

# **20 TIMES**

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**September 21 2000**

**Recent and preliminary  
pH test data from across  
the nation indicates that  
the atmospheric  
chemistry has been  
altered by a factor of 20  
with respect to  
hydroxide ion  
concentration, relative to  
baseline values  
established from the  
years of 1990 -1999, as  
well as individually with  
respect to 1999 data.**

**This is a remarkable  
change in a relatively  
short period of time, and  
has major implications  
for both the chemistry  
and biology of the nation  
and the globe.**

**Human biology is  
sensitive to pH blood  
changes as low as 0.1  
(approximately 25%  
change in the H<sup>+</sup>  
concentration); the  
current data indicates an  
average change in the  
pH of rainwaters that  
are being analyzed**

across the country at 1.30. It is important that more citizens become immediately involved in this testing process, as it is relatively inexpensive and simple to accomplish. Significant variations, such as those being currently observed, demonstrate the need for immediate formal investigation into the atmospheric chemistry changes associated with aircraft aerosol operations since the beginning of 1999.

The preliminary data as of this date indicates a 20 times increase in the number of hydroxide ions in the atmosphere, this change apparently occurring primarily within the last year. The following statement from the Nobel Prize winner of Chemistry in 1995 is repeated to emphasize the significance of this topic and the need for public testing and disclosure:

"The single most

important chemical species in clouds and precipitation is the hydrogen ion ( $H^+$ ), whose concentration can be indicated by specifying the solution's acidity, or pH value. You may recall from high school chemistry that the pH scale ranges from 0 to 14, low pH values indicating high acidity (high concentrations of  $H^+$ ) and high pH values indicating high alkalinity (low concentrations of  $H^+$ )"

from Atmosphere, Climate, and Change by Graedel and Crutzen, Scientific American, 1997.

**Please also refer to:**

[A Case For Testing pH Test Alert](#)  
[ph Test Results](#)

**Appendix:**

**The above calculation is based upon the following**

**definition of pH:**

$$\text{pH} = \log (1/\text{H}^+)$$

**Therefore, for two independent pH readings:**

$$\text{pH}_2 - \text{pH}_1 = \log (1/\text{H}_2^+) - \log (1/\text{H}_1^+)$$

$$\text{pH}_2 - \text{pH}_1 = \log \left( \frac{1/\text{H}_2^+}{1/\text{H}_1^+} \right)$$

$$\text{pH}_2 - \text{pH}_1 = \log (\text{H}_1^+ / \text{H}_2^+)$$

**or**

$$10^{(\text{pH}_2 - \text{pH}_1)} = \text{H}_1^+ / \text{H}_2^+$$

**and with the average difference in pH being reported as +1.30 as of this date with respect to 1999:**

$$10^{1.30} = 20.0$$

**and note that POH is**

similarly defined as:

$\text{pOH} = \log (1 / \text{OH}^-)$   
leading to similar  
results for the analysis  
of hydroxide ions.

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as circumstances or  
conditions require.

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