

Miller, Diane M. (CDC/NIOSH/EID)

From: Eric Hanson [ehanson@atitest.com]
Sent: Thursday, November 19, 2009 8:16 AM
To: NIOSH Docket Office (CDC)
Subject: Docket 168 - Total Inward Leakage (respirators other than filter facepieces and half-masks)
Attachments: Docket Submittal 168 on TIL 111909.pdf

Please accept our comments with respect to the referenced Docket.

Thanks!

Eric A. Hanson
Air Techniques International



MEMORANDUM

To: NIOSH Docket Office, via nioshdocket@cdc.gov
From: Eric Hanson, Air Techniques International
Date: 19 October 2009
Subject: Docket 168 – Total Inward Leakage (respirators other than filter facepieces and half-masks)

After reviewing the materials from the Respirator Standards Development Public Meeting conducted on September 17, 2009, we would like to submit the following comments for consideration by NIOSH. Specifically, we reference the 19 page presentation. Please note that these points are brief, but we are available at NIOSH's convenience to review them in much greater detail.

1. Acknowledging that NIOSH has done significant work in anthropometric research and computer modeling, a properly designed set of test heads with a test bench may be far easier to manage and certainly more repeatable than Test Panels of 35 individuals
2. Reference page 9 of 19.
 - a. While Corn Oil has been used for aerosol chamber testing for years, other oil-based aerosols such as 4 Centistoke Polyalpha Olefin (PAO) offer many advantages over Corn Oil. PAO has become the test agent of choice for both Fit and Leakage Testing as well as Efficiency Testing in most other applications.
 - b. The light scattering photometer systems typically used for oil aerosol measurement have minimum measurable levels of 0.0005% or less.
 - c. Salt aerosol can also be measured effectively by light scattering photometers to measurable levels of 0.0005% or less, and light scattering photometry offers many advantages over flame photometry
3. Reference page 10 of 19. Dioctyl Phthalate (DOP) aerosol has also been replaced by PAO aerosol in many applications as noted in 2a above. PAO has been approved by the US Army Surgeon General for this kind of testing.
4. Reference page 16 of 19. Please note that small portable Fit Testing hoods can be used very effectively in lieu of walk-in chambers for TIL testing
5. We suggest that NIOSH evaluate the number and duration of Fit Test exercises for TIL consideration, based upon the premise that accurate Fit and Total Inward Leakage can be determined in a far shorter time period than traditional testing has required.
6. We cross-reference and support the August 2007 Docket #036 comments of Jeff Weed of TSI and Paul Gardner of the US Army – RDECOM with respect to the use of an oil aerosol and photometry in lieu of CNC-based detection. The concerns they raised are even more relevant when considering much higher efficiency respirators other than filter facepieces and half-masks.