

## Uncertainty codes

The uncertainty codes used by the HITRAN database are described in Table 5 of the HITRAN2004 paper [1], which is reproduced here. There are two types of uncertainty code corresponding to absolute uncertainty in cm<sup>-1</sup> (used for the line position and air pressure-induced line shift parameters) and relative uncertainty in % (used for the line intensity and broadening parameters).

$\nu$ ,  $S$ ,  $\gamma(\text{air})$  or

$\nu$ ,  $S$ ,  $\gamma(\text{air})$ ,  $\gamma(\text{self})$ ,  $n(\text{air})(T\text{-dep. exponent})$ ,  $\delta(\text{air})(\text{pressure shift})$

Code	Absolute Uncertainty range	Code	Relative Uncertainty range
0	$\geq 1$ or Unreported	0	Unreported or unavailable
1	$\geq 0.1$ and $< 1$	1	Default or constant
2	$\geq 0.01$ and $< 0.1$	2	Average or estimate
3	$\geq 0.001$ and $< 0.01$	3	$\geq 20\%$
4	$\geq 0.0001$ and $< 0.001$	4	$\geq 10\%$ and $< 20\%$
5	$\geq 0.00001$ and $< 0.0001$	5	$\geq 5\%$ and $< 10\%$
6	$\geq 0.000001$ and $< 0.00001$	6	$\geq 2\%$ and $< 5\%$
7	$\geq 0.0000001$ and $< 0.000001$	7	$\geq 1\%$ and $< 2\%$
8	$\geq 0.00000001$ and $< 0.0000001$	8	$< 1\%$
9	$\geq 0.000000001$ and $< 0.00000001$		

## References

[1] L. S. Rothman, et al., "The HITRAN 2004 molecular spectroscopic database", J. Quant. Spectrosc. Radiat. Transfer 96, 139-204 (2005). [[link to article](#)] [[ADS](#)]