May 27, 2020 | BPSA's New 2020 Particulates Publication: Guidance for Single-Use Equipment Providers and Users

Thank you for attending the BPSA Speaker Series webinar on May 27. Below are the questions that were asked during the presentation. If you would like to share any additional feedback about the webinar, please contact Leslie Pizarro at lpizarro@socma.org.

1. **Is the equipment used for count particles for USP 788 able to count visible particles?**

   There are two methods described in USP 788, light obscuration and membrane microscopy. As the BPSA paper describes in detail, it's the opinion of the authors that only the membrane microscopy method will capture visible (> 100 micron) particles.

   Our experience is that the Light Obscuration method's equipment/sensors, settings and procedures for routine USP <788> testing are commonly not able to reliably observe visible particles. Usually, the sensors used for parenteral release are for particles less than 100 microns, since there is 100% visual inspection.

2. **Is there a library of visible particles available, such as for clothing fibers, embedded particles, etc.?**

   There is no SUS industry wide library of visible particles at this time, but there is a good online library available for free: www.mccroneatlas.com

3. **Do you recommend a method for removing particles, including any wetting agents, for the USP 788 analysis or for capture of visible particles?**

   The BPSA paper cites the newly published ASTM 3230-20 on how to best extract particles out of SUS. Wetting agents can potentially create air bubbles, which can be a problem for the light obscuration method in the USP 788.

4. **Can you briefly highlight the significant lessons learned and developments since the release of the 2014 paper? What has changed/evolved in last 6 years (high level)?**

   The overall adoption of SUS has increased, moved further down the drug development process (Phase 3-4), and new critical applications (final filling, vaccines, cell and gene therapies) are in the works. All these developments have increased the sensitivity to particulates. A proactive approach from suppliers works best: anticipating the needs and getting quality systems in place to meet customer needs.

5. **Any recommendations on lot-release testing of particulates? In terms of frequency and quantity per lot? Any standards we can use? We are exploring to use ANSI/ASQ Z1.4-2003 (R2018): Sampling Procedures and Tables for Inspection by Attributes for the sampling quantity. If you are familiar with this standard, what AQL levels are appropriate for pre-clearance vs post-final clearance?**

   This is a good approach for sampling.

6. **Can you share providers of automated detection methods of particulate for SUT?**

   We use automated microscopy, which is automated microscopic scanning and image analysis of particles collected on filter membranes. Most of the major microscope manufacturers (Zeiss, Leica, Olympus etc.) offer such systems. Another source are suppliers specific to the automotive industry, which uses the ISO 16232 standard which describes automated microscopy.

7. **As per your feeling, would Class5 environment have a need for SUT in the future?**

   The cleanliness result for a SUS is not necessarily guaranteed by the ISO level of the clean room. ISO levels are measurements of small airborne particles (0.5 – 5 microns), but the biggest concerns for SUS are much larger particles (> 100 micron). These large particles do not fly far, they settle quickly, and they tend to stick to surfaces.

   So, controlling processes which generate particles (e.g. cutting, welding) are key. ISO certification (in activity) does bring a hygiene discipline for the cleanroom operators. Humans shed lots of protein particles (skin, hair...) and may bring textile fibers into the clean room.