Office of Law Enforcement Standards (OLES)

OLES:

Developing Standards for

Chemical
Biological
Radiological
Nuclear
Explosive
Response Equipment

NIST

NIST CENTENNIAL 1901-2001


TERRORISM


N94MD

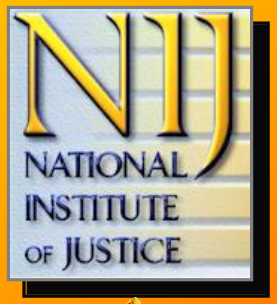

CENTRAL PARK
NEW YORK CITY

Office of Law Enforcement Standards

(OLES)

NIST

Office of Law Enforcement Standards



Performance Standards

Test Methods & Procedures

Technical Reports

User Guides

Office of Law Enforcement Standards

- Weapons and Protective Systems
- Detection, Inspection and Enforcement Technologies
- Chemical Systems and Materials
- Forensic Sciences
- Public Safety Communications Standards

1998

Department of Defense &
Department of Justice
commission

InterAgency Board for Equipment Standardization & Interoperability

(IAB)

IAB

Develops & Maintains

STANDARD EQUIPMENT LIST (SEL)

Essential Items for responding to

Chemical Biological Radiological Nuclear Explosive

terrorist attacks

IAB

Medical	Personal Protective & Operational Equipment	Science & Technology	InterOperable Communications & Information Systems	Detection & Decontamination	Standards
Sarasota County Fire Dept	Los Angeles City Fire Department Founded 1886	Fire Department City of New York	Boston Police First in the Nation 1854	Hazardous Incident Team Chicago Fire Dept 5-1-1	NFPA
Department of Health & Human Services USA	County of Los Angeles California Fire Department	Defense Threat Reduction Agency United States of America	International Fire Chiefs Association	Downers Grove Fire Dept.	NIOSH
	Cum Scientia Defendimus			City of Seattle Fire Dept.	
				Cum Scientia Defendimus	

IAB

Standards

NFPA

NIOSH

Medical	Personal Protective & Operational Equipment	Detection & Decontamination	Standards
Sarasota County Fire Dept	Los Angeles City Fire Department Founded 1888	Hazardous Incident Team Chicago Fire Dept 5-1-1	NFPA
Department of Health & Human Services USA	County of Los Angeles California Fire Department	Downers Grove Fire Dept.	NIOSH
		City of Seattle Fire Dept.	

National Fire Protection Association

- 69,000 professional & 80 trade association members
- 100+ years of standards experience
- Members include largest group of First Responders

National Institute for Occupational Safety & Health

- Division of Centers for Disease Control & Prevention
- Among missions: public protection against airborne hazards
- Federal authority for approving respiratory protective devices

NIOSH

IAB

Standards

NFPA

NIOSH

Medical	Personal Protective & Operational Equipment	Detection & Decontamination	Standards
Sarasota County Fire Dept	Los Angeles City Fire Department Founded 1888	Hazardous Incident Team Chicago Fire Dept 5-1-1	NFPA
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		City of Seattle Fire Dept.	

IAB

STANDARD EQUIPMENT LIST

IAB

"Most commodity SubGroups have realized that all equipment that falls in the individual equipment categories will not provide suitable levels of field performance."

1999 IAP Annual Report

IAB

"The importance of this SubGroup cannot be overstated ... It is critical that compatibility issues of equipment are addressed now, through nationally recognized standards, before the advent of multi-agency, multi-juridictional WMD incidents."

1999 IAP Annual Report

IAB

"Standard requirements need to be developed to ensure adequate levels of performance by all domestic preparedness equipment."

1999 IAP Annual Report

Office of Law Enforcement Standards

Developing

- Performance Standards
- Test Methods & Procedures
- Technical Reports
- User Guides

since 1971

Office of Law Enforcement Standards

- **Member, IAB Standards Coordination Committee**
- **IAB's Executive Agent**
- **Arbiter, Coordinator & Administrator**

Office of Law Enforcement Standards

Qualifications

- **Technical Arm, NIJ's Office of Science & Technology**
- **Working partner with Federal, state & local public safety organizations**

Office of Law Enforcement Standards

Qualifications

- **Produced 200+ standards, test methods, technical reports, and user guides**
- **History of effective team building**

CBRNE Equipment Standards

TECHNICAL CHALLENGES

- Existing standards are inadequate hybrids of industrial/military standards
- Terrorist CBRNE agents differ greatly from most industrial hazards
- Domestic terrorist situations differ significantly from battlefield situations

CBRNE Equipment Standards

TECHNICAL CHALLENGES

- Developing equipment contingent on identifying & quantifying exposures
- Systematic identification and measurement are lacking
- Some necessary detection technologies are unavailable

CBRNE Equipment Standards

IAB PRIORITY

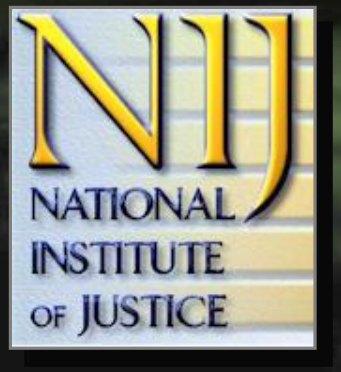
Standards for Personal Protection Equipment (PPE)

CBRNE Equipment Standards

First Objective: Develop standards for CBRNE respiratory devices

CBRNE Equipment Standards

- **Memorandum of Understanding signed by 4 federal partners**



- **Reapportioned funds**

- **Appointed project manager**

National Institute for Occupational Safety & Health

- Assigned lead technical role
- Developing overall plan
- Gathering threat assessment data
- Quantifying threats

National Institute for Occupational Safety & Health

- Identifying applicable standards
- Developing final performance standards & test procedures
- Adapting certification program to accommodate CBRNE

U.S. Army Soldier Biological, Chemical Command (SBCCOM)

U.S. Army Soldier Biological, Chemical Command (SBCCOM)

- Supports NIOSH's efforts
- Completes world-class team
- Analyzes threat assessment data
- Identifies likely CBRNE agents & delivery systems

U.S. Army Soldier Biological, Chemical Command (SBCCOM)

- Assesses existing standards
- Performs vital laboratory research
- Develops key criteria & test methods
- Conducts warfare agent tests against standards

U.S. Army Soldier Biological, Chemical Command (SBCCOM)

- Publishes database in support of user guides
- Serves as independent testing laboratory

Office of Law Enforcement Standards

- **OBJECTIVES**
- **MILESTONES**
- **TIMETABLES**

NIOSH-SBCCOM TEAM: 2001

- Specific hazard exposures
- Respiratory exposures
- Non-respiratory exposures, PPE, detection equipment

NIOSH

- Set CBRNE respirator certification standards
  - Conducting discussions
  - Analyzing current standards
  - Determining greatest needs of First Responders

NIOSH

- Complete gas & organic vapor chemical laboratory
- Propose guidelines for selecting test subjects
- Establish approval policy for SCBA respirators

NIOSH

- Publish user guides
  - Evaluate current analytical methods
  - Develop sizing system
  - Draft report on respiratory filter degradation

SBCCOM

- Define sensitivity of chemical agent detectors
- Assess available detection technologies
- Develop ranking matrix
- Review test methods for detectors and non-respiratory PPE

SBCCOM

- Support development of standards for chemical agent detectors & PPE
- Support development of user guides
- Recommend test requirements
- Begin validating test methods

IAB

- Accepted early results of respiratory standards effort
- Accepted strategy for standards development
- Will apply strategy, if successful, to all CBRNE equipment standards efforts

Office of Law Enforcement Standards

USER GUIDE SERIES

- Existing CBRNE Equipment
- Five Volumes
- Print & CD-ROM
- Covers PPE, detection, decontamination, and communications

Office of Law Enforcement Standards

USER GUIDE SERIES

3.3.3 High Performance Liquid Chromatography (HPLC)

High performance liquid chromatography is most useful in the detection and id[illegible] n the de[illegible] ds that do n ea[illegible] HPLC ins[illegible] kin-Elmer, Shimadzu, and Varian, and is shown in Figures 3-15, 3-16, 3-17, and 3-18. As with GCs, HPLC instruments can be equipped with a variety of detectors such as ultraviolet–visible (uV-Vis) spectrometers, mass spectrometers, fluorescen[illegible] detectors. Two limitations to the fielding of HPLCs an[illegible] requirements (120V house current) and high purity solv[illegible] HPLC unit available.

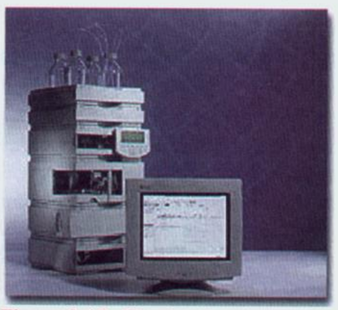


Figure 3-15. Hewlett Packard HP1000 HPLC System

Fig[illegible] HP[illegible]

Figure 3-17. Shimadzu LC-10 HPLC System

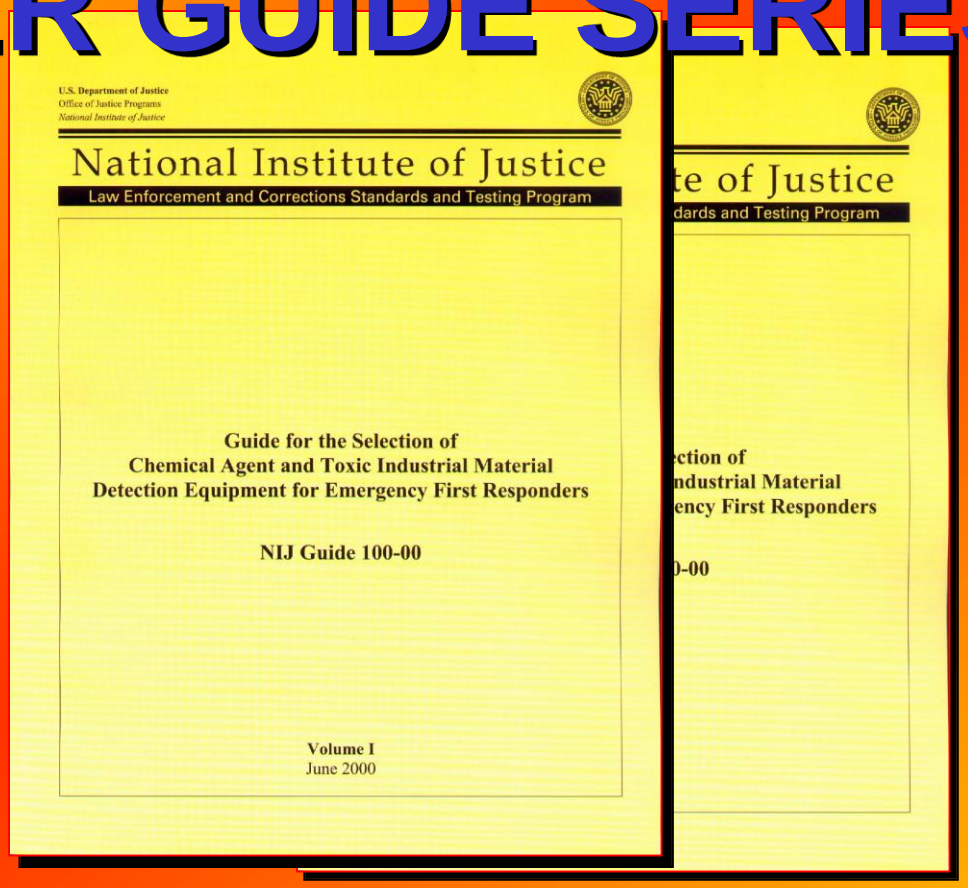
Figure 3-18. Varian ProStar Analytical HPLC System

Table 5-3. Handheld Portable Detection Equipment (CA)
May 2000

Detector Name	Chemical Agents Detected	TIMs Detected	Sensitivity	Resistance to Interferents	Response Time	Start-Up Time	Detection States	Alarm Capability	Portability	Battery Needs	Power Capabilities	Environment	Durability	Unit Cost	Operator S	T
niRae 2000	●	TBD	○	TBD	●	◑	◑	●	●	●	◕	◑	TBD	◑	◑	●
P2C Chemical Agent etector	●	○	◕	◔	●	●	◕	●	◑	●	◕	●	●	○	●	●
SA Passport II PID onitor	◑	TBD	○	TBD	TBD	TBD	◑	TBD	TBD	TBD	TBD	TBD	TBD	○	◑	TBD
lvanced Portable etector (APD) 2000	●	○	◔	◔	◕	◑	◑	●	◑	●	◕	●	TBD	○	◑	◑
ET INDIV Individual rve Agent Detector	◑	○	◕	◕	○	◔	◑	○	TBD	NA	NA	●	●	TBD	●	●

Office of Law Enforcement Standards

USER GUIDE SERIES



COMPUTER-BASED ASSESSMENT TOOL

- Three scenarios
- Probable agents & delivery systems
- Probable exposures
- Based on SBCCOM models

ACHIEVEMENTS

Management Structure

World-Class Team

Development Strategy

First Responder Resources

Heightened Awareness