

# **INORGANIC™** Expiration Facts You Should Know VENTURES

By Christopher Gaines

Expiration dating has fallen prey to the most recent set of marketing gimmicks used to mislead the customer. Questionable methods are used to spark business opportunities for self-serving standards manufacturers who conceal the reality of their products' expiration dates behind a shroud of confusing terms.



## Half-truths

Misleading promotions include '*18 Month Stability Dating*', '*18 Month Accuracy and Stability Guarantee*', and '*21 Month Shelf Life (unopened)*', to name a few.

- **18 Month Stability Dating... ?**

'Stability Dating' is a promotional term. If they mean *chemical stability*, then this is hardly a selling point. Most standards are chemically stable indefinitely. This wordplay is designed to confuse the customer's understanding of shelf life vs. expiration date -- two very separate entities.

- **18 Month Accuracy and Stability Guarantee... ?**

How can a manufacturer legally guarantee the integrity of a standard once it leaves their facility? After the customer receives it, the standard inevitably becomes exposed to operational "human" error and transpiration loss. Any guarantee should be clearly spelled out for the customer.

- **21 Month Shelf Life (unopened)... ?**

Most standards have a shelf life of at least 24 months -- larger bottles can last up to 10 years or longer. The problem arises in that the manufacturer's research (if any was conducted at all) has been done at their own facility under controlled conditions. Once the bottle leaves a controlled environment, how can the manufacturer assume that it will be received and stored under the *same* laboratory conditions?



## The Facts

**Expiration Date** is the recommended amount of time that a standard should remain in use in a laboratory setting *after* it has been opened. Inevitably, something will go wrong with the standard due to transpiration, cross-contamination, or human error. Most federal and state regulatory agencies recommend expiration dates no longer than 1 year. Some require as little as 6 months.

**Expiration dates of trace metals standards are dependent upon:**

- **Chemical stability** of the standard.
- **Transpiration losses** of the standard.
- **Human error** while using the standard.

**Chemical stability** is typically not a factor. After a year, your standard is not going to explode or precipitate out of solution. Under the right conditions, most standards are good indefinitely.

**Transpiration losses** cannot be prevented. All solutions transpire -- the longer the solution exists, the more concentrated it becomes over time.

**Human error** is really what an expiration is trying to keep to a minimum. It is **uncontrollable and inevitable**. A 1 year expiration date provides a standardized window of time in which the customer can safely assume that, with proper care, the standard will remain accurate. However, it remains an *assumption* -- there are no guarantees that the standard will remain accurate for the duration of that year.

## Expiration Ethics

Expiration dates cannot be guaranteed or arbitrarily extended. To do so implies that the manufacturer can take legal responsibility for a customer's inaccurate results during that post-year extension. These are **promises that no manufacturer can keep**. Even the one-year recommendation is an arbitrary number, supported by NIST. Extending an expiration date beyond that year only increases the likelihood that something will spoil your standard and, in turn, taint your results.

As a manufacturer of standards, we are part of a scientific group in which dangerous marketing tactics should not be permitted. These ploys undermine the integrity of our industry -- an industry in which a single mistake can cause a chain of errors through several high-tech fields. It is irresponsible to market standards by half-



truths, hiding negative results and confusing the numbers. Protect your interests as a consumer and remember:  
**If it sounds too good to be true, it probably is.**

### **Safe Expiration Extensions**

Inorganic Ventures has developed a purchasing program in which standards receive an extended expiration date in such a way that integrity of the solution is not compromised. Contact us for details. ■

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