

**National Personal Protective
Technology Laboratory**

**Supplied-Air Respirator (SAR)
Panel Discussion**

September 17, 2009

Supplied-Air Respirator (SAR) NIOSH Docket # 083B

Stakeholder Input can be submitted by

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Discussion Slide

Airsource Systems

- **Optional approval**
- **Presently neither NIOSH nor OSHA evaluate portable air supply systems**
- **Inclusion of cylinder carts in Airsource systems**
- **NIOSH approves systems, when SAR are offered as Airsource systems they should be tested in that configuration**

Discussion Slide

Total Inward Leakage

Respiratory inlet covering	Maximum TIL value, %
Constant flow half mask	0.2%
Constant flow full facepiece or neck dam	0.01%
Constant flow hood, helmet, or loose fitting facepiece	0.01%
Pressure demand half mask	0.01%
Pressure demand full facepiece	0.01%
Any IDLH or CBRN SAR	0.01%
Any combination with one of the above	The unit must meet or exceed the minimum TIL of each type when tested in that mode.

Discussion Slide Helmet Requirements

- **Should NIOSH require marking helmets that do not meet the mechanical compliance test as “not impact and penetration resistant?”**
- **The current SAR draft standard only requires ANSI Z89.1-2003 Type I or Type II protective cap standards**

Discussion Slide

Lens Requirements

- Should NIOSH require marking lens that do not meet the mechanical compliance test as “not impact resistant?”
- The current SAR draft standard only requires ANSI Z87.1-2003 impact and penetration tests
- To be marked ANSI Z87.1-2003 the lens would need to pass all of the ANSI 87.1-2003 tests

Discussion Slide Manufacturer Specified Air Flow Rates

Air Flow Rate	Minute Volume	Tidal Volume and Respirations
Low	25 Lpm	1.30 liters @ 19.2 respirations per minute
Moderate	40 Lpm	1.67 liters @ 24 respirations per minute
High	57 Lpm	1.95 liters @ 29.1 respirations per minute
Very High	78 Lpm	2.00 liters @ 39 respirations per minute

Discussion Slide

Hose Permeation Tests

- **Develop a new sealed test apparatus and test procedure that can be conducted in a laboratory environment under controlled conditions**
- **Proposed permeation tests include gasoline, kerosene, and MEK/toluene**
- **Can all three tests be replaced with one custom blend?**

Discussion Slide

Live Agent Testing

- **Should we have two available levels of protection as is being considered with the PAPP standard?**
 - Higher challenge concentration same as the Open Circuit SCBA
 - Lower challenge concentration for perimeter support activities