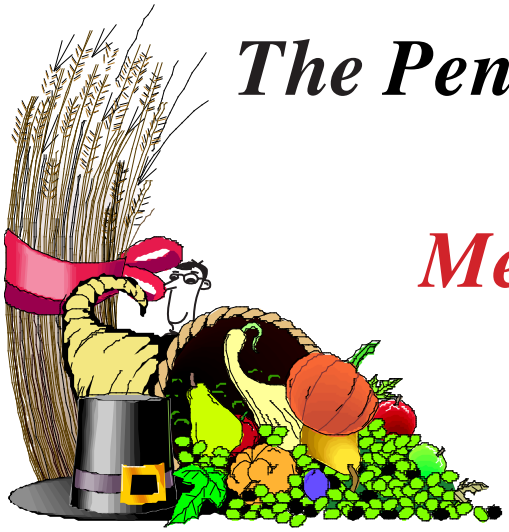
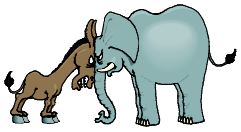


The Penetrant Professor from Met-L-Chek®

November 2014 Key Dates

Nov. 2 Day Light Savings?? "Fall Back"

Nov. 4 Election Day "Go Vote"



Nov. 11 Veteran's Day "Honor those who have served us all"

Nov. 27 Thanksgiving " Stop and think about just how blest you are, give thanks, and then help some one less fortunate. You will feel so good.

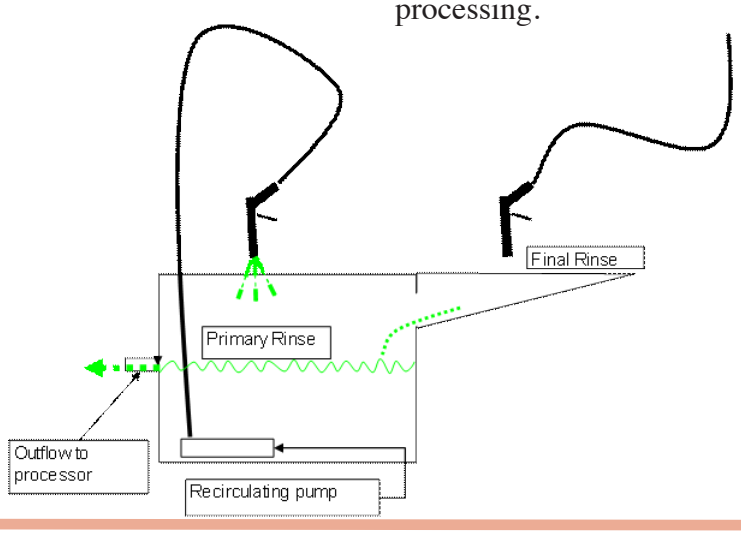
Insight From One With Green Hands

We are always glad to hear from one of our readers who is elbow deep in penetrant inspection experience. Jim Johnson has supplied us with some noteworthy comments and suggestions based on the October 2014 Penetrant Professor on penetrant waste water treatment.

In the issue we discussed recycling the waste water after treatment to reduce water consumption. We had indicated that the cleaned water would be pumped back to the wash guns. Jim, being a hands on practitioner brought up an important point regarding this. His email stated "Just a reminder to adjust the pressure and volume of rinse water to the minimum it takes to assure process requirements are met. I have not seen a code that gives a minimum pressure, only a max. (Typically 40 psig) In my experience 10 lb or less will get the rinse done (lot less splashing too)".

Jim went on describing an approach he has used to reduce water consumption, that appears to make good sense. "In higher volume situations, if process allows, use two-rinses and recycle the water. Final rinse with clean water. Primary rinse with recycled primary rinse water. Use the waste from the final rinse capture system to replenish the primary rinse. See Sketch below. The end result is the same with a fraction of the waste. Actually all you need is a clean water rinse into the same tank. Oh, it's better to use an external circulating pump and keep the electricity out of the water."

Thanks to Jim for his practical suggestions. We encourage others to share their insights to penetrant processing.



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Old Penetrant Professor Article May Be New News for Some

In our 4th Anniversary issue of the Penetrant Professor, from the last century, we had an article regarding penetrant material contaminates being reported in % or ppm. This is something that we continue to get questions on so we are recycling the information from that old article.

% vs ppm

Specifications concerning impurities in penetrant inspection materials are sometimes expressed in terms of percent (%), and sometimes in terms of parts per million (ppm). There are even instances where a company specification lists the limits of some elements in terms of percent, and other elements in terms of ppm. For people familiar with working with numbers, there is little or no problem in converting from percent to ppm, or vice versa. However, it is difficult for some people, and sometimes an auditor will insist that the certification be expressed exactly as the specification states.

Percent is a Latin term which means "per hundred", and the percent of anything is the number of parts per hundred. If you have one hundred (100) marbles, and all are white except one is black, the batch of marbles consists of 99 percent white, and one (1) percent black. If you think about percent being per hundred, it becomes pretty clear about how to convert this to parts per million. For example, if the batch of marbles contains one black marble per hundred, it would contain ten black marbles per thousand, 100 black per ten thousand, 1000 black per one hundred thousand, and 10,000 black marbles per million or 10,000 ppm. The easy way to make the conversion is to multiply the percent (%) number by 10,000 to get parts per million (ppm). To do it the other way around, if you have parts per million and want percent, just divide ppm number by 10,000.

A penetrant contains 150 ppm of chloride. What percent is this? 150 divided by 10,000 equals 0.015%.

A specification requires that a penetrant have less than 0.1% sulfur. How many ppm is this? 0.1 times 10,000 equals 1000 ppm.

Now, no matter how the analysis values are reported you can easily convert the results to the desired presentation method.

PENETRANT PROFESSOR
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To receive it, call or E-mail Lisa Zugarazo.

2014

Conversion Guide

%	ppm
0.001	10
0.005	50
0.010	100
0.050	500
0.100	1000
0.500	5000
1.000	10000

ppm	%
10	0.001
50	0.005
100	0.010
500	0.050
1000	0.100
5000	0.500
10000	1.000

The Penetrant Professor