

Next Generation Permeation Cell Design – FY13 (927ZKVP)

Objective

- Design and produce a next generation permeation test cell
- Reduce variability within permeation testing by developing a new permeation test method
- Provide method development and testing to Ag PPE for UMES



Applicable Standards

- NFPA Protective Clothing Standards – 1991, 1994, 1971, 1951
- ASTM F739 *Standard Test Method for Resistance of Protective Clothing Materials to Permeation by Liquids or Gases Under Conditions of Continuous Contact*
- ISO 6529:2012 Protective Clothing – Protection against chemicals

Stakeholders

- Emergency Responders
- Agricultural Workers
- Manufacturers
- Test Laboratories
- Certification Laboratories

Key Partners



Project Scope

- Finalize NPPTL cell design and validate against ASTM F739 and AVLAG cells
- Complete testing and method development for select pesticides
- Participate/lead interlab studies within ASTM and ISO Committees

Milestones FY13

- Q1 – Conducted testing on Ag PPE with selected pesticide for method development. Project placed on hold.
- Q2 – Project was reinstated due to significant stakeholder requests. Protocol was initiated and method for pesticide was finalized.
- Q3 – Complete project plan/test protocol and submit for external peer review.
- Q3/Q4 – Complete cell design and begin validation testing

Expected Outputs

- Presentations at conferences (TSWG December 2012)
- Presentations at standards committee meetings and public meetings
- Test method for Ag PPE delivered to UMES (March 2013)
- Manuscripts published or submitted to peer review journals (1 Review)
- Recommended methods for permeation testing utilizing NPPTL cell for use by the NFPA, ASTM, and ISO Committees

Expected Outcomes

- Revisions or updates to NFPA 1994, NFPA 1971, NFPA 1991, NFPA 1951, ASTM F739, and ISO standards
- New ASTM permeation test method using NPPTL cell
- NPPTL cell available as a product to test laboratories

Updated: 4 April 2013