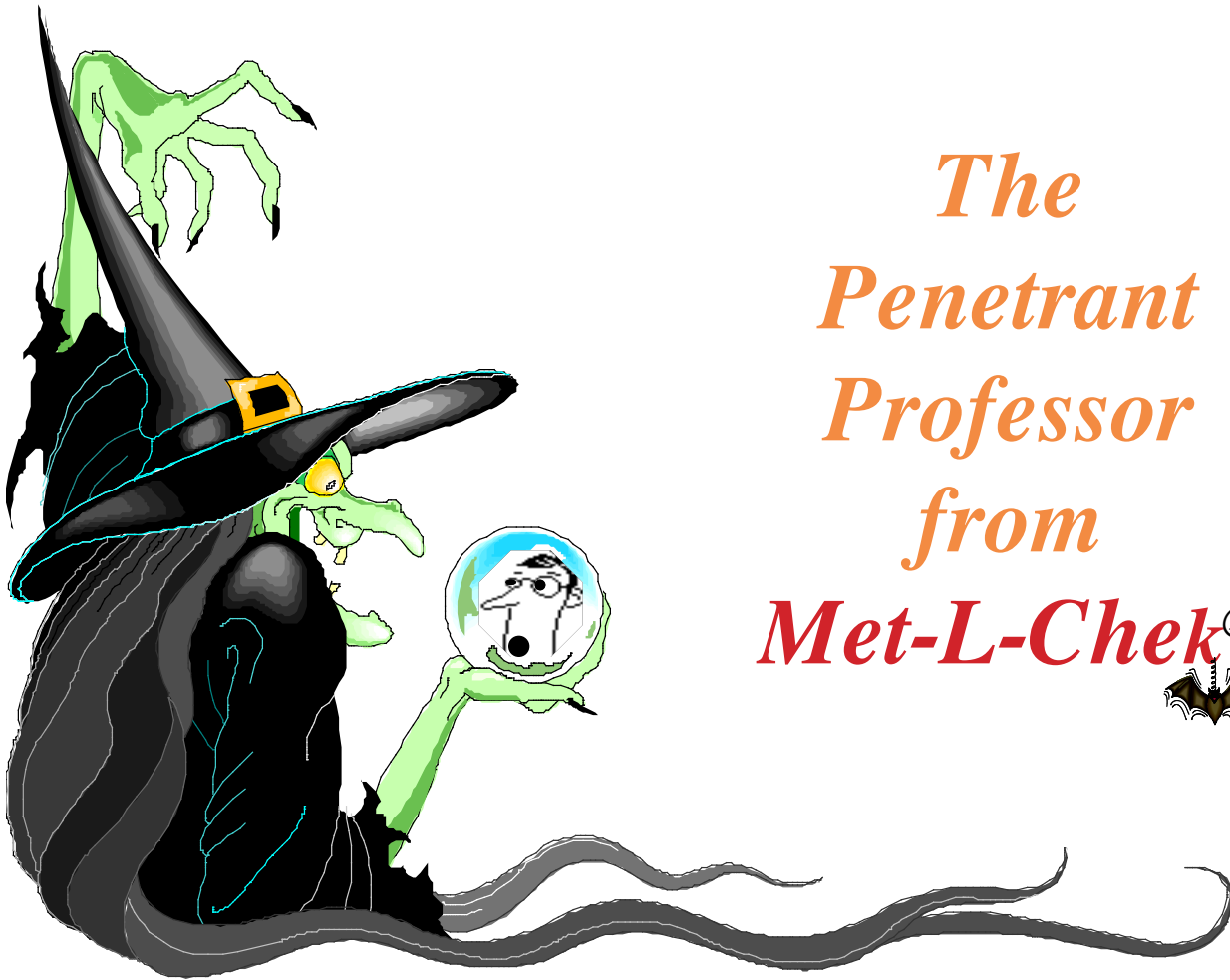




# The Penetrant Professor from Met-L-Chek®



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## Repeat Repeat Repeat

Astute readers of the PENETRANT PROFESSOR probably note that from time to time we repeat a discussion on a subject. Over the almost 20 years that this newsletter has been published, we have found that the same questions come up again and again. This might appear baffling, but it happens, and we think that there are several plausible reasons. New people enter the field of penetrant testing – the subjects are not what one keeps handy in one's mind – people forget what has been published in the past – an inspector becomes a first time subscriber to the newsletter.

These are all possibilities. But for whatever reason, when we get the same questions, we reply with the same answers.

This month's issue discusses **shelf life** and **tank life**. Our experience is that these two subjects are sometimes confused by users, and it is important that one understands what each of them is and how they impact on the inspection process.



## Shelf Life

Shelf life is a term that can be defined differently by different manufacturers, and we explain what is the practice for Met-L-Chek Company. This information is also contained in the literature on the **Met-L-Chek®** web site. Met-L-Chek Company defines shelf life as the period of storage time, at ambient (**15.5°C-37.7°C / 60°F-100°F**) conditions, during which an inspection material will retain its functionality in its original closed container. The shelf life of **most** Met-L-Chek Company inspection penetrant materials is **five (5) years** from date of batch approval.

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This is the Met-L-Chek Company warranty period. The shelf life of aerosol inspection materials is also 5 years provided that the aerosol propellant has not escaped and the can still sprays.

This shelf life period is exceeded by most materials and various studies have demonstrated this to be true. The shelf life period is provided only as a storage guide as it relates to warranty. Older materials performance may be verified through the Met-L-Chek Company **Pen-Chek®** recertification program.

The shelf life of an individual material is shown on the material certification provided with each purchase. Material certifications are available for each batch of material and identified by a specific batch number.

Met-L-Chek Company batch numbers since 2005 consist of four numbers, a letter, and two numbers. The batch is the first set of numbers. The letter is for the month ( **A- January, B- February, C- March, D- April, E- May, F- June, G- July, H- August, J- September, K- October, L- November, and M- December**) and the last two numbers are for the year. This makes it easy for the user to know the age of the product in storage.



### *Tank Life*

Once the products are removed from their original container, shelf life no longer applies. When a material is in a tank or other container where it is used, the term “tank life” applies.

Continued usability of materials in tanks or other containers is the reason for the periodic in-use checks required by **ASTM E-1417** and other specifications. These tests are designed to monitor tank life of the materials. Because of the requirements of **AMS-2644**, to which penetrants must be qualified, and the specified batch testing, users are ensure of batch to batch consistent materials. This along with the periodic in-use material checks, allows users to add a batch of a given material to a tank or container with the same material but of a different batch number, extending tank life. This makes good economic and environmental sense.

Maintaining tank life requires material batch to batch consistency, good penetrant line house keeping, process control, and monthly material checks. Met-L-Chek Company provides batch to batch consistent materials approved to **AMS-2644**. The Met-L-Chek Company **Pen-Chek®** recertification program conforms to the requirements of **ASTM E-1417** for in-use materials.

Let’s take a look at a few real world experiences and see what applies.

You have a small 20 gallon penetrant tank that you keep about half full. You buy a 55 gallon drum of penetrant because drums are a better buy than smaller size containers of penetrant. It has a different batch number than the material you have in your tank. What to do now that your tank is half of your normal volume? Dump the tank and clean or add the new material? Same Met-L-Chek product, different batch number. You have the product certification, you run a well maintained line, you do monthly checks.... you add the new penetrant and record the batch number. Your process control checks and monthly checks will ensure your continued tank life. The material in the closed original container in storage is under shelf life, it’s not in use. Now, suppose the material in storage has passed it’s shelf life period. You take a sample send it to Met-L-Chek, and it is retested to verify continued conformance to the original material and the shelf life period is extended. There are penetrant tanks that have products in them that are five or more years old. The monthly tests show that the material is satisfactory to use, and there is no reason to discard the material and to replace it with fresh product.

The distinction between **Shelf life** and **Tank life** is important to make.

**PENETRANT PROFESSOR**  
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To receive it, call or  
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