Understanding your ISO 16232 report: Standardized Count

As you look over your ISO 16232 based cleanliness test report you notice it has a column called "Particle Count" and another called "Standardized Count." You are moderately confident the "Particle Count" column is reporting the number of particles counted in various reported size classes on the filter patch/membrane you had particle counted. However, you aren't so certain what that "Standardized Count" column is all about particularly when you notice all the numbers in that column are different from the numbers in the "Particle Count" column. So what is "Standardized Count" and why is it important?

Take a quick look and see if it is an A, V, or N which precedes the first parenthesis in your Limits.

- CCC = A(C-E15/F-G10/H-I4/J-K00)
- CCC = V(C-E15/F-G10/H-I4/J-K00)
- CCC = N(C-E32000/F-G1000/H-I16/J-K0)

That letter tells you if you are **"Reporting to A, V, or N." (click to view article on topic)**

No matter if your parts surface area is 1,776cm^2 or 6.771cm^2 if you are reporting to A your Standardized Count will be showing how many particles there would be in the Standard Area of 1,000cm^2. The Standardized Count thus allows you to easily compare cleanliness of parts which are widely disparate in tested surface area.

If you are reporting to V then your Standardized Count will be displaying how many particles there would be in a Standard Volume of 100cm^3. Quite often when particle counting fluids exactly 100ml (100cm^3) is tested but on occasion the sample is a bit shy. If, for example, you only have a 79ml sample when you report to V the

Standardized Count will show how many particles there would be in $100cm^3$ (100ml) which makes it easy to compare all your fluid test results reported to the Standard Volume of $100cm^3$ (100ml.) Occasionally part volume will be used rather than part surface area – in those rare cases the Standardized Count would reflect the particles per $100cm^3$ of part volume.

The Standardized Count reported to N is reporting the number of particles per part in the various size classes. A test batch size of 30 parts may, for example, be required to ensure accuracy and the count of the whole test batch would be reflected in the Particle Count column while the Standardized Count column will show average particles per part.

In a nutshell Standardized Count extrapolates the particle count to the Standard Unit being reported to – even though the test batch was not perfectly the size of the Standard Unit.

So why is Standardized Count important? It is the Standardized Count that your Limits are judged against to determine Conformance or Non-conformance.

I hope that helps demystify the ISO 16232 Standardized Count for you.

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Please feel free to give me a call – we do a lot of ISO 16232 based testing for a wide array of customers here at the Crown Cleanliness Testing Laboratory in Jackson, Michigan USA. Give me a call when you have a question about cleanliness testing or need cleanliness testing done. We offer Standard Turnaround for scheduled cyclical testing and Expedited Turnaround when you need results ASAP. We also sell Lab kits and can train your personnel to do cleanliness testing if your customer insists you do the testing in-house.

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