

## IUPAC Task Group on Atmospheric Chemical Kinetic Data Evaluation – Data Sheet V.A4.10 HNDR10

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Data sheet last evaluated: April 2008; last change in preferred values: April 2008.

### HBr + NAT

#### Experimental data

<i>Parameter</i>	Temp./K	Reference	Technique/ Comments
<i>Experimental uptake coefficients:</i>			
$\gamma, \gamma_0$			
$\gamma_{ss} > 0.3$	201	Hanson and Ravishankara, 1992	CWFT-CIMS (a)
<i>Partition coefficients: <math>K(cm)</math></i>			
No reversible adsorption			

#### Comments

- (a) HNO<sub>3</sub> deposited on ice condensed from the vapor phase onto the cold flow tube.  $\gamma$  corrected for gas diffusion using estimated diffusion coefficients. Pressure = 0.6 mbar He. Rapid uptake observed with no signs of saturation. Suggest formation of new fluid binary phase HBr-H<sub>2</sub>O

#### Preferred Values

<b>Parameter</b>	<b>Value</b>	<b>T/K</b>
$\alpha_s$	>0.3	190 - 200
<i>Reliability</i>		
$\Delta \log (\alpha_s)$	$\pm 0.3$	190 - 200

#### Comments on Preferred Values

There appears to be only one experimental study of HBr interaction with specifically prepared HNO<sub>3</sub>-hydrate surfaces at temperatures and concentrations corresponding to hydrate thermodynamically stability regions. Under these conditions uptake is rapid, continuous and irreversible.

#### References

Hanson, D. R. and Ravishankara, A.R.: J. Phys. Chem. 96, 9441 (1992).