999	???	-9.99999	???
ETHGLY	-9.99999	???	-9.99999	???
GLYOX	4.19E5	Burkholder et al. (2015)	7480.	???
HCOCH2O2	-9.99999	???	-9.99999	???
HCOCO	-9.99999	???	-9.99999	???
HCOCO2H	1.09E4	Burkholder et al. (2015)	4810.	???
HCOCO3	-9.99999	???	-9.99999	???
HCOCO3H	-9.99999	???	-9.99999	???
HOCH2CH2O	-9.99999	???	-9.99999	???
HOCH2CH2O2	-9.99999	???	-9.99999	???
HOCH2CHO	4.E4	Burkholder et al. (2015)	4630.	???
HOCH2CO	-9.99999	???	-9.99999	???
HOCH2CO2H	2.83E4	Burkholder et al. (2015)	4030.	???
HOCH2CO3	-9.99999	???	-9.99999	???
HOCH2CO3H	-9.99999	???	-9.99999	???
HOCHCHO	-9.99999	???	-9.99999	???
HOCH2CHO	-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	???

KPP name	$H^\ominus$ [M/atm]	Reference	$\frac{d \ln H^\ominus}{d(1/T)}$ [K]	Reference
NO3CH2CHO	-9.99999	???	-9.99999	???
NO3CH2CO3	-9.99999	???	-9.99999	???
NO3CH2PAN	-9.99999	???	-9.99999	???
PAN	2.8	Burkholder et al. (2015)	5730.	???
PHAN	-9.99999	???	-9.99999	???
ACETOL	-9.99999	???	-9.99999	???
ALCOCH2OOH	-9.99999	???	-9.99999	???
C2H5CHO	-9.99999	???	-9.99999	???
PROPACID	5.7E3	Khan et al. (1995)	6800.	Abraham (1984)
C2H5CO3	-9.99999	???	-9.99999	???
PERPROACID	-9.99999	???	-9.99999	???
C33CO	-9.99999	???	-9.99999	???
C3H6	-9.99999	???	-9.99999	???
C3H8	-9.99999	???	-9.99999	???
CH3CHCO	-9.99999	???	-9.99999	???
CH3COCH2O2	-9.99999	???	-9.99999	???
CH3COCH3	27.8	Burkholder et al. (2015)	5530.	???
CH3COCO2H	3.11E5	Burkholder et al. (2015)	5090.	???
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	3.5E3	Betterton and Hoffmann (1988)	7500.	???
NC3H7O2	-9.99999	???	-9.99999	???
NC3H7OOH	-9.99999	???	-9.99999	???
NROPOL	-9.99999	???	-9.99999	???
PROPENOL	-9.99999	???	-9.99999	???
C32OH13CO	-9.99999	???	-9.99999	???
C3DIALO2	-9.99999	???	-9.99999	???
C3DIALOOH	-9.99999	???	-9.99999	???

KPP name	$H^\ominus$ [M/atm]	Reference	$\frac{d \ln H^\ominus}{d(1/T)}$	
			[K]	Reference
HCOCOHCO3	-9.99999	???	-9.99999	???
HCOCOHCO3H	-9.99999	???	-9.99999	???
METACETHO	-9.99999	???	-9.99999	???
C3PAN1	-9.99999	???	-9.99999	???
C3PAN2	-9.99999	???	-9.99999	???
CH3COCH2O2NO2	-9.99999	???	-9.99999	???
IC3H7NO3	-9.99999	???	-9.99999	???
NC3H7NO3	-9.99999	???	-9.99999	???
NOA	-9.99999	???	-9.99999	???
PPN	-9.99999	???	-9.99999	???
PR2O2HNO3	-9.99999	???	-9.99999	???
PRONO3BO2	-9.99999	???	-9.99999	???
PROPOLNO3	-9.99999	???	-9.99999	???
HCOCOH PAN	-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	???
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	???

KPP name	$H^\ominus$ [M/atm]	Reference	$\frac{d \ln H^\ominus}{d(1/T)}$	
			[K]	Reference
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	2.58E3	Khan et al. (1992)	0.	???
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	???
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	???

KPP name	$H^\ominus$ [M/atm]	Reference	$\frac{d \ln H^\ominus}{d(1/T)}$	
			[K]	Reference
HOCOC4DIAL	-9.99999	???	-9.99999	???
MALANH Y	-9.99999	???	-9.99999	???
MALANH Y O2	-9.99999	???	-9.99999	???
MALANH Y OOH	-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	???
MALNH Y OHCO	-9.99999	???	-9.99999	???
MECOACEOOH	-9.99999	???	-9.99999	???
MECOACETO2	-9.99999	???	-9.99999	???
BUT2OLNO3	-9.99999	???	-9.99999	???
C3I2COPAN	-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	???
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	???

KPP name	$H^{\ominus}$ [M/atm]	Reference	$\frac{d \ln H^{\ominus}}{d(1/T)}$	
			[K]	Reference
C1OOHC3O2C4OD	-9.99999	???	-9.99999	???
C4MDIAL	-9.99999	???	-9.99999	???
C511O2	-9.99999	???	-9.99999	???
C511OOH	-9.99999	???	-9.99999	???
C512O2	-9.99999	???	-9.99999	???
C512OOH	-9.99999	???	-9.99999	???
C513CO	-9.99999	???	-9.99999	???
C513O2	-9.99999	???	-9.99999	???
C513OOH	-9.99999	???	-9.99999	???
C514O2	-9.99999	???	-9.99999	???
C514OOH	-9.99999	???	-9.99999	???
C59O2	-9.99999	???	-9.99999	???
C59OOH	-9.99999	???	-9.99999	???
C5H8	-9.99999	???	-9.99999	???
CHOC3COCO3	-9.99999	???	-9.99999	???
CHOC3COOOH	-9.99999	???	-9.99999	???
CO13C4CHO	-9.99999	???	-9.99999	???
CO23C4CHO	-9.99999	???	-9.99999	???
CO23C4CO3	-9.99999	???	-9.99999	???
CO23C4CO3H	-9.99999	???	-9.99999	???
DB1O	-9.99999	???	-9.99999	???
DB1O2	-9.99999	???	-9.99999	???
DB1OOH	-9.99999	???	-9.99999	???
DB2O2	-9.99999	???	-9.99999	???
DB2OOH	-9.99999	???	-9.99999	???
HCOC5	-9.99999	???	-9.99999	???
ISOPAOH	-9.99999	???	-9.99999	???
ISOPBO2	-9.99999	???	-9.99999	???
ISOPBOH	-9.99999	???	-9.99999	???
ISOPBOOH	-9.99999	???	-9.99999	???
ISOPDO2	-9.99999	???	-9.99999	???
ISOPDOH	-9.99999	???	-9.99999	???
ISOPDOOH	-9.99999	???	-9.99999	???
MBO	-9.99999	???	-9.99999	???
MBOACO	-9.99999	???	-9.99999	???
MBOCOCO	-9.99999	???	-9.99999	???
ME3FURAN	-9.99999	???	-9.99999	???
ACCOMMECHO	-9.99999	???	-9.99999	???
ACCOMMECO3	-9.99999	???	-9.99999	???
ACCOMMECO3H	-9.99999	???	-9.99999	???
C24O3CCO2H	-9.99999	???	-9.99999	???
C4CO2DBC03	-9.99999	???	-9.99999	???
C4CO2DCO3H	-9.99999	???	-9.99999	???
C5134CO2OH	-9.99999	???	-9.99999	???
C54CO	-9.99999	???	-9.99999	???
C5CO14O2	-9.99999	???	-9.99999	???

KPP name	$H^\ominus$ [M/atm]	Reference	$\frac{d \ln H^\ominus}{d(1/T)}$	
			[K]	Reference
C5CO14OH	-9.99999	???	-9.99999	???
C5CO14OOH	-9.99999	???	-9.99999	???
C5DIALCO	-9.99999	???	-9.99999	???
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	???



KPP name	$H^\ominus$ [M/atm]	Reference	$\frac{d \ln H^\ominus}{d(1/T)}$	
			[K]	Reference
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	???
LZCODC23DBC00H	-9.99999	???	-9.99999	???
LC5PAN1719	-9.99999	???	-9.99999	???
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	???
C5CO2DBC03	-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	???

KPP name	$H^\ominus$ [M/atm]	Reference	$\frac{d \ln H^\ominus}{d(1/T)}$	
			[K]	Reference
C6H5O	-9.99999	???	-9.99999	???
C6H5O2	-9.99999	???	-9.99999	???
C6H5OOH	-9.99999	???	-9.99999	???
CATEC1O	-9.99999	???	-9.99999	???
CATEC1O2	-9.99999	???	-9.99999	???
CATEC1OOH	-9.99999	???	-9.99999	???
CATECHOL	-9.99999	???	-9.99999	???
CPDKETENE	-9.99999	???	-9.99999	???
PBZQCO	-9.99999	???	-9.99999	???
PBZQO2	-9.99999	???	-9.99999	???
PBZQONE	-9.99999	???	-9.99999	???
PBZQOOH	-9.99999	???	-9.99999	???
PHENO2	-9.99999	???	-9.99999	???
PHENOL	-9.99999	???	-9.99999	???
PHENOOH	-9.99999	???	-9.99999	???
C614NO3	-9.99999	???	-9.99999	???
BZBIPERNO3	-9.99999	???	-9.99999	???
BZEMUCNO3	-9.99999	???	-9.99999	???
BZEMUCPAN	-9.99999	???	-9.99999	???
C5CO2DBPAN	-9.99999	???	-9.99999	???
C5CO2OHPAN	-9.99999	???	-9.99999	???
DNPHEN	-9.99999	???	-9.99999	???
DNPHENO2	-9.99999	???	-9.99999	???
DNPHENOOH	-9.99999	???	-9.99999	???
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	???

KPP name	$H^\ominus$ [M/atm]	Reference	$\frac{d \ln H^\ominus}{d(1/T)}$	
			[K]	Reference
C722OOH	-9.99999	???	-9.99999	???
CO235C6CHO	-9.99999	???	-9.99999	???
CO235C6CO3	-9.99999	???	-9.99999	???
MCPDKETENE	-9.99999	???	-9.99999	???
ROO6R3O	-9.99999	???	-9.99999	???
ROO6R3O2	-9.99999	???	-9.99999	???
ROO6R5O2	-9.99999	???	-9.99999	???
BENZAL	-9.99999	???	-9.99999	???
C6CO2OHCO3	-9.99999	???	-9.99999	???
C6COOHCO3H	-9.99999	???	-9.99999	???
C6H5CH2O2	-9.99999	???	-9.99999	???
C6H5CH2OOH	-9.99999	???	-9.99999	???
C6H5CO3	-9.99999	???	-9.99999	???
C6H5CO3H	-9.99999	???	-9.99999	???
C7CO4DB	-9.99999	???	-9.99999	???
CRESO2	-9.99999	???	-9.99999	???
CRESOL	-9.99999	???	-9.99999	???
CRESOOH	-9.99999	???	-9.99999	???
MCATEC1O	-9.99999	???	-9.99999	???
MCATEC1O2	-9.99999	???	-9.99999	???
MCATEC1OOH	-9.99999	???	-9.99999	???
MCATECHOL	-9.99999	???	-9.99999	???
OXYL1O2	-9.99999	???	-9.99999	???
OXYL1OOH	-9.99999	???	-9.99999	???
PHCOOH	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	-9.99999	???	-9.99999	???
TLEMUCCO	-9.99999	???	-9.99999	???
TLEMUCCO2H	-9.99999	???	-9.99999	???
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	???

KPP name	$H^\ominus$ [M/atm]	Reference	$\frac{d \ln H^\ominus}{d(1/T)}$	
			[K]	Reference
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	-9.99999	???	-9.99999	???
EBENZ	-9.99999	???	-9.99999	???
STYRENE	-9.99999	???	-9.99999	???
STYRENO2	-9.99999	???	-9.99999	???
STYRENOOH	-9.99999	???	-9.99999	???

KPP name	$H^\ominus$ [M/atm]	Reference	$\frac{d \ln H^\ominus}{d(1/T)}$	
			[K]	Reference
C721PAN	-9.99999	???	-9.99999	???
C810NO3	-9.99999	???	-9.99999	???
C89NO3	-9.99999	???	-9.99999	???
C8BCNO3	-9.99999	???	-9.99999	???
NSTYRENO2	-9.99999	???	-9.99999	???
NSTYRENOOH	-9.99999	???	-9.99999	???
LXYL	-9.99999	???	-9.99999	???
C811CO3	-9.99999	???	-9.99999	???
C811CO3H	-9.99999	???	-9.99999	???
C85CO3	-9.99999	???	-9.99999	???
C85CO3H	-9.99999	???	-9.99999	???
C89CO2H	-9.99999	???	-9.99999	???
C89CO3	-9.99999	???	-9.99999	???
C89CO3H	-9.99999	???	-9.99999	???
C96O2	-9.99999	???	-9.99999	???
C96OOH	-9.99999	???	-9.99999	???
C97O2	-9.99999	???	-9.99999	???
C97OOH	-9.99999	???	-9.99999	???
C98O2	-9.99999	???	-9.99999	???
C98OOH	-9.99999	???	-9.99999	???
NOPINDCO	-9.99999	???	-9.99999	???
NOPINDO2	-9.99999	???	-9.99999	???
NOPINDOOH	-9.99999	???	-9.99999	???
NOPINONE	-9.99999	???	-9.99999	???
NOPINOO	-9.99999	???	-9.99999	???
NORPINAL	-9.99999	???	-9.99999	???
NORPINENOL	-9.99999	???	-9.99999	???
PINIC	-9.99999	???	-9.99999	???
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	???

KPP name	$H^{\ominus}$ [M/atm]	Reference	$\frac{d \ln H^{\ominus}}{d(1/T)}$	
			[K]	Reference
CARENE	-9.99999	???	-9.99999	???
MENTHEN6ONE	-9.99999	???	-9.99999	???
OH2MENTHEN6ONE	-9.99999	???	-9.99999	???
OHMENTHEN6ONEO2	-9.99999	???	-9.99999	???
PERPINONIC	-9.99999	???	-9.99999	???
PINAL	-9.99999	???	-9.99999	???
PINALO2	-9.99999	???	-9.99999	???
PINALOOH	-9.99999	???	-9.99999	???
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	???
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	???

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

KPP name	$H^\ominus$ [M/atm]	Reference	$\frac{d \ln H^\ominus}{d(1/T)}$ [K]	Reference
CH3SO3H	BIG_DP	see notes	0.	???
DMS	5.4E-1	Burkholder et al. (2015)	3460.	???
DMSO	9.5E4	Watts and Brimblecombe (1987)	1300.	???
CH3SOOH	1.0E8	Hoffmann et al. (2016)	1760.	???
HPMTF	1.33E4	Wollesen de Jonge et al. (2021)	1300.	???
HOOCH2SCO	1.33E4	Wollesen de Jonge et al. (2021)	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.	???
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	???



KPP name	$H^\ominus$ [M/atm]	Reference	$\frac{d \ln H^\ominus}{d(1/T)}$	
			[K]	Reference
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	???
N2O3	6.0E-1	Schwartz and White (1981)	0.	???
N2O4	1.4	Schwartz and White (1981)	0.	???
MGLYOXAC	3.11E5	Saxena and Hildemann (1996)	0.	???
BSOV	1.E8	Saxena and Hildemann (1996)	0.	???
BLOV	1.E8	Saxena and Hildemann (1996)	0.	???
MMA	36.5	Ge et al. (2011)	0.	???
DMA	31.4	Ge et al. (2011)	0.	???
TMA	9.6	Ge et al. (2011)	0.	???
MEA	6.18E6	Ge et al. (2011)	0.	???
DEA	2.58E7	Ge et al. (2011)	0.	???
TEA	1.42E9	Ge et al. (2011)	0.	???
HNCO	2.50E1	Roberts et al. (2011)	0.	???
H2NCHO	7.19E5	Ge et al. (2011)	0.	???
H2NCOCH2OH	5.83E5	Ge et al. (2011)	0.	???
CH3NHCHO	2.98E4	Mitch and Herckes (2012)	0.	???
DMNCHO	1.36E4	Mitch and Herckes (2012)	0.	???
MMNNO2	6.85E2	Mitch and Herckes (2012)	0.	???
MEANNO2	4.45E6	da Silva (2012)	0.	???
MEANNO	1.00E7	Mitch and Herckes (2012)	0.	???
NDMA	2.75E2	Mitch and Herckes (2012)	0.	???
DMNNO2	3.13E2	Mitch and Herckes (2012)	0.	???

KPP name	$H^\ominus$ [M/atm]	Reference	$\frac{d \ln H^\ominus}{d(1/T)}$	
			[K]	Reference
NDELA	2.06E8	Mitch and Herckes (2012)	0.	???
DEANNO2	2.37E9	da Silva (2012)	0.	???
ONE	-9.99999	???	-9.99999	???
O	-9.99999	???	-9.99999	???
C	-9.99999	???	-9.99999	???
OXL	3.2E6	Brimblecombe et al. (1992)	7285.	???

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	???
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	???

KPP name	$k_s$	Reference
HOCH2O2NO2	9.99999	???
NCO	9.99999	???
LCARBON	9.99999	???
C2H2	9.99999	???
C2H4	9.99999	???
C2H5O2	9.99999	???
C2H5OH	9.99999	???
C2H5OOH	9.99999	???
C2H6	9.99999	???
CH2CHOH	9.99999	???
CH2CO	9.99999	???
CH3CHO	9.99999	???
CH3CHOHO2	9.99999	???
CH3CHOHOOH	9.99999	???
CH3CO	9.99999	???
CH3CO2H	9.99999	???
CH3CO3	9.99999	???
CH3CO3H	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	???
HOCH2CO	9.99999	???
HOCH2CO2H	9.99999	???
HOCH2CO3	9.99999	???
HOCH2CO3H	9.99999	???
HOCHCHO	9.99999	???
HOOCH2CHO	9.99999	???
HOOCH2CO2H	9.99999	???
HOOCH2CO3	9.99999	???
HOOCH2CO3H	9.99999	???
HYETHO2H	9.99999	???
C2H5NO3	9.99999	???
C2H5O2NO2	9.99999	???
CH3CN	9.99999	???
ETHOHNO3	9.99999	???
NCCH2O2	9.99999	???
NO3CH2CHO	9.99999	???
NO3CH2CO3	9.99999	???
NO3CH2PAN	9.99999	???
PAN	9.99999	???
PHAN	9.99999	???
ACETOL	9.99999	???

KPP name	$k_s$	Reference
ALCOCH2OOH	9.99999	???
C2H5CHO	9.99999	???
PROPACID	9.99999	???
C2H5CO3	9.99999	???
PERPROACID	9.99999	???
C33CO	9.99999	???
C3H6	9.99999	???
C3H8	9.99999	???
CH3CHCO	9.99999	???
CH3COCH2O2	9.99999	???
CH3COCH3	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	???
PROPENOL	9.99999	???
C32OH13CO	9.99999	???
C3DIALO2	9.99999	???
C3DIALOOH	9.99999	???
HCOCOHCOC3	9.99999	???
HCOCOHCOC3H	9.99999	???
METACETHO	9.99999	???
C3PAN1	9.99999	???
C3PAN2	9.99999	???
CH3COCH2O2NO2	9.99999	???
IC3H7NO3	9.99999	???
NC3H7NO3	9.99999	???
NOA	9.99999	???

KPP name	$k_s$	Reference
PPN	9.99999	???
PR2O2HNO3	9.99999	???
PRONO3BO2	9.99999	???
PROPOLNO3	9.99999	???
HCOCOHPAN	9.99999	???
BIACET	9.99999	???
BIACETO2	9.99999	???
BIACETOH	9.99999	???
BIACETOOH	9.99999	???
BUT1ENE	9.99999	???
BUT2OLO	9.99999	???
BUT2OLO2	9.99999	???
BUT2OLOOH	9.99999	???
BUTENOL	9.99999	???
C312COCO3	9.99999	???
C312COCO3H	9.99999	???
C3H7CHO	9.99999	???
C413COOOH	9.99999	???
C44O2	9.99999	???
C44OOH	9.99999	???
C4CODIAL	9.99999	???
CBUT2ENE	9.99999	???
CH3COCHCO	9.99999	???
CH3COCHO2CHO	9.99999	???
CH3COCOCO2H	9.99999	???
CH3COOHCHCHO	9.99999	???
CHOC3COO2	9.99999	???
CO23C3CHO	9.99999	???
CO2C3CHO	9.99999	???
CO2H3CHO	9.99999	???
CO2H3CO2H	9.99999	???
CO2H3CO3	9.99999	???
CO2H3CO3H	9.99999	???
EZCH3CO2CHCHO	9.99999	???
EZCHOCCH3CHO2	9.99999	???
HCOCCH3CHOOH	9.99999	???
HCOCCH3CO	9.99999	???
HCOCO2CH3CHO	9.99999	???
HMAC	9.99999	???
HO12CO3C4	9.99999	???
HVMK	9.99999	???
IBUTALOH	9.99999	???
IBUTDIAL	9.99999	???
IBUTOLBO2	9.99999	???
IBUTOLBOOH	9.99999	???
IC4H10	9.99999	???
IC4H9O2	9.99999	???
IC4H9OOH	9.99999	???
IPRCHO	9.99999	???

KPP name	$k_s$	Reference
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	???
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	???

KPP name	$k_s$	Reference
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	???
C1ODC2O2C4OD	9.99999	???
C1ODC2O2C4OOH	9.99999	???
C1ODC2OOHC4OD	9.99999	???
C1ODC3O2C4OOH	9.99999	???
C1OOHC2O2C4OD	9.99999	???
C1OOHC2OOHC4OD	9.99999	???
C1OOHC3O2C4OD	9.99999	???
C4MDIAL	9.99999	???
C511O2	9.99999	???
C511OOH	9.99999	???
C512O2	9.99999	???
C512OOH	9.99999	???
C513CO	9.99999	???
C513O2	9.99999	???
C513OOH	9.99999	???
C514O2	9.99999	???
C514OOH	9.99999	???
C59O2	9.99999	???
C59OOH	9.99999	???
C5H8	9.99999	???
CHOC3COCO3	9.99999	???
CHOC3COOOH	9.99999	???
CO13C4CHO	9.99999	???
CO23C4CHO	9.99999	???



KPP name	$k_s$	Reference
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	???
ACCOMECO3	9.99999	???
ACCOMECO3H	9.99999	???
C24O3CCO2H	9.99999	???
C4CO2DBC03	9.99999	???
C4CO2DCO3H	9.99999	???
C5134CO2OH	9.99999	???
C54CO	9.99999	???
C5CO14O2	9.99999	???
C5CO14OH	9.99999	???
C5CO14OOH	9.99999	???
C5DIALCO	9.99999	???
C5DIALO2	9.99999	???
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	???

KPP name	$k_s$	Reference
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	???
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	???

KPP name	$k_s$	Reference
CO235C5CHO	9.99999	???
CO235C6O2	9.99999	???
CO235C6OOH	9.99999	???
BENZENE	9.99999	???
BZBIPERO2	9.99999	???
BZBIPEROOH	9.99999	???
BZEMUCCO	9.99999	???
BZEMUCCO2H	9.99999	???
BZEMUCCO3	9.99999	???
BZEMUCCO3H	9.99999	???
BZEMUCO2	9.99999	???
BZEMUCOOH	9.99999	???
BZEPOXMUC	9.99999	???
BZOBIPEROH	9.99999	???
C5CO2DBCO3	9.99999	???
C5CO2DCO3H	9.99999	???
C5CO2OHCO3	9.99999	???
C5COOHCO3H	9.99999	???
C6125CO	9.99999	???
C615CO2O2	9.99999	???
C615CO2OOH	9.99999	???
C6CO4DB	9.99999	???
C6H5O	9.99999	???
C6H5O2	9.99999	???
C6H5OOH	9.99999	???
CATEC1O	9.99999	???
CATEC1O2	9.99999	???
CATEC1OOH	9.99999	???
CATECHOL	9.99999	???
CPDKETENE	9.99999	???
PBZQCO	9.99999	???
PBZQO2	9.99999	???
PBZQONE	9.99999	???
PBZQOOH	9.99999	???
PHENO2	9.99999	???
PHENOL	9.99999	???
PHENOOH	9.99999	???
C614NO3	9.99999	???
BZBIPERNO3	9.99999	???
BZEMUCNO3	9.99999	???
BZEMUCPAN	9.99999	???
C5CO2DBPAN	9.99999	???
C5CO2OHPAN	9.99999	???
DNPHEN	9.99999	???
DNPHENO2	9.99999	???
DNPHENOOH	9.99999	???
HOC6H4NO2	9.99999	???
NBZQO2	9.99999	???
NBZQOOH	9.99999	???

KPP name	$k_s$	Reference
NCATECHOL	9.99999	???
NCATECO2	9.99999	???
NCATECOOH	9.99999	???
NCPDKETENE	9.99999	???
NDNPHEO2	9.99999	???
NDNPHENOOH	9.99999	???
NNCATECO2	9.99999	???
NNCATECOOH	9.99999	???
NPHEN1O	9.99999	???
NPHEN1O2	9.99999	???
NPHEN1OOH	9.99999	???
NPHENO2	9.99999	???
NPHENOOH	9.99999	???
C235C6CO3H	9.99999	???
C716O2	9.99999	???
C716OOH	9.99999	???
C721O2	9.99999	???
C721OOH	9.99999	???
C722O2	9.99999	???
C722OOH	9.99999	???
CO235C6CHO	9.99999	???
CO235C6CO3	9.99999	???
MCPDKETENE	9.99999	???
ROO6R3O	9.99999	???
ROO6R3O2	9.99999	???
ROO6R5O2	9.99999	???
BENZAL	9.99999	???
C6CO2OHCO3	9.99999	???
C6COOHCO3H	9.99999	???
C6H5CH2O2	9.99999	???
C6H5CH2OOH	9.99999	???
C6H5CO3	9.99999	???
C6H5CO3H	9.99999	???
C7CO4DB	9.99999	???
CRESO2	9.99999	???
CRESOL	9.99999	???
CRESOOH	9.99999	???
MCATEC1O	9.99999	???
MCATEC1O2	9.99999	???
MCATEC1OOH	9.99999	???
MCATECHOL	9.99999	???
OXYL1O2	9.99999	???
OXYL1OOH	9.99999	???
PHCOOH	9.99999	???
PTLQCO	9.99999	???
PTLQO2	9.99999	???
PTLQONE	9.99999	???
PTLQOOH	9.99999	???
TLBIPERO2	9.99999	???

KPP name	$k_s$	Reference
TLBIPEROOH	9.99999	???
TLEMUCCO	9.99999	???
TLEMUCCO2H	9.99999	???
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	???

KPP name	$k_s$	Reference
C86O2	9.99999	???
C86OOH	9.99999	???
C89O2	9.99999	???
C89OOH	9.99999	???
C8BC	9.99999	???
C8BCCO	9.99999	???
C8BCO2	9.99999	???
C8BCOOH	9.99999	???
NORPINIC	9.99999	???
EBENZ	9.99999	???
STYRENE	9.99999	???
STYRENO2	9.99999	???
STYRENOOH	9.99999	???
C721PAN	9.99999	???
C810NO3	9.99999	???
C89NO3	9.99999	???
C8BCNO3	9.99999	???
NSTYRENO2	9.99999	???
NSTYRENOOH	9.99999	???
LXYL	9.99999	???
C811CO3	9.99999	???
C811CO3H	9.99999	???
C85CO3	9.99999	???
C85CO3H	9.99999	???
C89CO2H	9.99999	???
C89CO3	9.99999	???
C89CO3H	9.99999	???
C96O2	9.99999	???
C96OOH	9.99999	???
C97O2	9.99999	???
C97OOH	9.99999	???
C98O2	9.99999	???
C98OOH	9.99999	???
NOPINDCO	9.99999	???
NOPINDO2	9.99999	???
NOPINDOOH	9.99999	???
NOPINONE	9.99999	???
NOPINOO	9.99999	???
NORPINAL	9.99999	???
NORPINENOL	9.99999	???
PINIC	9.99999	???
C811PAN	9.99999	???
C89PAN	9.99999	???
C96NO3	9.99999	???
C9PAN2	9.99999	???
LTMB	9.99999	???
APINAOO	9.99999	???
APINBOO	9.99999	???
APINENE	9.99999	???

KPP name	$k_s$	Reference
BPINAO2	9.99999	???
BPINAOOH	9.99999	???
BPINENE	9.99999	???
C106O2	9.99999	???
C106OOH	9.99999	???
C109CO	9.99999	???
C109O2	9.99999	???
C109OOH	9.99999	???
C96CO3	9.99999	???
CAMPHENE	9.99999	???
CARENE	9.99999	???
MENTHEN6ONE	9.99999	???
OH2MENTHEN6ONE	9.99999	???
OHMENTHEN6ONEO2	9.99999	???
PERPINONIC	9.99999	???
PINAL	9.99999	???
PINALO2	9.99999	???
PINALOOH	9.99999	???
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	???
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	???

KPP name	$k_s$	Reference
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	???
ClNO2	9.99999	???
ClNO3	9.99999	???
ClO	9.99999	???
HCl	9.99999	???
HOCl	9.99999	???
OC1O	9.99999	???
LCHLORINE	9.99999	???
Br	9.99999	???
Br2	9.99999	???
BrCl	9.99999	???
BrNO2	9.99999	???
BrNO3	9.99999	???
BrO	9.99999	???
CF2ClBr	9.99999	???
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	???



KPP name	$k_s$	Reference
IPART	9.99999	???
OIO	9.99999	???
CH3SO2	9.99999	???
CH3SO3	9.99999	???
CH3SO3H	9.99999	???
DMS	9.99999	???
DMSO	9.99999	???
CH3SOOH	9.99999	???
HPMTF	9.99999	???
HOCH2SCO	9.99999	???
H2SO4	9.99999	???
OCS	9.99999	???
S	9.99999	???
SF6	9.99999	???
SH	9.99999	???
SO	9.99999	???
SO2	9.99999	???
SO3	9.99999	???
LSULFUR	9.99999	???
Hg	9.99999	???
HgO	9.99999	???
HgCl	9.99999	???
HgCl2	9.99999	???
HgBr	9.99999	???
HgBr2	9.99999	???
ClHgBr	9.99999	???
BrHgOBr	9.99999	???
ClHgOBr	9.99999	???
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	???

KPP name	$k_s$	Reference
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	???
N2O3	9.99999	???
N2O4	9.99999	???
MGLYOXAC	9.99999	???
BSOV	9.99999	???
BLOV	9.99999	???
MMA	9.99999	???
DMA	9.99999	???
TMA	9.99999	???
MEA	9.99999	???
DEA	9.99999	???
TEA	9.99999	???
HNCO	9.99999	???
H2NCHO	9.99999	???
H2NCOCH2OH	9.99999	???
CH3NHCHO	9.99999	???
DMNCHO	9.99999	???
MMNNO2	9.99999	???
MEANNO2	9.99999	???
MEANNO	9.99999	???
NDMA	9.99999	???
DMNNO2	9.99999	???
NDELA	9.99999	???
DEANNO2	9.99999	???

KPP name	$k_s$	Reference
ONE	9.99999	???
O	9.99999	???
C	9.99999	???
OXL	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.	???
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.	???

KPP name	$\alpha^{\ominus}$	Reference	$\alpha$ -T-dep	Reference
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.	???
C2H5O2	0.1	see notes	0.	???
C2H5OH	0.1	see notes	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.	???
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.	???
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.	???
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.	???
HOOCH2CHO	0.1	see notes	0.	???
HOOCH2CO2H	0.1	see notes	0.	???
HOOCH2CO3	0.1	see notes	0.	???
HOOCH2CO3H	0.1	see notes	0.	???
HYETHO2H	0.1	see notes	0.	???
C2H5NO3	0.1	see notes	0.	???
C2H5O2NO2	0.1	see notes	0.	???
CH3CN	0.1	see notes	0.	???
ETHOHNO3	0.1	see notes	0.	???
NCCH2O2	0.1	see notes	0.	???
NO3CH2CHO	0.1	see notes	0.	???
NO3CH2CO3	0.1	see notes	0.	???
NO3CH2PAN	0.1	see notes	0.	???
PAN	0.1	see notes	0.	???
PHAN	0.1	see notes	0.	???
ACETOL	0.1	see notes	0.	???

KPP name	$\alpha^{\ominus}$	Reference	$\alpha$ -T-dep	Reference
ALCOCH2OOH	0.1	see notes	0.	???
C2H5CHO	0.1	see notes	0.	???
PROPACID	0.1	see notes	0.	???
C2H5CO3	0.1	see notes	0.	???
PERPROACID	0.1	see notes	0.	???
C33CO	0.1	see notes	0.	???
C3H6	0.1	see notes	0.	???
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.	???
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.	???
NROPOL	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.	???
HCOCOHCOC3	0.1	see notes	0.	???
HCOCOHCOC3H	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.	???

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

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



KPP name	$\alpha^\ominus$	Reference	$\alpha$ -T-dep	Reference
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.	???
LHMKABO2	0.1	see notes	0.	???
LHMKABOOH	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.	???
C1ODC2O2C4OD	0.1	see notes	0.	???
C1ODC2O2C4OOH	0.1	see notes	0.	???
C1ODC2OOHC4OD	0.1	see notes	0.	???
C1ODC3O2C4OOH	0.1	see notes	0.	???
C1OOHC2O2C4OD	0.1	see notes	0.	???
C1OOHC2OOHC4OD	0.1	see notes	0.	???
C1OOHC3O2C4OD	0.1	see notes	0.	???
C4MDIAL	0.1	see notes	0.	???
C511O2	0.1	see notes	0.	???
C511OOH	0.1	see notes	0.	???
C512O2	0.1	see notes	0.	???
C512OOH	0.1	see notes	0.	???
C513CO	0.1	see notes	0.	???
C513O2	0.1	see notes	0.	???
C513OOH	0.1	see notes	0.	???
C514O2	0.1	see notes	0.	???
C514OOH	0.1	see notes	0.	???
C59O2	0.1	see notes	0.	???
C59OOH	0.1	see notes	0.	???
C5H8	0.1	see notes	0.	???
CHOC3COCO3	0.1	see notes	0.	???
CHOC3COOOH	0.1	see notes	0.	???
CO13C4CHO	0.1	see notes	0.	???
CO23C4CHO	0.1	see notes	0.	???

KPP name	$\alpha^{\ominus}$	Reference	$\alpha$ -T-dep	Reference
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.	???
C4CO2DBC03	0.1	see notes	0.	???
C4CO2DCO3H	0.1	see notes	0.	???
C5134CO2OH	0.1	see notes	0.	???
C54CO	0.1	see notes	0.	???
C5CO14O2	0.1	see notes	0.	???
C5CO14OH	0.1	see notes	0.	???
C5CO14OOH	0.1	see notes	0.	???
C5DIALCO	0.1	see notes	0.	???
C5DIALO2	0.1	see notes	0.	???
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.	???
MMALANH Y	0.1	see notes	0.	???
MMALANH YO2	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.	???

KPP name	$\alpha^\ominus$	Reference	$\alpha$ -T-dep	Reference
ISOPBNO3	0.1	see notes	0.	???
ISOPDNO3	0.1	see notes	0.	???
NC4CHO	0.1	see notes	0.	???
NC4OHCO3	0.1	see notes	0.	???
NC4OHCO3H	0.1	see notes	0.	???
NC4OHCPAN	0.1	see notes	0.	???
NISOPO2	0.1	see notes	0.	???
NISOPOOH	0.1	see notes	0.	???
NMBOBCO	0.1	see notes	0.	???
ACCOMEPAN	0.1	see notes	0.	???
C4CO2DBPAN	0.1	see notes	0.	???
C5COO2NO2	0.1	see notes	0.	???
NC4MDCO2H	0.1	see notes	0.	???
NTLFUO2	0.1	see notes	0.	???
NTLFUOOH	0.1	see notes	0.	???
LC578O2	0.1	see notes	0.	???
LC578OOH	0.1	see notes	0.	???
LDISOPACO	0.1	see notes	0.	???
LDISOPACO2	0.1	see notes	0.	???
LHC4ACCHO	0.1	see notes	0.	???
LHC4ACCO2H	0.1	see notes	0.	???
LHC4ACCO3	0.1	see notes	0.	???
LHC4ACCO3H	0.1	see notes	0.	???
LIEPOX	0.1	see notes	0.	???
LISOPAB	0.1	see notes	0.	???
LISOPACO	0.1	see notes	0.	???
LISOPACO2	0.1	see notes	0.	???
LISOPACOOH	0.1	see notes	0.	???
LISOPCD	0.1	see notes	0.	???
LISOPEFO	0.1	see notes	0.	???
LISOPEFO2	0.1	see notes	0.	???
LMBOABO2	0.1	see notes	0.	???
LMBOABOOH	0.1	see notes	0.	???
LME3FURANO2	0.1	see notes	0.	???
LZCO3C23DBCOD	0.1	see notes	0.	???
LZCO3HC23DBCOD	0.1	see notes	0.	???
LZCODC23DBCOOH	0.1	see notes	0.	???
LC5PAN1719	0.1	see notes	0.	???
LISOPACNO3	0.1	see notes	0.	???
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.	???

KPP name	$\alpha^{\ominus}$	Reference	$\alpha$ -T-dep	Reference
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.	???
C5CO2OHC O3	0.1	see notes	0.	???
C5COOHCO3H	0.1	see notes	0.	???
C6125CO	0.1	see notes	0.	???
C615CO2O2	0.1	see notes	0.	???
C615CO2OOH	0.1	see notes	0.	???
C6CO4DB	0.1	see notes	0.	???
C6H5O	0.1	see notes	0.	???
C6H5O2	0.1	see notes	0.	???
C6H5OOH	0.1	see notes	0.	???
CATEC1O	0.1	see notes	0.	???
CATEC1O2	0.1	see notes	0.	???
CATEC1OOH	0.1	see notes	0.	???
CATECHOL	0.1	see notes	0.	???
CPDKETENE	0.1	see notes	0.	???
PBZQCO	0.1	see notes	0.	???
PBZQO2	0.1	see notes	0.	???
PBZQONE	0.1	see notes	0.	???
PBZQOOH	0.1	see notes	0.	???
PHENO2	0.1	see notes	0.	???
PHENOL	0.1	see notes	0.	???
PHENOOH	0.1	see notes	0.	???
C614NO3	0.1	see notes	0.	???
BZBIPERNO3	0.1	see notes	0.	???
BZEMUCNO3	0.1	see notes	0.	???
BZEMUCPAN	0.1	see notes	0.	???
C5CO2DBPAN	0.1	see notes	0.	???
C5CO2OHPAN	0.1	see notes	0.	???
DNPHEN	0.1	see notes	0.	???
DNPHENO2	0.1	see notes	0.	???
DNPHENOOH	0.1	see notes	0.	???
HOC6H4NO2	0.1	see notes	0.	???
NBZQO2	0.1	see notes	0.	???
NBZQOOH	0.1	see notes	0.	???

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

KPP name	$\alpha^{\ominus}$	Reference	$\alpha$ -T-dep	Reference
TLBIPEROOH	0.1	see notes	0.	???
TLEMUCCO	0.1	see notes	0.	???
TLEMUCCO2H	0.1	see notes	0.	???
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.	???

KPP name	$\alpha^{\ominus}$	Reference	$\alpha$ -T-dep	Reference
C86O2	0.1	see notes	0.	???
C86OOH	0.1	see notes	0.	???
C89O2	0.1	see notes	0.	???
C89OOH	0.1	see notes	0.	???
C8BC	0.1	see notes	0.	???
C8BCCO	0.1	see notes	0.	???
C8BCO2	0.1	see notes	0.	???
C8BCOOH	0.1	see notes	0.	???
NORPINIC	0.1	see notes	0.	???
EBENZ	0.1	see notes	0.	???
STYRENE	0.1	see notes	0.	???
STYRENO2	0.1	see notes	0.	???
STYRENOOH	0.1	see notes	0.	???
C721PAN	0.1	see notes	0.	???
C810NO3	0.1	see notes	0.	???
C89NO3	0.1	see notes	0.	???
C8BCNO3	0.1	see notes	0.	???
NSTYRENO2	0.1	see notes	0.	???
NSTYRENOOH	0.1	see notes	0.	???
LXYL	0.1	see notes	0.	???
C811CO3	0.1	see notes	0.	???
C811CO3H	0.1	see notes	0.	???
C85CO3	0.1	see notes	0.	???
C85CO3H	0.1	see notes	0.	???
C89CO2H	0.1	see notes	0.	???
C89CO3	0.1	see notes	0.	???
C89CO3H	0.1	see notes	0.	???
C96O2	0.1	see notes	0.	???
C96OOH	0.1	see notes	0.	???
C97O2	0.1	see notes	0.	???
C97OOH	0.1	see notes	0.	???
C98O2	0.1	see notes	0.	???
C98OOH	0.1	see notes	0.	???
NOPINDCO	0.1	see notes	0.	???
NOPINDO2	0.1	see notes	0.	???
NOPINDOOH	0.1	see notes	0.	???
NOPINONE	0.1	see notes	0.	???
NOPINOO	0.1	see notes	0.	???
NORPINAL	0.1	see notes	0.	???
NORPINENOL	0.1	see notes	0.	???
PINIC	0.1	see notes	0.	???
C811PAN	0.1	see notes	0.	???
C89PAN	0.1	see notes	0.	???
C96NO3	0.1	see notes	0.	???
C9PAN2	0.1	see notes	0.	???
LTMB	0.1	see notes	0.	???
APINAOO	0.1	see notes	0.	???
APINBOO	0.1	see notes	0.	???
APINENE	0.1	see notes	0.	???

KPP name	$\alpha^\ominus$	Reference	$\alpha$ -T-dep	Reference
BPINAO2	0.1	see notes	0.	???
BPINAOOH	0.1	see notes	0.	???
BPINENE	0.1	see notes	0.	???
C106O2	0.1	see notes	0.	???
C106OOH	0.1	see notes	0.	???
C109CO	0.1	see notes	0.	???
C109O2	0.1	see notes	0.	???
C109OOH	0.1	see notes	0.	???
C96CO3	0.1	see notes	0.	???
CAMPHENE	0.1	see notes	0.	???
CARENE	0.1	see notes	0.	???
MENTHEN6ONE	0.1	see notes	0.	???
OH2MENTHEN6ONE	0.1	see notes	0.	???
OHMENTHEN6ONEO2	0.1	see notes	0.	???
PERPINONIC	0.1	see notes	0.	???
PINAL	0.1	see notes	0.	???
PINALO2	0.1	see notes	0.	???
PINALOOH	0.1	see notes	0.	???
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.	???
CHF3	0.1	see notes	0.	???
CHF2CF3	0.1	see notes	0.	???
CH3CF3	0.1	see notes	0.	???
CH2F2	0.1	see notes	0.	???
CH3CHF2	0.1	see notes	0.	???
CCl4	0.1	see notes	0.	???
CF2Cl2	0.1	see notes	0.	???
CF2ClCF2Cl	0.1	see notes	0.	???
CF2ClCFCl2	0.1	see notes	0.	???
CF3CF2Cl	0.1	see notes	0.	???
CFC13	0.1	see notes	0.	???



KPP name	$\alpha^{\ominus}$	Reference	$\alpha$ -T-dep	Reference
CH <sub>2</sub> Cl <sub>2</sub>	0.1	see notes	0.	???
CH <sub>2</sub> FCF <sub>3</sub>	0.1	see notes	0.	???
CH <sub>3</sub> CCl <sub>3</sub>	0.1	see notes	0.	???
CH <sub>3</sub> CFCl <sub>2</sub>	0.1	see notes	0.	???
CH <sub>3</sub> Cl	0.1	see notes	0.	???
CHCl <sub>3</sub>	0.1	see notes	0.	???
CHF <sub>2</sub> Cl	0.1	see notes	0.	???
Cl	0.1	see notes	0.	???
Cl <sub>2</sub>	0.038	Hu et al. (1995)	6546.	???
Cl <sub>2</sub> O <sub>2</sub>	0.1	see notes	0.	???
ClNO <sub>2</sub>	0.1	see notes	0.	???
ClNO <sub>3</sub>	0.108	Deiber et al. (2004)	0.	???
ClO	0.1	see notes	0.	???
HCl	0.074	Schweitzer et al. (2000)	3072.	???
HOCl	0.5	see notes	0.	???
OCIO	0.1	see notes	0.	???
LCHLORINE	0.1	see notes	0.	???
Br	0.1	see notes	0.	???
Br <sub>2</sub>	0.038	Hu et al. (1995)	6546.	???
BrCl	0.038	see notes	6546.	???
BrNO <sub>2</sub>	0.1	see notes	0.	???
BrNO <sub>3</sub>	0.063	Deiber et al. (2004)	0.	???
BrO	0.1	see notes	0.	???
CF <sub>2</sub> ClBr	0.1	see notes	0.	???
CF <sub>3</sub> Br	0.1	see notes	0.	???
CH <sub>2</sub> Br <sub>2</sub>	0.1	see notes	0.	???
CH <sub>2</sub> ClBr	0.1	see notes	0.	???
CH <sub>3</sub> Br	0.1	see notes	0.	???
CHBr <sub>3</sub>	0.1	see notes	0.	???
CHCl <sub>2</sub> Br	0.1	see notes	0.	???
CHClBr <sub>2</sub>	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.	???
C <sub>3</sub> H <sub>7</sub> I	0.1	see notes	0.	???
CH <sub>2</sub> ClI	0.1	see notes	0.	???
CH <sub>2</sub> I <sub>2</sub>	0.1	see notes	0.	???
CH <sub>3</sub> I	0.1	see notes	0.	???
HI	0.036	Schweitzer et al. (2000)	4130.	???
HIO <sub>3</sub>	0.01	see notes	0.	???
HOI	0.5	see notes	0.	???
I	0.1	see notes	0.	???
I <sub>2</sub>	0.01	see notes	2000.	???
I <sub>2</sub> O <sub>2</sub>	0.1	see notes	2000.	???
IBr	0.018	see notes	2000.	???
ICl	0.018	Braban et al. (2007)	2000.	???
INO <sub>2</sub>	0.1	see notes	2000.	???
INO <sub>3</sub>	0.1	see notes	2000.	???
IO	0.5	see notes	2000.	???

KPP name	$\alpha^\ominus$	Reference	$\alpha$ -T-dep	Reference
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.	???
CH3SOOH	0.1	Hoffmann et al. (2016)	0.	???
HPMTF	0.1	Hoffmann et al. (2016)	0.	???
HOCH2SCO	0.1	Hoffmann et al. (2016)	0.	???
H2SO4	0.65	Pöschl et al. (1998)	0.	???
OCS	0.1	see notes	0.	???
S	0.1	see notes	0.	???
SF6	0.1	see notes	0.	???
SH	0.1	see notes	0.	???
SO	0.1	see notes	0.	???
SO2	0.11	DeMore et al. (1997)	0.	???
SO3	0.1	see notes	0.	???
LSULFUR	0.1	see notes	0.	???
Hg	0.1	see notes	0.	???
HgO	0.1	see notes	0.	???
HgCl	0.1	see notes	0.	???
HgCl2	0.1	see notes	0.	???
HgBr	0.1	see notes	0.	???
HgBr2	0.1	see notes	0.	???
ClHgBr	0.1	see notes	0.	???
BrHgOBr	0.1	see notes	0.	???
ClHgOBr	0.1	see notes	0.	???
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.	???

KPP name	$\alpha^\ominus$	Reference	$\alpha$ -T-dep	Reference
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.	???
N2O3	0.1	see notes	0.	???
N2O4	0.1	see notes	0.	???
MGLYOXAC	0.1	see notes	0.	???
BSOV	0.1	see notes	0.	???
BLOV	0.1	see notes	0.	???
MMA	0.1	see notes	0.	???
DMA	0.1	see notes	0.	???
TMA	0.1	see notes	0.	???
MEA	0.1	see notes	0.	???
DEA	0.1	see notes	0.	???
TEA	0.1	see notes	0.	???
HNCO	0.1	see notes	0.	???
H2NCHO	0.1	see notes	0.	???
H2NCOCH2OH	0.1	see notes	0.	???
CH3NHCHO	0.1	see notes	0.	???
DMNCHO	0.1	see notes	0.	???
MMNNO2	0.1	see notes	0.	???
MEANNO2	0.1	see notes	0.	???
MEANNO	0.1	see notes	0.	???
NDMA	0.1	see notes	0.	???
DMNNO2	0.1	see notes	0.	???
NDELA	0.1	see notes	0.	???
DEANNO2	0.1	see notes	0.	???

KPP name	$\alpha^\ominus$	Reference	$\alpha$ -T-dep	Reference
ONE	0.1	see notes	0.	???
O	0.1	see notes	0.	???
C	0.1	see notes	0.	???
OXL	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	???
HNO3	15.4	Pandis and Seinfeld (1989)	9.99999	???
HNO4	9.99999	???	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	???

KPP name	$K_a$	Reference	$K_{a2}$	Reference
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	???
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	???
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	???
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	???
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	???
HOCH2CHO	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	???

KPP name	$K_a$	Reference	$K_{a2}$	Reference
ALCOCH2OOH	9.99999	???	9.99999	???
C2H5CHO	9.99999	???	9.99999	???
PROPACID	1.35E-5	Lide (2008)	9.99999	???
C2H5CO3	9.99999	???	9.99999	???
PERPROACID	9.99999	???	9.99999	???
C33CO	9.99999	???	9.99999	???
C3H6	9.99999	???	9.99999	???
C3H8	9.99999	???	9.99999	???
CH3CHCO	9.99999	???	9.99999	???
CH3COCH2O2	9.99999	???	9.99999	???
CH3COCH3	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	???
NROPOL	9.99999	???	9.99999	???
PROPENOL	9.99999	???	9.99999	???
C32OH13CO	9.99999	???	9.99999	???
C3DIALO2	9.99999	???	9.99999	???
C3DIALOOH	9.99999	???	9.99999	???
HCOCOHCOC3	9.99999	???	9.99999	???
HCOCOHCOC3H	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	???

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



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

KPP name	$K_a$	Reference	$K_{a2}$	Reference
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	???
LHMKABO2	9.99999	???	9.99999	???
LHMKABOOH	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	???
C1ODC2O2C4OD	9.99999	???	9.99999	???
C1ODC2O2C4OOH	9.99999	???	9.99999	???
C1ODC2OOHC4OD	9.99999	???	9.99999	???
C1ODC3O2C4OOH	9.99999	???	9.99999	???
C1OOHC2O2C4OD	9.99999	???	9.99999	???
C1OOHC2OOHC4OD	9.99999	???	9.99999	???
C1OOHC3O2C4OD	9.99999	???	9.99999	???
C4MDIAL	9.99999	???	9.99999	???
C511O2	9.99999	???	9.99999	???
C511OOH	9.99999	???	9.99999	???
C512O2	9.99999	???	9.99999	???
C512OOH	9.99999	???	9.99999	???
C513CO	9.99999	???	9.99999	???
C513O2	9.99999	???	9.99999	???
C513OOH	9.99999	???	9.99999	???
C514O2	9.99999	???	9.99999	???
C514OOH	9.99999	???	9.99999	???
C59O2	9.99999	???	9.99999	???
C59OOH	9.99999	???	9.99999	???
C5H8	9.99999	???	9.99999	???
CHOC3COCO3	9.99999	???	9.99999	???
CHOC3COOOH	9.99999	???	9.99999	???
CO13C4CHO	9.99999	???	9.99999	???
CO23C4CHO	9.99999	???	9.99999	???

KPP name	$K_a$	Reference	$K_{a2}$	Reference
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	???
C4CO2DBC03	9.99999	???	9.99999	???
C4CO2DCO3H	9.99999	???	9.99999	???
C5134CO2OH	9.99999	???	9.99999	???
C54CO	9.99999	???	9.99999	???
C5CO14O2	9.99999	???	9.99999	???
C5CO14OH	9.99999	???	9.99999	???
C5CO14OOH	9.99999	???	9.99999	???
C5DIALCO	9.99999	???	9.99999	???
C5DIALO2	9.99999	???	9.99999	???
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	???

KPP name	$K_a$	Reference	$K_{a2}$	Reference
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	???
LZCODC23DBCDOH	9.99999	???	9.99999	???
LC5PAN1719	9.99999	???	9.99999	???
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	???

KPP name	$K_a$	Reference	$K_{a2}$	Reference
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	???
C5CO2DBC03	9.99999	???	9.99999	???
C5CO2DCO3H	9.99999	???	9.99999	???
C5CO2OHCO3	9.99999	???	9.99999	???
C5COOHCO3H	9.99999	???	9.99999	???
C6125CO	9.99999	???	9.99999	???
C615CO2O2	9.99999	???	9.99999	???
C615CO2OOH	9.99999	???	9.99999	???
C6CO4DB	9.99999	???	9.99999	???
C6H5O	9.99999	???	9.99999	???
C6H5O2	9.99999	???	9.99999	???
C6H5OOH	9.99999	???	9.99999	???
CATEC1O	9.99999	???	9.99999	???
CATEC1O2	9.99999	???	9.99999	???
CATEC1OOH	9.99999	???	9.99999	???
CATECHOL	9.99999	???	9.99999	???
CPDKETENE	9.99999	???	9.99999	???
PBZQCO	9.99999	???	9.99999	???
PBZQO2	9.99999	???	9.99999	???
PBZQONE	9.99999	???	9.99999	???
PBZQOOH	9.99999	???	9.99999	???
PHENO2	9.99999	???	9.99999	???
PHENOL	9.99999	???	9.99999	???
PHENOOH	9.99999	???	9.99999	???
C614NO3	9.99999	???	9.99999	???
BZBIPERNO3	9.99999	???	9.99999	???
BZEMUCNO3	9.99999	???	9.99999	???
BZEMUCPAN	9.99999	???	9.99999	???
C5CO2DBPAN	9.99999	???	9.99999	???
C5CO2OHPAN	9.99999	???	9.99999	???
DNPHEN	9.99999	???	9.99999	???
DNPHENO2	9.99999	???	9.99999	???
DNPHENOOH	9.99999	???	9.99999	???
HOC6H4NO2	9.99999	???	9.99999	???
NBZQO2	9.99999	???	9.99999	???
NBZQOOH	9.99999	???	9.99999	???

KPP name	$K_a$	Reference	$K_{a2}$	Reference
NCATECHOL	9.99999	???	9.99999	???
NCATECO2	9.99999	???	9.99999	???
NCATECOOH	9.99999	???	9.99999	???
NCPDKETENE	9.99999	???	9.99999	???
NDNPHEO2	9.99999	???	9.99999	???
NDNPHENOOH	9.99999	???	9.99999	???
NNCATECO2	9.99999	???	9.99999	???
NNCATECOOH	9.99999	???	9.99999	???
NPHEN1O	9.99999	???	9.99999	???
NPHEN1O2	9.99999	???	9.99999	???
NPHEN1OOH	9.99999	???	9.99999	???
NPHENO2	9.99999	???	9.99999	???
NPHENOOH	9.99999	???	9.99999	???
C235C6CO3H	9.99999	???	9.99999	???
C716O2	9.99999	???	9.99999	???
C716OOH	9.99999	???	9.99999	???
C721O2	9.99999	???	9.99999	???
C721OOH	9.99999	???	9.99999	???
C722O2	9.99999	???	9.99999	???
C722OOH	9.99999	???	9.99999	???
CO235C6CHO	9.99999	???	9.99999	???
CO235C6CO3	9.99999	???	9.99999	???
MCPDKETENE	9.99999	???	9.99999	???
ROO6R3O	9.99999	???	9.99999	???
ROO6R3O2	9.99999	???	9.99999	???
ROO6R5O2	9.99999	???	9.99999	???
BENZAL	9.99999	???	9.99999	???
C6CO2OHCO3	9.99999	???	9.99999	???
C6COOHCO3H	9.99999	???	9.99999	???
C6H5CH2O2	9.99999	???	9.99999	???
C6H5CH2OOH	9.99999	???	9.99999	???
C6H5CO3	9.99999	???	9.99999	???
C6H5CO3H	9.99999	???	9.99999	???
C7CO4DB	9.99999	???	9.99999	???
CRESO2	9.99999	???	9.99999	???
CRESOL	9.99999	???	9.99999	???
CRESOOH	9.99999	???	9.99999	???
MCATEC1O	9.99999	???	9.99999	???
MCATEC1O2	9.99999	???	9.99999	???
MCATEC1OOH	9.99999	???	9.99999	???
MCATECHOL	9.99999	???	9.99999	???
OXYL1O2	9.99999	???	9.99999	???
OXYL1OOH	9.99999	???	9.99999	???
PHCOOH	6.25E-5	Lide (2008)	9.99999	???
PTLQCO	9.99999	???	9.99999	???
PTLQO2	9.99999	???	9.99999	???
PTLQONE	9.99999	???	9.99999	???
PTLQOOH	9.99999	???	9.99999	???
TLBIPERO2	9.99999	???	9.99999	???

KPP name	$K_a$	Reference	$K_{a2}$	Reference
TLBIPEROOH	9.99999	???	9.99999	???
TLEMUCCO	9.99999	???	9.99999	???
TLEMUCCO2H	9.99999	???	9.99999	???
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	???

KPP name	$K_a$	Reference	$K_{a2}$	Reference
C86O2	9.99999	???	9.99999	???
C86OOH	9.99999	???	9.99999	???
C89O2	9.99999	???	9.99999	???
C89OOH	9.99999	???	9.99999	???
C8BC	9.99999	???	9.99999	???
C8BCCO	9.99999	???	9.99999	???
C8BCO2	9.99999	???	9.99999	???
C8BCOOH	9.99999	???	9.99999	???
NORPINIC	6.166E-05	see notes	2.291E-06	see notes
EBENZ	9.99999	???	9.99999	???
STYRENE	9.99999	???	9.99999	???
STYRENO2	9.99999	???	9.99999	???
STYRENOOH	9.99999	???	9.99999	???
C721PAN	9.99999	???	9.99999	???
C810NO3	9.99999	???	9.99999	???
C89NO3	9.99999	???	9.99999	???
C8BCNO3	9.99999	???	9.99999	???
NSTYRENO2	9.99999	???	9.99999	???
NSTYRENOOH	9.99999	???	9.99999	???
LXYL	9.99999	???	9.99999	???
C811CO3	9.99999	???	9.99999	???
C811CO3H	9.99999	???	9.99999	???
C85CO3	9.99999	???	9.99999	???
C85CO3H	9.99999	???	9.99999	???
C89CO2H	9.99999	???	9.99999	???
C89CO3	9.99999	???	9.99999	???
C89CO3H	9.99999	???	9.99999	???
C96O2	9.99999	???	9.99999	???
C96OOH	9.99999	???	9.99999	???
C97O2	9.99999	???	9.99999	???
C97OOH	9.99999	???	9.99999	???
C98O2	9.99999	???	9.99999	???
C98OOH	9.99999	???	9.99999	???
NOPINDCO	9.99999	???	9.99999	???
NOPINDO2	9.99999	???	9.99999	???
NOPINDOOH	9.99999	???	9.99999	???
NOPINONE	9.99999	???	9.99999	???
NOPINOO	9.99999	???	9.99999	???
NORPINAL	9.99999	???	9.99999	???
NORPINENOL	9.99999	???	9.99999	???
PINIC	6.166E-05	see notes	2.291E-06	see notes
C811PAN	9.99999	???	9.99999	???
C89PAN	9.99999	???	9.99999	???
C96NO3	9.99999	???	9.99999	???
C9PAN2	9.99999	???	9.99999	???
LTMB	9.99999	???	9.99999	???
APINAOO	9.99999	???	9.99999	???
APINBOO	9.99999	???	9.99999	???
APINENE	9.99999	???	9.99999	???



KPP name	$K_a$	Reference	$K_{a2}$	Reference
BPINAO2	9.99999	???	9.99999	???
BPINAOOH	9.99999	???	9.99999	???
BPINENE	9.99999	???	9.99999	???
C106O2	9.99999	???	9.99999	???
C106OOH	9.99999	???	9.99999	???
C109CO	9.99999	???	9.99999	???
C109O2	9.99999	???	9.99999	???
C109OOH	9.99999	???	9.99999	???
C96CO3	9.99999	???	9.99999	???
CAMPHENE	9.99999	???	9.99999	???
CARENE	9.99999	???	9.99999	???
MENTHEN6ONE	9.99999	???	9.99999	???
OH2MENTHEN6ONE	9.99999	???	9.99999	???
OHMENTHEN6ONEO2	9.99999	???	9.99999	???
PERPINONIC	9.99999	???	9.99999	???
PINAL	9.99999	???	9.99999	???
PINALO2	9.99999	???	9.99999	???
PINALOOH	9.99999	???	9.99999	???
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	???
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	???

KPP name	$K_a$	Reference	$K_{a2}$	Reference
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	???
ClNO2	9.99999	???	9.99999	???
ClNO3	9.99999	???	9.99999	???
ClO	9.99999	???	9.99999	???
HCl	9.99999	???	9.99999	???
HOCl	9.99999	???	9.99999	???
OC1O	9.99999	???	9.99999	???
LCHLORINE	9.99999	???	9.99999	???
Br	9.99999	???	9.99999	???
Br2	9.99999	???	9.99999	???
BrCl	9.99999	???	9.99999	???
BrNO2	9.99999	???	9.99999	???
BrNO3	9.99999	???	9.99999	???
BrO	9.99999	???	9.99999	???
CF2ClBr	9.99999	???	9.99999	???
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	???

KPP name	$K_a$	Reference	$K_{a2}$	Reference
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	???
CH3SOOH	9.99999	???	9.99999	???
HPMTF	9.99999	???	9.99999	???
HOOCH2SCO	9.99999	???	9.99999	???
H2SO4	1E3	see notes	1.023E-2	see notes
OCS	9.99999	???	9.99999	???
S	9.99999	???	9.99999	???
SF6	9.99999	???	9.99999	???
SH	9.99999	???	9.99999	???
SO	9.99999	???	9.99999	???
SO2	1.23E-2	Pandis and Seinfeld (1989)	6.61E-8	Pandis and Seinfeld (1989)
SO3	9.99999	???	9.99999	???
LSULFUR	9.99999	???	9.99999	???
Hg	9.99999	???	9.99999	???
HgO	9.99999	???	9.99999	???
HgCl	9.99999	???	9.99999	???
HgCl2	9.99999	???	9.99999	???
HgBr	9.99999	???	9.99999	???
HgBr2	9.99999	???	9.99999	???
ClHgBr	9.99999	???	9.99999	???
BrHgOBr	9.99999	???	9.99999	???
ClHgOBr	9.99999	???	9.99999	???
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	???

KPP name	$K_a$	Reference	$K_{a2}$	Reference
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	???
N2O3	9.99999	???	9.99999	???
N2O4	9.99999	???	9.99999	???
MGLYOXAC	9.99999	???	9.99999	???
BSOV	9.99999	???	9.99999	???
BLOV	9.99999	???	9.99999	???
MMA	9.99999	???	9.99999	???
DMA	9.99999	???	9.99999	???
TMA	9.99999	???	9.99999	???
MEA	9.99999	???	9.99999	???
DEA	9.99999	???	9.99999	???
TEA	9.99999	???	9.99999	???
HNCO	9.99999	???	9.99999	???
H2NCHO	9.99999	???	9.99999	???
H2NCOCH2OH	9.99999	???	9.99999	???
CH3NHCHO	9.99999	???	9.99999	???
DMNCHO	9.99999	???	9.99999	???
MMNNO2	9.99999	???	9.99999	???
MEANNO2	9.99999	???	9.99999	???
MEANNO	9.99999	???	9.99999	???
NDMA	9.99999	???	9.99999	???
DMNNO2	9.99999	???	9.99999	???
NDELA	9.99999	???	9.99999	???
DEANNO2	9.99999	???	9.99999	???

KPP name	$K_a$	Reference	$K_{a2}$	Reference
ONE	9.99999	???	9.99999	???
O	9.99999	???	9.99999	???
C	9.99999	???	9.99999	???
OXL	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	1.E4	???	1.0	???
HONO	5.05E4	???	0.1	???
HNO3	1.E4	???	1.0	???
HNO4	1.E4	???	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	1.7E6	???	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	???

KPP name	pss	Reference	dryreac	Reference
HOCH2O2NO2	2.	???	0.1	???
NCO	-9.99999	???	-9.99999	???
LCARBON	-9.99999	???	-9.99999	???
C2H2	-9.99999	???	-9.99999	???
C2H4	-9.99999	???	-9.99999	???
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	???
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	???
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	???
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	???
HOOCH2CHO	1.0E6	???	0.1	???
HOOCH2CO2H	4.2E7	???	0.1	???
HOOCH2CO3	-9.99999	???	-9.99999	???
HOOCH2CO3H	1.0E6	???	0.1	???
HYETHO2H	4.0E6	???	0.1	???
C2H5NO3	1.6	???	0.1	???
C2H5O2NO2	1.6	???	0.1	???
CH3CN	5.3	???	0.1	???
ETHOHNO3	3.9E4	???	0.1	???
NCCH2O2	-9.99999	???	-9.99999	???
NO3CH2CHO	1.6	???	0.1	???
NO3CH2CO3	-9.99999	???	-9.99999	???
NO3CH2PAN	2.8	???	0.1	???
PAN	2.8	???	0.1	???
PHAN	4.E4	???	0.1	???
ACETOL	4.7E2	???	-9.99999	???

KPP name	pss	Reference	dryreac	Reference
ALCOCH2OOH	1.0E6	???	0.1	???
C2H5CHO	1.3E1	???	0.1	???
PROPACID	3.E5	???	0.1	???
C2H5CO3	-9.99999	???	-9.99999	???
PERPROACID	1.5E3	???	0.1	???
C33CO	9.0E3	???	0.1	???
C3H6	-9.99999	???	-9.99999	???
C3H8	-9.99999	???	-9.99999	???
CH3CHCO	1.0E6	???	0.1	???
CH3COCH2O2	-9.99999	???	-9.99999	???
CH3COCH3	3.E1	???	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	???
PROPENOL	1.3E1	???	0.1	???
C32OH13CO	9.0E3	???	0.1	???
C3DIALO2	-9.99999	???	-9.99999	???
C3DIALOOH	9.0E3	???	0.1	???
HCOCOHCOC3	-9.99999	???	-9.99999	???
HCOCOHCOC3H	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	???



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

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

KPP name	pss	Reference	dryreac	Reference
C4PAN5	1.0E6	???	0.1	???
IBUTOLBNO3	8.8E1	???	0.1	???
IC4H9NO3	6.4E-3	???	0.1	???
MACRNO3	1.0E6	???	0.1	???
MPAN	3.6	???	0.1	???
MVKNO3	1.0E6	???	0.1	???
PIPN	2.9	???	0.1	???
TC4H9NO3	6.4E-3	???	0.1	???
EPXDLPAN	2.8	???	0.1	???
MALDIALPAN	2.8	???	0.1	???
NBZFUO2	-9.99999	???	-9.99999	???
NBZFUONE	20.	???	0.1	???
NBZFUOOH	2.4E4	???	0.1	???
NC4DCO2H	6.6E7	???	0.1	???
LBUT1ENO2	-9.99999	???	-9.99999	???
LBUT1ENOOH	1.0E6	???	0.1	???
LC4H9O2	-9.99999	???	-9.99999	???
LC4H9OOH	1.1E2	???	0.1	???
LHMVKABO2	-9.99999	???	-9.99999	???
LHMVKABOOH	5.E6	???	-9.99999	???
LMEKO2	-9.99999	???	-9.99999	???
LMEKOOH	1.E3	???	0.1	???
LBUT1ENNO3	8.8E1	???	0.1	???
LC4H9NO3	6.4E-3	???	0.1	???
LMEKNO3	0.86E0	???	0.1	???
C1ODC2O2C4OD	-9.99999	???	-9.99999	???
C1ODC2O2C4OOH	1.0E6	???	0.1	???
C1ODC2OOHC4OD	1.0E6	???	0.1	???
C1ODC3O2C4OOH	1.0E6	???	0.1	???
C1OOHC2O2C4OD	-9.99999	???	-9.99999	???
C1OOHC2OOHC4OD	1.0E6	???	0.1	???
C1OOHC3O2C4OD	-9.99999	???	-9.99999	???
C4MDIAL	1.0E6	???	0.1	???
C511O2	-9.99999	???	-9.99999	???
C511OOH	1.0E6	???	0.1	???
C512O2	-9.99999	???	-9.99999	???
C512OOH	1.0E6	???	0.1	???
C513CO	1.0E6	???	0.1	???
C513O2	-9.99999	???	-9.99999	???
C513OOH	1.0E6	???	0.1	???
C514O2	-9.99999	???	-9.99999	???
C514OOH	1.0E6	???	0.1	???
C59O2	-9.99999	???	-9.99999	???
C59OOH	3.E11	???	0.1	???
C5H8	0.01	???	0.0	???
CHOC3COCO3	-9.99999	???	-9.99999	???
CHOC3COOOH	1.0E6	???	0.1	???
CO13C4CHO	1.0E6	???	0.1	???
CO23C4CHO	1.0E6	???	0.1	???

KPP name	pss	Reference	dryreac	Reference
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	???
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	???
MMALANHY	20.	???	0.1	???
MMALANHYO2	-9.99999	???	0.1	???
MMALNHYOOH	2.0E6	???	0.1	???
TLFUO2	-9.99999	???	-9.99999	???
TLFUONE	3.6E1	???	0.1	???
TLFUOOH	2.0E6	???	0.1	???
C4MCONO3OH	1.0E6	???	0.1	???
C514NO3	1.0E6	???	0.1	???
C5PAN9	1.0E6	???	0.1	???
CHOC3COPAN	1.0E6	???	0.1	???
DB1NO3	1.0E4	???	0.1	???
ISOPBDNO3O2	-9.99999	???	-9.99999	???

KPP name	pss	Reference	dryreac	Reference
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	???
LZCODC23DBCOD	1.0E6	???	0.1	???
LC5PAN1719	6.E4	???	0.1	???
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	???

KPP name	pss	Reference	dryreac	Reference
CO235C5CHO	-9.99999	???	-9.99999	???
CO235C6O2	-9.99999	???	-9.99999	???
CO235C6OOH	1.0E6	???	0.1	???
BENZENE	1.8E-1	???	0.1	???
BZBIPERO2	-9.99999	???	-9.99999	???
BZBIPEROOH	2.0E6	???	0.1	???
BZEMUCCO	9.0E3	???	0.1	???
BZEMUCCO2H	6.6E7	???	0.1	???
BZEMUCCO3	-9.99999	???	-9.99999	???
BZEMUCCO3H	9.0E3	???	0.1	???
BZEMUCO2	-9.99999	???	-9.99999	???
BZEMUCOOH	2.0E6	???	0.1	???
BZEPOXMUC	3.6E5	???	0.1	???
BZOBIPEROH	9.0E3	???	0.1	???
C5CO2DBCO3	-9.99999	???	0.1	???
C5CO2DCO3H	2.0E6	???	0.1	???
C5CO2OHCO3	-9.99999	???	0.1	???
C5COOHCO3H	2.0E6	???	0.1	???
C6125CO	3.7E3	???	0.1	???
C615CO2O2	-9.99999	???	-9.99999	???
C615CO2OOH	3.1E5	???	0.1	???
C6CO4DB	2.0E6	???	0.1	???
C6H5O	2.9E3	???	0.1	???
C6H5O2	-9.99999	???	-9.99999	???
C6H5OOH	2.9E3	???	0.1	???
CATEC1O	4.6E3	???	0.1	???
CATEC1O2	-9.99999	???	-9.99999	???
CATEC1OOH	4.6E3	???	0.1	???
CATECHOL	4.6E3	???	0.1	???
CPDKETENE	-9.99999	???	-9.99999	???
PBZQCO	4.6E3	???	0.1	???
PBZQO2	-9.99999	???	-9.99999	???
PBZQONE	20.	???	0.1	???
PBZQOOH	2.0E6	???	0.1	???
PHENO2	-9.99999	???	-9.99999	???
PHENOL	2.9E3	???	0.1	???
PHENOOH	2.0E6	???	0.1	???
C614NO3	1.0E6	???	0.1	???
BZBIPERNO3	2.9E3	???	0.1	???
BZEMUCNO3	4.0E4	???	0.1	???
BZEMUCPAN	2.8	???	0.1	???
C5CO2DBPAN	3.7E3	???	0.1	???
C5CO2OHPAN	4.0E4	???	0.1	???
DNPHEN	2.3E3	???	0.1	???
DNPHENO2	-9.99999	???	-9.99999	???
DNPHENOOH	2.3E3	???	0.1	???
HOC6H4NO2	70.	???	0.1	???
NBZQO2	-9.99999	???	-9.99999	???
NBZQOOH	2.4E4	???	0.1	???

KPP name	pss	Reference	dryreac	Reference
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	???

KPP name	pss	Reference	dryreac	Reference
TLBIPEROOH	2.0E6	???	0.1	???
TLEMUCCO	3.1E5	???	0.1	???
TLEMUCCO2H	7.4E5	???	0.1	???
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	???



KPP name	pss	Reference	dryreac	Reference
C86O2	-9.99999	???	-9.99999	???
C86OOH	1.0E6	???	0.1	???
C89O2	-9.99999	???	-9.99999	???
C89OOH	1.0E6	???	0.1	???
C8BC	1.0E6	???	0.1	???
C8BCCO	1.0E6	???	0.1	???
C8BCO2	-9.99999	???	-9.99999	???
C8BCOOH	1.0E6	???	0.1	???
NORPINIC	4E13	???	0.1	???
EBENZ	1.2E-1	???	0.1	???
STYRENE	3.7E-1	???	0.1	???
STYRENO2	-9.99999	???	-9.99999	???
STYRENOOH	70.	???	0.1	???
C721PAN	1.0E6	???	0.1	???
C810NO3	1.0E6	???	0.1	???
C89NO3	1.0E6	???	0.1	???
C8BCNO3	1.0E6	???	0.1	???
NSTYRENO2	-9.99999	???	-9.99999	???
NSTYRENOOH	70.	???	0.1	???
LXYL	1.7E-1	???	0.1	???
C811CO3	-9.99999	???	-9.99999	???
C811CO3H	1.0E6	???	0.1	???
C85CO3	-9.99999	???	-9.99999	???
C85CO3H	1.0E6	???	0.1	???
C89CO2H	6.6E7	???	0.1	???
C89CO3	-9.99999	???	-9.99999	???
C89CO3H	1.0E6	???	0.1	???
C96O2	-9.99999	???	-9.99999	???
C96OOH	1.0E6	???	0.1	???
C97O2	-9.99999	???	-9.99999	???
C97OOH	1.0E6	???	0.1	???
C98O2	-9.99999	???	-9.99999	???
C98OOH	1.0E6	???	0.1	???
NOPINDCO	1.0E6	???	0.1	???
NOPINDO2	-9.99999	???	-9.99999	???
NOPINDOOH	1.0E6	???	0.1	???
NOPINONE	1.0E6	???	0.1	???
NOPINOO	1.0E6	???	0.1	???
NORPINAL	1.0E6	???	0.1	???
NORPINENOL	1.0E6	???	0.1	???
PINIC	4E13	???	0.1	???
C811PAN	1.0E6	???	0.1	???
C89PAN	1.0E6	???	0.1	???
C96NO3	1.0E6	???	0.1	???
C9PAN2	1.0E6	???	0.1	???
LTMB	2.2E-1	???	0.1	???
APINAOO	-9.99999	???	-9.99999	???
APINBOO	-9.99999	???	-9.99999	???
APINENE	1.0E1	???	0.1	???

KPP name	pss	Reference	dryreac	Reference
BPINAO2	-9.99999	???	-9.99999	???
BPINAOOH	1.0E6	???	0.1	???
BPINENE	1.0E1	???	0.1	???
C106O2	-9.99999	???	-9.99999	???
C106OOH	1.0E6	???	0.1	???
C109CO	1.0E6	???	0.1	???
C109O2	-9.99999	???	-9.99999	???
C109OOH	1.0E6	???	0.1	???
C96CO3	-9.99999	???	-9.99999	???
CAMPHENE	1.0E1	???	0.1	???
CARENE	1.0E1	???	0.1	???
MENTHEN6ONE	1.0E6	???	0.1	???
OH2MENTHEN6ONE	1.0E6	???	0.1	???
OHMENTHEN6ONEO2	-9.99999	???	-9.99999	???
PERPINONIC	7.4E5	???	0.1	???
PINAL	1.0E6	???	0.1	???
PINALO2	-9.99999	???	-9.99999	???
PINALOOH	1.0E6	???	0.1	???
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	???
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	???

KPP name	pss	Reference	dryreac	Reference
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	???
ClNO2	-9.99999	???	-9.99999	???
ClNO3	1.E30	???	1.0	???
ClO	-9.99999	???	-9.99999	???
HCl	1E14	???	1.0	???
HOCl	6.7E2	???	1.0	???
OC1O	-9.99999	???	-9.99999	???
LCHLORINE	-9.99999	???	-9.99999	???
Br	-9.99999	???	-9.99999	???
Br2	0.7	???	0.1	???
BrCl	1.0	???	0.1	???
BrNO2	-9.99999	???	-9.99999	???
BrNO3	1.0E30	???	1.0	???
BrO	-9.99999	???	-9.99999	???
CF2ClBr	-9.99999	???	-9.99999	???
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	???

KPP name	pss	Reference	dryreac	Reference
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	???
CH3SOOH	0.0	???	0.0	???
HPMTF	0.0	???	0.0	???
HOCH2SCO	0.0	???	0.0	???
H2SO4	1.3E15	???	1.0	???
OCS	-9.99999	???	-9.99999	???
S	-9.99999	???	-9.99999	???
SF6	-9.99999	???	-9.99999	???
SH	-9.99999	???	-9.99999	???
SO	-9.99999	???	-9.99999	???
SO2	2.45E5	???	0.0	???
SO3	-9.99999	???	-9.99999	???
LSULFUR	-9.99999	???	-9.99999	???
Hg	0.13	???	0.1	???
HgO	2.4E7	???	1.0	???
HgCl	2.4E7	???	1.0	???
HgCl2	2.4E7	???	1.0	???
HgBr	2.4E7	???	1.0	???
HgBr2	2.4E7	???	1.0	???
ClHgBr	2.4E7	???	1.0	???
BrHgOBr	2.4E7	???	1.0	???
ClHgOBr	2.4E7	???	1.0	???
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	???

KPP name	pss	Reference	dryreac	Reference
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	???
N2O3	-9.99999	???	-9.99999	???
N2O4	-9.99999	???	-9.99999	???
MGLYOXAC	-9.99999	???	-9.99999	???
BSOV	-9.99999	???	-9.99999	???
BLOV	-9.99999	???	-9.99999	???
MMA	-9.99999	???	-9.99999	???
DMA	-9.99999	???	-9.99999	???
TMA	-9.99999	???	-9.99999	???
MEA	-9.99999	???	-9.99999	???
DEA	-9.99999	???	-9.99999	???
TEA	-9.99999	???	-9.99999	???
HNCO	-9.99999	???	-9.99999	???
H2NCHO	-9.99999	???	-9.99999	???
H2NCOCH2OH	-9.99999	???	-9.99999	???
CH3NHCHO	-9.99999	???	-9.99999	???
DMNCHO	-9.99999	???	-9.99999	???
MMNNO2	-9.99999	???	-9.99999	???
MEANNO2	-9.99999	???	-9.99999	???
MEANNO	-9.99999	???	-9.99999	???
NDMA	-9.99999	???	-9.99999	???
DMNNO2	-9.99999	???	-9.99999	???
NDELA	-9.99999	???	-9.99999	???
DEANNO2	-9.99999	???	-9.99999	???

KPP name	pss	Reference	dryreac	Reference
ONE	-9.99999	???	-9.99999	???
O	-9.99999	???	-9.99999	???
C	-9.99999	???	-9.99999	???
OXL	3.26E6	???	0.1	???

## 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.
- **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  $\alpha(\text{Cl}_2)$ .
- **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.

## References

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