Global cycling of tropospheric chlorine

Stratosphere
3.8(2)

$ClNO_3$
1.2 [0.23]

NO_2 3.8(3)

hv 1.5(2)

ClO*
0.28 [0.05]

$ClNO_3$ Cl^- 1.3(2)

Cl_2
1.3 [0.12]

Cl^- 6.5(2) $ClNO_2$

Cl^- 4.0(2) OH

OH/HO_2
8.5(3)

BrO
3.0(2)

$HOCl/Cl_2$
2.4(3)

Br^-
5.8(2)

hv 7.6(2)

OH/NO/
BrO/IO etc.
3.1(4)

O_3/HO_2 etc.
4.1(4)

hv/OH 1.3(3)

Cl^-
2.4(2)

BrCl
1.2 [0.23]

hv 9.5(3)

Cl
2.2(-4) [4(-5)]

hv 1.1(4)

HOCl
3.5 [0.68]

HOBr Cl^- 8.6(3)

$ClNO_3$+OH/H_2O
2.4(3)

hv 7.1(2)

OH
9.7(3)

CH_4 etc.
2.5(4)

hv 1.5(3)

HOI
$IONO_x$ Cl^- 6.4(2)
ClO+IO 8.0(1)

ICl
0.22 [0.04]

HCl
306 [60]

$ClNO_2$
3.0 [0.57]

Cl^- 1.8(3) N_2O_5

Cl_2 3.3(2)

Acid displacement
5.2 (4)

Alkalinity
3.8 (3)

Heterogeneous
1.2(4)

Cl^-
1790 [344]

Deposition
7.1(4)

Anthropogenic
6.7(3)

Open fire
7.6(3)

$CHCl_3$ CH_2Cl_2
CH_3Cl CH_2ICl
3.3(3)

Sea salt
1.78(6)

Deposition
1.72(6)