USER INSTRUCTION, SAFETY AND TRAINING GUIDE

LION MT94™ CBRN Ensemble

Front and Rear Entry

LION
ready for action

7200 POE AVE.
DAYTON, OHIO 45414
www.LIONprotects.com

January 2023

Protective Ensemble for Hazardous Materials and CBRN Operations

For additional training, visit www.lionfireacademy.com

⚠ *DANGER*

You MUST read this guide and all Garment warning and danger labels before wearing.

NEVER wear the Garment without the correct respirator, footwear and gloves; NEVER wear the Garment without all elements in place. The Garment alone does not provide protection against flame, chemical and biological hazards.

This Ensemble provides LIMITED protection against flame, abrasion, puncture, bodily fluids, other liquids and gasses.

This NFPA 1994 Class 1 and 2 and NFPA 1992 Ensemble has ONLY been certified to the chemicals identified in the NFPA 1992 and NFPA 1994 Standards (as incorporated in NFPA 1990). This Ensemble has NOT been certified for ANY OTHER chemicals or hazardous materials.

You must have special training in order to safely use this NFPA 1994 Class 1 and 2 and NFPA 1992 Garment.

⚠ DANGER

6852

You must read and understand these warnings and instructions. Failure to follow these warnings and instructions will result in serious injury or death.

- Wear this garment FOR LIQUID SPLASH PROTECTION, CLASS 1, OR CLASS 2 HAZARDOUS MATERIALS AND CBRN TERRORISM INCIDENTS.
- Before wearing this garment, you must read and understand the User Instruction, Safety And Training Guide provided with this garment. The guide explains: 1. Critical safety information and protective clothing limitations. 2. Proper sizing/adjustment. 3. Procedures for putting on and removing protective clothing. 4. How to clean, Decontaminate, inspect and store this garment. 5. Use consistent with NFPA 1500, 6. Limitations on useful life and retirement procedures.
- You should wear this garment only if you have been properly trained in hazardous materials response, and have knowledge of the proper selection, fit, use, care and limitations of protective clothing and equipment.
- This garment provides limited protection against heat and flame. Minimize exposure to heat.
- Exertion in hot conditions may result in heat exhaustion or poor judgement. If you feel dizziness, dehydration, loss of focus, or shortness of breath, get to a safe area, remove this garment, and seek medical attention.
- Do not use this garment if it is damaged or dirty, garments will NOT provide the intended protection. ALWAYS follow manufacturer's cleaning instructions.
- This garment has limited useful life and should be retired **after 5 wears and 5 washes; 10 wears and 2 washes or 10 years from the date of manufacture,** whichever occurs first. You **must** inspect regularly and retire when appropriate according to the **User Instruction, Safety And Training Guide.**
  Download @ www.LIONppe.com

MADE IN THE USA | DO NOT WRITE ON OR REMOVE THIS LABEL | REV. 3.0 12/2022

CLEANING AND STORAGE INSTRUCTIONS

- Users must clean, inspect, maintain, store and alter only in accordance with the User Instruction, Safety and Training Guide.
- Clean non-contaminated garments by machine wash, warm water using only liquid detergent and, if needed, liquid non-chlorine bleach. Double rinse in cool water. Never use softeners.
- Dry by hanging in open area, out of direct or indirect sunlight and fluorescent light.
- Store out of direct or indirect sunlight and fluorescent light.
- **Never** use chlorine bleach. Chlorine bleach will significantly compromise the protection afforded by textile and barrier materials utilized in the construction of this garment.
- **Never** dry clean.
- The maximum shelf life of this garment is 10 years after the date of manufacture.

Check for each Laundering	1	2	3	4	5	DO NOT EXCEED 5 CYCLES				
Check for each Wearing	1	2	3	4	5	6	7	8	9	10

1. Danger and Cleaning Label

LION MT94
100% ARAMID TRILAM
RM1103093
REQ: E108335
MFG./FAB.DATE: 10/1/22
CUT: 07344401001
MODEL: CMTM10
SIZE/TAILLE: MEDIUM
0002971732

3. Garment Information Label

6853

LION
Questions, write or call immediately:
LION
7200 Poe Ave., Suite 400 Dayton, OH 45414. 1-800-421-2926

SEI
Cert. Mod.
NFPA 1990 (NFPA 1994), 2022 Ed.
NFPA 1990 (NFPA 1992), 2022 Ed.

THIS NONENCAPSULATING LIQUID SPLASH–PROTECTIVE ENSEMBLE MEETS THE BASIC REQUIREMENTS OF NFPA 1992, INCORPORATED IN THE 2022 EDITION OF NFPA 1990, AND THE ADDITIONAL REQUIREMENTS INDICATED BELOW.

ADDITIONAL REQUIREMENTS	YES	NO
LIMITED FLASH FIRE PROTECTION FOR ESCAPE ONLY IN THE EVENT OF A FLASH FIRE		✓
CLAIM OF OPTIONAL BREATHABILITY FOR GARMENT MATERIALS		✓

THIS CLASS 1 AND CLASS 2 NONENCAPSULATING HAZARDOUS MATERIALS AND CBRN PROTECTIVE ENSEMBLE MEETS THE REQUIREMENTS OF NFPA 1994, INCORPORATED IN THE 2022 EDITION OF NFPA 1990, FOR THE ABOVE NOTED CLASS.

THE TECHNICAL DATA PACKAGE CONTAINS INFORMATION ON HAZARDOUS MATERIALS AND CBRN AGENTS AND ON CHEMICALS AND SPECIFIC CHEMICAL MIXTURES FOR WHICH THIS NONENCAPSULATING ENSEMBLE IS CERTIFIED. CONSULT THE TECHNICAL DATA PACKAGE AND MANUFACTURER'S INSTRUCTIONS BEFORE USE.

FOR COMPLIANCE WITH NFPA 1992 AND NFPA 1994, THE FOLLOWING ADDITIONAL COMPONENTS MUST BE WORN IN CONJUNCTION WITH THIS LIQUID SPLASH, HAZARDOUS MATERIALS AND CBRN PROTECTIVE ENSEMBLE: DUNLOP® ON-GUARD™ HAZMAX™ (8701200), TINGLEY HAZPROOF®(82330 OR 82331), THOROGOOD® KNOCKDOWN ELITE™ (804-6389,504-6389), THOROGOOD® HELLFIRE™ KEVLAR® INSULATED RUBBER(807-6000, 507-6000) OR HELLFIRE™ FELT INSULATED RUBBER (807-6003,507-6003) BOOTS AND GORE G9492 GLOVE SYSTEM

SEE TECHNICAL DATA PACKAGE FOR A LIST OF DETACHABLE COMPONENTS

OUTER BOOT FOOTWEAR OPTIONS WORN WITH THIS ENSEMBLE MUST MEASURE AT LEAST 140 mm (5.5 in.) HIGH AND BE CERTIFIED TO NFPA 1951, 1971, 1991, 1992, 1994, OR 1999.

To reduce the risk of injury or death, you must assemble and wear together ALL of the above items. Always make sure that all ensemble layers have the proper overlap and that all items fit properly. Reference the User Instruction, Safety and Training Guide for proper donning and wearing instructions.

DO NOT REMOVE THIS LABEL REV. 3.0 6/2022

2. Certification Label

Copies of labels used only in NFPA 1994 Class 1, Class 2 and NFPA 1992 Compliant Ensembles

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1. INTRODUCTION

Congratulations on purchasing your new LION product! Your Compliant NFPA 1994 Class 1 and 2 for Chemical/Biological Terrorism Incidents and NFPA 1992 Liquid Splash-Protective Ensemble (referred throughout this book as the NFPA 1994 Class 1 and 2 and NFPA 1992 Ensemble; Hazardous Materials Ensemble; Ensemble; or Garment only when not including footwear or gloves) is designed to provide limited protection against hazards to Emergency Responders involved in Hazardous Materials Emergencies and Chemical/Biological Terrorism Incidents. It and its components are manufactured and certified under the performance requirements of the NFPA 1994 standard Class 1 and 2 requirements, the NFPA 1992 standard, as incorporated in NFPA 1990, current edition.

This User Instruction, Safety and Training Guide gives important instructions regarding the use, inspection, care, maintenance, storage and retirement of your NFPA 1994 Class 1 and 2 and NFPA 1992 Compliant Garment. No one except you, the specially trained Emergency Services Responder, should remove this guide from your NFPA 1994 Class 1 and 2 and NFPA 1992 Garment. Immediately upon receipt of your NFPA 1994 Class 1 and 2 and NFPA 1992 Garment, you should remove, carefully read and save this Guide in a three-ring binder for future reference.

This Guide is a training tool to help you understand your NFPA 1994 Class 1 and 2 and NFPA 1992 Compliant Ensemble and how to use it in the safest possible manner during Hazardous Materials operations and Chemical/Biological Terrorism Incidents. Please take the time to read it.

This Guide will train you to:

- Put on your NFPA 1994 Class 1 and 2 and NFPA 1992 Ensemble for safe usage
- Wear your NFPA 1994 Class 1 and 2 and NFPA 1992 Ensemble
- Decontaminate your NFPA 1994 Class 1 and 2 and NFPA 1992 Ensemble
- Inspect your NFPA 1994 Class 1 and 2 and NFPA 1992 Ensemble
- Repair your NFPA 1994 Class 1 and 2 and NFPA 1992 Ensemble
- Store your NFPA 1994 Class 1 and 2 and NFPA 1992 Ensemble
- Retire your NFPA 1994 Class 1 and 2 and NFPA 1992 Ensemble

For your personal safety be alert for important safety messages in this Guide:

⚠ *DANGER*

DANGER Indicates immediate hazards that will result in serious personal injury or death if not avoided, or if instructions, including recommended precautions, are not followed. The signal word **"DANGER"** is highlighted in red, both in this Guide and on labels affixed to your Garment, to indicate the extreme hazard of the situation.

⚠ *WARNING*

WARNING Indicates potentially hazardous situations that could result in serious personal injury or death if not avoided, or if instructions, including recommended precautions, are not followed. The signal word **"WARNING"** is highlighted in black in this Guide.

⚠ *CAUTION*

CAUTION Indicates potentially hazardous situations or unsafe practices that could result in minor or moderate personal injury or product or property damage if instructions, including recommended precautions, are not followed. The signal word **"CAUTION"** is highlighted in gray in this Guide.

2. DEFINITIONS

Accessory(ies) - An item, or items, that is attached to an ensemble or ensemble element that is not necessary to meet the requirements of NFPA 1990.

APR – Acronym for Air Purifying Respirator.

ASTM – Acronym for American Society of Testing and Materials.

Aramid Fibers – Special fibers with higher strength and resistance to heat and flame and abrasion used in protective clothing.

AHJ-Authority Having Jurisdiction – An organization, office or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, an installation or a procedure.

Body Substance Isolation – A concept practiced by emergency response personnel – blood and ALL body fluids are to be considered to pose a risk for transmission of bloodborne diseases.

Biological Agent – Biological materials that are capable of causing disease or long-term damage to the human body.

Biological Terrorism Agents – Liquid or particulate agents that can consist of a biologically derived toxin or pathogen to inflict lethal or incapacitating casualties, generally on a civilian population as a result of a terrorist attack.

Body Fluids – Fluids produced by the body including, but not limited to, blood, semen, mucus, feces, urine, vaginal secretions, breast milk, amniotic fluid, cerebrospinal fluid, synovial fluid and pericardial fluid.

Body Fluids-Borne Pathogen – An infectious bacterium or virus carried in human, animal, or clinical body fluids, organs or tissue.

CBRN – Abbreviation for Chemical, Biological, Radiological and Nuclear.

CBRN Barrier Material – The part of the composite that is intended to provide protection against CBRN terrorism agents.

CBRN Terrorism Incident Protective Ensembles and Ensemble Elements – Multiple elements, categorized as Class 1, Class 2, Class 3, or Class 4 CBRN protective ensembles and ensemble elements, designed to provide minimum full body protection against exposure to chemical/biological terrorism agents occurring during chemical/biological terrorism emergencies. (See also Class 1 Ensemble, Class 2 Ensemble, Class 3 Ensemble and Class 4 Ensemble.)

CBRN Terrorism Incident Protective Footwear – The element of the protective ensemble that provides protection to the foot, ankle and lower leg.

CBRN Terrorism Incident Protective Garment(s) – The element of the protective ensemble that provides protection to the upper and lower torso, head, arms and legs; excluding the hands and feet.

CBRN Terrorism Incident Protective Glove(s) – The element of the protective ensemble that provides protection to the wearer's hands and wrists.

CBRN Terrorism Incidents – Situations involving the intentional or accidental release of CBRN warfare agents in civilian areas.

Chemical Terrorism Agents – Liquid, solid, gaseous and vapor chemical warefare agents and toxic industrial chemicals used to inflict lethal or incapacitating casualties, generally on a civilian population, as a result of a terrorist attack.

Chemical Warfare (CW) Agents – Liquid, solid and gas chemical agents (most are liquids) traditionally used during warfare or armed conflict to kill or incapacitate an enemy. See also Chemical Terrorism Agents and Toxic Industrial Chemicals.

Class 1 Hazmat/CBRN Protective Ensemble – An ensemble comprising ensemble elements that, when worn together, are designed to protect emergency responders at hazardous materials emergencies and CBRN terrorism incidents involving vapor or liquid chemical hazards where concentrations are at or above immediately dangerous to life and health (IDLH) levels, thus requiring the use of self-contained breathing apparatus (SCBA).

Class 2 Hazmat/CBRN Protective Ensemble – An ensemble comprising ensemble elements that, when worn together, are designed to protect emergency responders at hazardous materials emergencies and CBRN terrorism incidents involving vapor or liquid chemical hazards where concentrations are at or above IDLH levels, thus requiring the use of self-contained breathing apparatus (SCBA).

Class 3 CBRN Protective Ensemble – An ensemble comprising ensemble elements that, when worn together, are designed to protect emergency responders at hazardous materials emergencies and CBRN terrorism incidents involving low levels of vapor or liquid chemical hazards where concentrations are below IDLH levels, thus permitting the use of CBRN air-purifying respirators (APR) or CBRN-powered air-purifying respirators (PAPR).

Class 4 CBRN Protective Ensemble – An ensemble comprising ensemble elements that, when worn together, are designed to protect emergency responders at hazardous materials emergencies and CBRN terrorism incidents involving biological or radiological particulate hazards where concentrations are below IDLH levels, thus permitting the use of APR or PAPR equipment.

Cleaning product – In textile product care, a cleaning product containing one or more surfactants as the active ingredient(s). Commercially available or household cleaning products with a pH greater than 6.0 and less than 10.5 are suitable for routine washing of the Garment. See also Section 11 of this Guide.

Component – Any material, part or subassembly used in the construction of the compliant product.

Composite – The layer or layers of materials or components.

Elastomeric Interface Material – An exposed elastomeric material that is not otherwise used as garment material, that which provides an interface other than seams between components of the ensemble and ensemble elements and, if applicable, the interface between the respirator facepiece and the ensemble or ensemble elements.

Ensemble – See CBRN Terrorism Incident Protective Ensemble and Ensemble Elements.

Encapsulating Ensemble –A type of ensemble that completely covers the wearer and the wearer's respirator.

Exposure Incident – Specific contact of the following with blood or O.P.I.M.: 1) eye; 2) mouth or other mucous membranes; 3) non intact skin; or 4) parenteral contact.

Facecloth – Lining fabric that is used to cover inner surfaces.

Flame Resistant – A term used to describe a material that burns slowly or is self-extinguishing after removal of an external source of ignition.

Flame Resistance – A property of a material whereby combustion is prevented, terminated, or inhibited following the application of a flaming or non flaming source of ignition, with or without subsequent removal of the ignition source; flame resistance can be an inherent property of the material, or it can be imparted by specific treatment.

Flame Retardant – A chemical compound that can be incorporated into materials or a textile fiber during manufacture or treatment to reduce its flammability.

Flammable or Explosive Atmospheres – Atmospheres containing solids, liquids, or gasses at concentrations that will burn or explode if ignited.

Flash Fire – A fire that rapidly spreads through a diffuse fuel, such as dust, gas or the vapors of an ignitable liquid, without the production of damaging pressure.

Fluorescence – The process by which radiant flux of certain wavelengths is absorbed and reradiated, nonthermally in other, usually longer, wavelengths.

Garment – The coverall element of the protective ensemble designed to provide minimum protection to the upper and lower torso, arms, and legs, excluding the head, hands and feet.

Glove Liner-See Inner Glove.

Guide – A shortened version referring to this *User Instruction, Safety and Training Guide.*

Hazardous Materials – A substance (solid, liquid, or gas) that when released is capable of creating harm to people, the environment and property.

Hazardous Materials Emergencies – Incidents involving the release or potential release of hazardous materials.

IDLH – Immediately Dangerous to Life or Health; any atmosphere that poses an immediate hazard to life or produces immediate irreversible debilitating effects on health.

Inner Glove – A glove worn inside another glove for the purposes of providing additional protection to the wearer and meeting the requirements of NFPA 1994 Class 1 and 2 and NFPA 1992.

Interface Area – An area of the body not protected by protective equipment; the area where the protective garments and other equipment (helmets, gloves, boots, respiratory protection) meet.

Ionizing Radiation – Extremely short wavelength, high energy penetrating rays of gamma and x-rays emitted from radioactive elements and isotopes.

Liquid-Borne Pathogen – An infectious bacteria or virus carried in human, animal, or clinical body fluids, organs, or tissues.

NFPA – National Fire Protection Association; a private sector, volunteer-based standard-making organization which develops guidelines related to fire protection and prevention.

NIOSH – Acronym for the National Institute for Occupational Safety and Health; a government-based training and research organization that tests and certifies respirators for workplace use.

Non-Encapsulating Ensemble – A type of ensemble that does not fully cover the wearer's respirator and relies on the facepiece of the respirator to have an interface with the garment and complete the enclosure of the wearer.

O.P.I.M. – Other potentially infectious materials. Includes semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, amniotic fluid and peritoneal fluid.

OSHA – Occupational Safety and Health Administration; a government-based standard-making body which develops public health and safety standards.

Outer Boot – A boot worn over other footwear components to meet requirements of this standard.

Outer Element – A garment worn over another garment element to meet the requirements of NFPA 1994 Class 1 and 2 and NFPA 1992.

Outer Glove – A glove worn over another glove for the purposes of providing additional protection to the wearer and meeting the requirements of NFPA 1994 Class 1 and 2 and NFPA 1992.

Outer Shell – The outermost layer of the composite with the exception of hardware, reinforcing material and wristlet material. Also referred to as “shell”.

Over Glove – See Outer Glove.

Parenteral – Piercing through the skin barrier-needlestick injury, human bite or a cut or scrape.

Protective Ensemble and Ensemble Elements – An abbreviated term for CBRN Terrorism Incident Protective Ensembles.

Radiological Particulate Terrorism Agents – Particles that emit ionizing radiation in excess of normal background levels used to inflict lethal or incapacitating casualties, generally on civilian population, as the result of terrorist attack.

Recovery Operation – An operation involving the retrieval of either (1) the remains of a deceased victim or (2) property, but in no case a living person.

Reinforcement – The addition of extra material for enhanced protection in areas prone to compression or abrasive wear such as knees, elbows and shoulders.

Rescue Operations – Those activities directed at locating endangered persons, removing endangered persons from danger, treating the injured at an emergency incident and providing transport to an appropriate health care facility.

Respirator – A device that provides respiratory protection for the wearer.

Retroreflection/Retroflective – The reflection of light in which the reflected rays are preferentially returned in the direction close to the opposite of the direction of the incident rays, with this property being maintained over wide variations of the direction of the incident rays.

Retroreflective Markings – A material that reflects and returns a relatively high proportion of light in a direction close to the direction from which it came.

SCBA – Self-Contained Breathing Apparatus; a respirator worn by the user that supplies a respirable atmosphere that is either carried in or generated by the apparatus and is independent of the ambient environment.

SDS – Acronym for Material Safety Data Sheets.

Seam Tape – The seam tape is a chemical/biological protective laminate, consisting of a outer aramid backer, a continuous fluoropolymer barrier film and a heat sealable proprietary adhesive.

Seam – Any permanent attachment of two or more protective clothing materials, excluding external fittings, gaskets, and garment closure assemblies, in a line formed by joining the separate material pieces.

Soap – A cleaning product usually consisting of sodium or potassium salts of fatty acids. Do not use soap to clean protective ensembles. See also Cleaning product and Section 11 of this Guide.

Sock – An extension of the garment or suit leg or a separate item that covers the entire foot and is intended to be worn inside a protective outer boot.

TICS – Acronym for Toxic Industrial Chemicals.

TIMS – Acronym for Toxic Industrial Materials.

Toxic Industrial Chemicals – Highly toxic solid, liquid or gaseous chemicals that have been identified as mass casually threats that could be used as weapons of terrorism to inflict casualties, generally on civilian population, during a terrorist attack.

TPP – Thermal Protective Performance. A test to determine the ability of an Ensemble Composite to withstand a measured amount of thermal and radiant heat.

Trilaminate – Three-layer chemical/biological protective fabric, consisting of an outer shell fabric, a barrier layer and an inner liner fabric laminated together to form a single ply.

Trim – Retroreflective and fluorescent materials attached to the outermost surface of the protective ensemble for visibility enhancement. Retroreflective materials enhance nighttime visibility, and fluorescent materials enhance daytime visibility. "Trim" is also known as "visibility markings".

Useful Life – The period of time that protective clothing, which has been properly cared for, could be expected to provide reasonable limited protection.

UV (Light or Radiation) – Acronym for Ultraviolet Light, a type of light commonly found in the sun’s rays.

Universal Precautions – A concept under which blood and CERTAIN body fluids pose a risk for transmission of bloodborne diseases.

3. SAFETY CHECKLIST

Do not use this NFPA 1994 Class 1 and 2 and NFPA 1992 Compliant Ensemble until you have checked “YES” to the following activities:

1. Have you completed a formal training course in Hazardous Materials operations and Chemical/Biological Terrorism Incidents, the proper use of Hazardous Materials and Chemical /Biological Terrorism equipment, as well as the safe usage of NFPA 1994 Class 1 and 2 and NFPA 1992 Compliant Ensembles?
   ❑ Yes ❑ No

2. Have you read and understood all the instructions and warnings in this guide as well as all the labels on NFPA 1994 Class 1 and 2 and NFPA 1992 Ensemble?
   ❑ Yes ❑ No

3. Will you regularly inspect this NFPA 1994 Class 1 and 2 and NFPA 1992 Ensemble inside and out for any tears, holes, thin spots, worn areas, color damage, dirt, contaminants, or embrittlement, or any other conditions discussed in Section 6 of this Guide? ❑ Yes ❑ No

4. Have you studied the limitations of NFPA 1994 Class 1 and 2 and NFPA 1992 Ensemble as described throughout this Guide and will you take precautions to prevent injury? ❑ Yes ❑ No

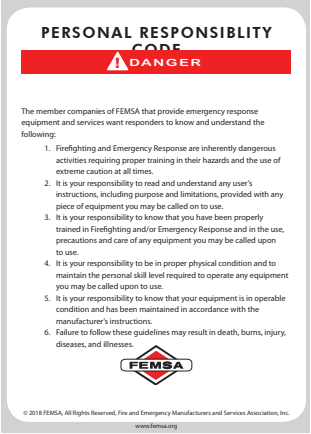
5. Have you checked to make sure that your NFPA 1994 Class 1 and 2 and NFPA 1992 Ensemble fits you properly in accordance with Section 8 of this Guide?
   ❑ Yes ❑ No

6. Have you, your safety officer, or another appropriate person made plans to ensure that this NFPA 1994 Class 1 and 2 and NFPA 1992 Ensemble is cared, used, inspected, maintained, stored and retired according to instructions in this Guide? ❑ Yes ❑ No

7. Are you aware that the protective properties in new NFPA 1994 Class 1 and 2 and NFPA 1992 elements, as required by the NFPA standards, can diminish as the product is worn and ages? ❑ Yes ❑ No

8. Have you read, do you understand and do you agree to assume the risks and responsibilities listed in the Personal Responsibility Code? See FIG. 1 and back cover of this Guide. ❑ Yes ❑ No

If you have answered NO to any of the questions, DO NOT WEAR THIS NFPA 1994 CLASS 1 AND 2 AND NFPA 1992 ENSEMBLE until you have read the appropriate sections in this Guide and have been properly trained by qualified instructors.



PERSONAL RESPONSIBLITY CODE

DANGER

The member companies of FEMSA that provide emergency response equipment and services want responders to know and understand the following:

1. Firefighting and Emergency Response are inherently dangerous activities requiring proper training in their hazards and the use of extreme caution at all times.
2. It is your responsibility to read and understand any user’s instructions, including purpose and limitations, provided with any piece of equipment you may be called on to use.
3. It is your responsibility to know that you have been properly trained in Firefighting and/or Emergency Response and in the use, precautions and care of any equipment you may be called upon to use.
4. It is your responsibility to be in proper physical condition and to maintain the personal skill level required to operate any equipment you may be called upon to use.
5. It is your responsibility to know that your equipment is in operable condition and has been maintained in accordance with the manufacturer’s instructions.
6. Failure to follow these guidelines may result in death, burns, injury, diseases, and illnesses.

FEMSA

www.femsa.org

FIG. 1
Personal Responsibility Code Also shown on back cover of this Guide.

4. PURPOSE AND LIMITATIONS OF YOUR ENSEMBLE

Do not use for ANY firefighting.

Do not use for direct contact with flames or molten metal.

Do not use for protection against hazardous radiological environments.

This Ensemble is designed to provide LIMITED protection to the torso, legs, feet, arms, hands, and head against hazards to Emergency Responders involved in Hazardous Materials Emergencies and Chemical/Biological Terrorism Incidents, including:

- Limited chemical splash protection
- Limited protection against particulate environments
- Limited protection against vaporous and liquid chemical/biological terrorism agents (dual use industrial chemicals, chemical terrorism agents or biological terrorism agents)
- Limited protection against penetration by blood and bodily fluids.
- Limited flame resistance
- Limited protection against physical puncture and abrasion
- Limited protection against exposure to adverse weather
- The respiratory protection certified with this NFPA 1994 Class 1 and 2 and NFPA 1992 Ensemble has not been evaluated for chemical permeation resistance consistent with the other Ensemble elements.

SEE SEPARATE TECHNICAL DATA PACKAGE FOR LISTING OF CHEMICALS FROM WHICH THIS ENSEMBLE PROVIDES PROTECTION.

MT-94 Ensembles are certified with the following respiratory protection facepieces:

- Scott AV3000 HT Facepiece
- Scott AV3000 Surseal Facepiece
- Scott Vision C5 Facepiece
- MSA G1 Facepiece
- MSA Ultra Elite Facepiece
- Draeger FPS 7000/ DHR 7000

See separate technical data package for listing of respiratory protection or contact LION for more information.
The respiratory equipment certified for use with this ensemble has not been evaluated for chemical permeation resistance consistent with the other ensemble requirements.

⚠ DANGER

THIS ENSEMBLE WILL NOT PROTECT YOU AGAINST THE FOLLOWING HAZARDOUS SITUATIONS:

- ALL firefighting operations
- ALL direct contact with flames or molten metal
- ALL electrical hazards
- ALL radiological agents
- ALL liquefied gas and cryogenic liquid hazards
- ALL explosive atmospheres

⚠ WARNING

Controlled lab tests in the NFPA 1990 standards “cannot be deemed as establishing performance levels for all situations to which Hazardous Materials Operations or Chemical/Biological Terrorism Incidents personnel can be exposed.” You should use extreme caution in any hazardous materials situation to avoid the risk of injury. See NFPA 1990, Para. 1.2.3.

⚠ WARNING

Protective properties in a new NFPA 1992 or NFPA 1994 Class 1 and 2 compliant Garment will diminish as the product is worn and ages. To reduce the risk of injuries, you MUST follow the recommendations in this Guide for inspection and retirement of your Ensemble to ensure that the Ensemble is not used past its Useful Life.

5. ENSEMBLE CONSTRUCTION, FEATURES, AND FUNCTION

In order to know the function and limitations of your NFPA 1994 Class 1 and 2 and NFPA 1992 Compliant Ensemble, you should study its construction, features and function.

5.1 OVERVIEW

Your NFPA 1994 Class 1 and 2 and NFPA 1992 Compliant Ensemble helps protect you against Hazardous materials incidents and Chemical/Biological Terrorism incidents. The AHJ in your organization shall comply with the requirements of NFPA 1891 for the selection, care and maintenance of your protective ensemble and ensemble elements.

5.2 TRILAMINATE CONSTRUCTION

Your NFPA 1994 Class 1 and 2 and NFPA 1992 Compliant Ensemble is made of a trilaminate: a three-layer chemical/biological protective fabric, consisting of a continuous fluoropolymer barrier film laminated between outer and inner aramid textiles.

The woven outer textile and the knit inner textile provide strength and durability to the chemical protective layer. This chemical protective fabric is not a moisture-permeable or air-permeable barrier.

5.3 OTHER IMPORTANT SAFETY FEATURES (FIG. 2A1 AND FIG. 2A2)

Hood: Attached to Garment to protect head and neck from exposure). Provided with a seal to interface with specified respiratory protection facepiece. The hood protects the head and neck from exposure. Attached hood provides seal and interface with specified respiratory protection face piece. (See technical data package for specific models of approved respiratory protection and the specific model(s) used to achieve compliance.)

Attached Glove System: 1 An inner glove and outer-glove system. Depending on which model you have, your inner glove would either be sewn on; OR be attachable via glove ring system. The inner glove provides limited chemical and biological protection to your hands and wrists. The removable outer glove is designed to provide limited protection from debris and flash fire as well as from cuts and abrasion. (See also FIG. 2B; FIG. 2C.)

Both the inner glove and the outer glove must be worn together to comply with NFPA 1994 Class 1 and 2 and NFPA 1992 Standards.

Closure Systems: 2 On the rear or front of the Garment.

The zipper must be fully engaged on the garment closure and the storm flap's hook and loop closure secured.

Sock: 3 Attached socks provide chemical and biological protection while your recommended "outer boots" provide physical protection. Socks are designed to be worn on the inside of your ensemble-certified outer boots. Socks should never be worn as outer boots. (See technical data package for specific models of certified outer boots.)

Reinforcements: 4 Provide important extra protection against cuts and abrasion in high wear areas.

Labels: 5 There are two important safety and information labels, all located on the inside of the Garment near the closure. The Danger and Cleaning Label provides critical safety information and directs you to read and understand this Guide. The label also explains the product information and wash instructions. The Certification Label warns the user about the need to always wear the Ensemble with the proper gloves, boots and respirator.

Samples of the labels are located on page 2 of this Guide.

Retroreflective and Fluorescent Trim: 6 (Optional) Improves visibility in low-light conditions.

Loop Patch: 7 Hook and loop identity patch.

FIG. 2A1
The Back Entry Garment Element of the NFPA 1994 Class 1 and 2 and NFPA 1992 Compliant Ensemble.

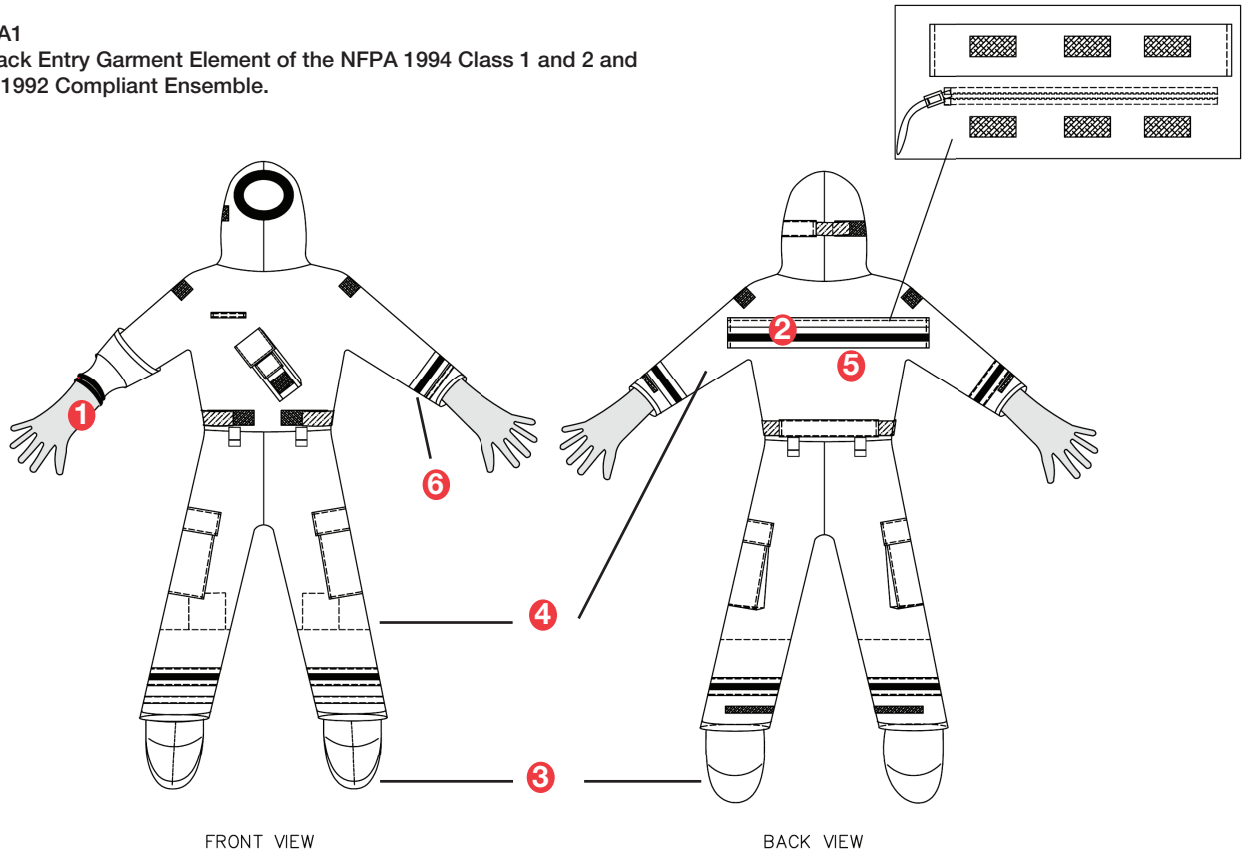


FIG. 2A2
The Front Entry Garment Element of the NFPA 1994 Class 1 and 2 Compliant Ensemble.

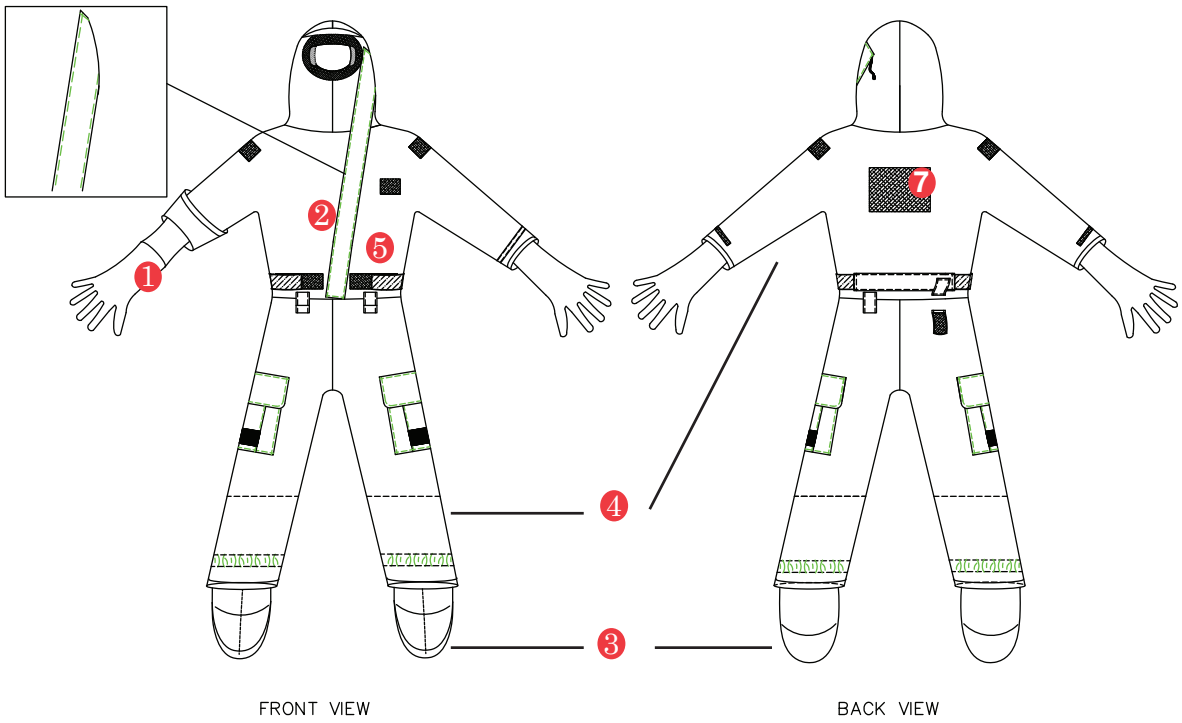


FIG. 2B
The "Ring System Attached Glove" Element of the NFPA 1994 Class 1 and 2 and NFPA 1992 Compliant Ensemble may be removed and replaced using the following instructions and replacement components from LION.

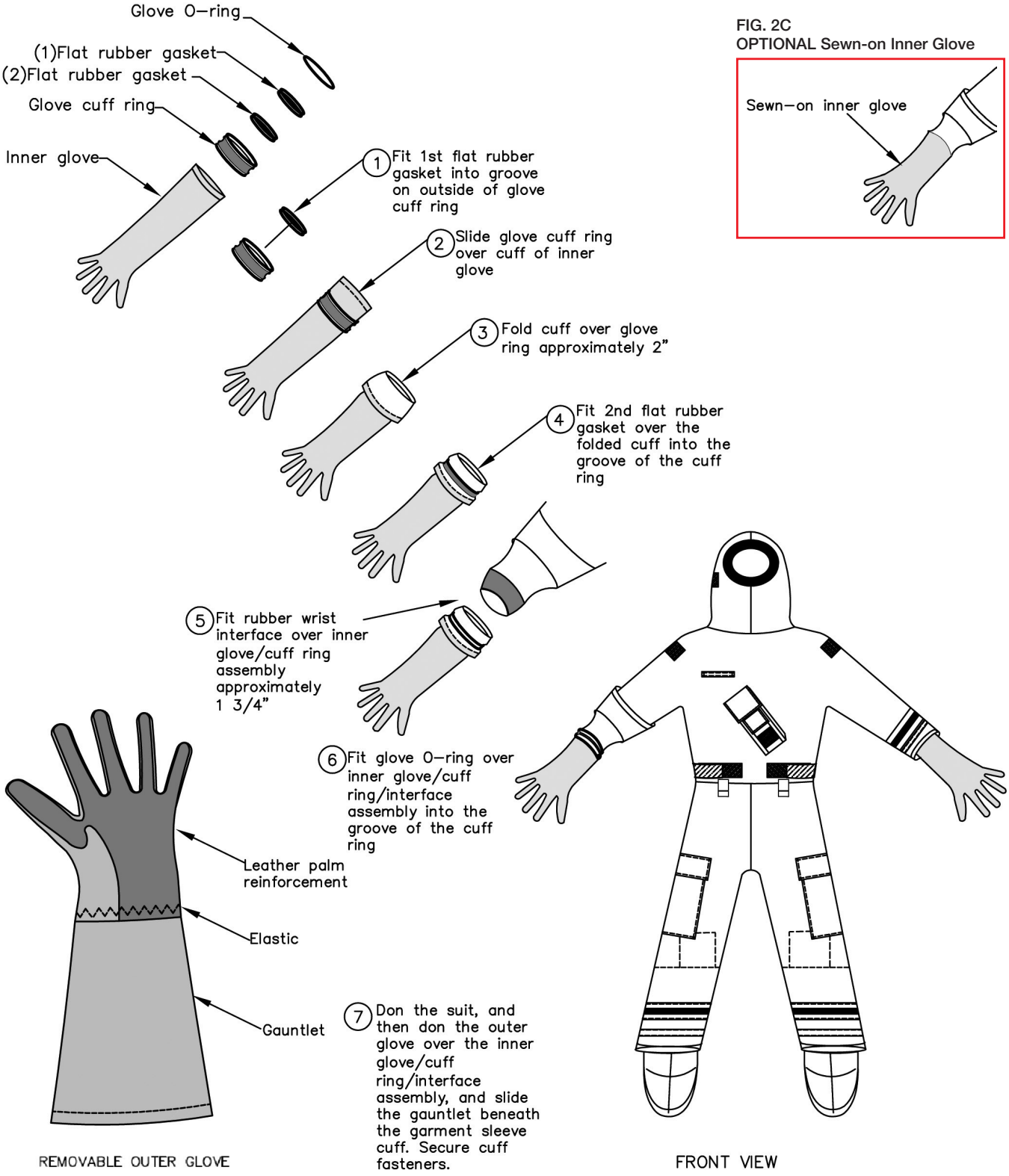


FIG. 2C
OPTIONAL Sewn-on Inner Glove

For a demonstration of the glove ring assembly along with donning and doffing instructions, watch our training videos at www.lionfireacademy.com.

6. INSPECTION

Your Ensemble should be cleaned, inspected, and repaired in a frequency and manner consistent with your organization's protocol, NFPA 1890 and NFPA 1990.

6.1 PREPARATION

Read all labels first. There are two important information Labels (See Section 5.3 for location.) If the safety labels are missing, return the Ensemble to the manufacturer immediately.

6.2 FREQUENCY

Inspection:

You should inspect your NFPA 1994 Class 1 and 2 and NFPA 1992 Compliant Ensemble at the following times:

1.) Upon receipt of your new Ensemble or replacement component;
2.) After each use and washing during the useful life of the Ensemble;
3.) After exposure to heat or flames;
4.) After exposure to chemicals or bodily fluids (including blood); and
5.) After cleaning, repair or decontamination and prior to storage.
6.) Even if not worn, you must inspect your Ensemble at least annually and at the above intervals to detect more obvious damage and deterioration.

Whenever you detect a potential problem through your own inspection, or suspect that the protective qualities might be degraded, your entire Ensemble should be inspected by a trained expert in your Authority Having Jurisdiction, or a LION TotalCare® Center. (Those listed in the back of this Guide have specialized inspection equipment.)

⚠ WARNING

If chemicals, blood or other potentially harmful materials penetrate an Ensemble while you are wearing it, remove the Ensemble immediately, or as soon as it is safely feasible.

⚠ WARNING

Inspect your Ensemble at the end of each operation. Chemicals, blood and other hazards may be difficult to see on dark fabrics. Wear gloves during inspection.

6.3 INSPECTION PROCESS AND CRITERIA

This section describes Routine Inspection of the GARMENT ONLY. See Glove User Guide for glove inspection instructions, and Boot User Guide for boot inspection instructions. These instructions will vary from the Garment instructions.

1. Preparation for Inspection

   Place the Ensemble on a clean surface in a brightly-lit area. Lay the Garment flat to remove the wrinkles. Check the suit entirely inside and out.

2. Inspecting the Garment outer surface:

   A. Fabric: Examine the Garment, hood, inner glove, outer glove, sock, and facepiece seal materials for dirt, discoloration, thin spots, holes, cuts, punctures, tears, embrittlement, cracking, abrasions and worn spots.

      a. Any of the above could indicate leakage.

      b. Discoloration may be a sign of overexposure to light or heat or improper care. If an area appears to be weak, you should have a trained expert or a LION TotalCare® Center inspect it.

      c. Embrittlement or cracking are signs that the Ensemble must be inspected thoroughly by a trained expert or a LION TotalCare® Center.

B. Closure Systems: Examine for functionality and damage.

a. Hook and Loop – Examine and disengage hook and loop attachments to make sure they function well. Examine for worn or abraded pieces that require replacement. Check stitching for any signs of curling that would indicate a repair is required.

b. Zippers – Examine all zippers for functionality that would require replacement. Ensure that all zippers completely close. Check for cuts or tears in the rubber zipper tape material that could be a possible leakage point. Check seams for loose tape that would indicate a repair is required.

C. Reinforcements and Pockets: Examine all reinforcements and components to make sure they are securely sewn to the Garment. Check Hook and Loop or snap fasteners on pocket flaps for functionality and damage.

D. Accessories: Check all accessory items to ensure that they meet manufacturer's specifications and approval.

E. Stitching and Seams: Examine all seams for loose threads, breaks, skipped stitches or weaknesses.

3. Inspection of the Garment inner surface:

Turn Garment inside out, **do not invert the glove liner,** and place on a clean surface in a brightly-lit area. Lay the Garment flat to remove the wrinkles.

A. Fabric: Examine the Garment, hood, inner glove, outer glove, sock and facepiece seal materials for dirt, discoloration, thin spots, holes, cuts, punctures, tears, embrittlement, cracking, abrasions and worn spots.

a. Any of the above could indicate leakage.

b. Discoloration may be a sign of overexposure to light or heat or improper care. If an area appears to be weak, you should have a trained expert or LION TotalCare® Center inspect it.

c. Embrittlement and cracking are signs that the Ensemble must be inspected thoroughly by a trained expert or a LION TotalCare® Center.

Examine for unusually thin spots where the inner surface has been damaged by sliding your hands across fabric and feeling for holes or places where your hand does not slide freely. If you see or feel thin areas, rough spots, ridges, cracks or holes this could indicate breakdown.

B. Stitching and Seams: Examine all seams for loose or damaged tape, loose threads, breaks, skipped stitches or weaknesses. There should be no lifting of seam sealing material. Check seam integrity by gently pulling on the seams.

C. Internal Suspenders: Make sure all fasteners are in place and working properly. Make sure attachments to Garment are secure.

4. Interface Areas:

   Check the structural integrity of all parts and ensure that they create a secure seal.

   A. Garment face/mask rubber seal: Examine all interface areas for signs of deterioration, cracking, splitting and discoloration as these are indications of potential failure.

   B. Glove attachment (FIG. 2B; FIG. 2C) - Examine all interface areas for signs of wear, deterioration, cracking, splitting and discoloration as these are indications of potential failure and indicate a repair is required.

      a. Replaceable glove ring system: Examine for functionality, stretching and correct placement of glove cuff rings, glove O-rings and flat rubber gaskets. Replace flat rubber gaskets at least once annually.

      b. Attached glove system: Where there are seams, examine for lose or damaged tape, loose threads, breaks, skipped stitches or weakness. There should be no lifting of seam-sealing material. Check seam integrity by gently pulling on the seams.

5. Labels:

   A. Presence: Verify that all Safety and Information labels are on the Ensemble. See p. 2 and Section 5.3.

   B. Legibility: Make sure that all Safety and Information Labels are legible and securely attached to the Ensemble.

   C. Number of Uses: Inspect Garment for number of uses marked on the Danger/Cleaning Label. After a maximum of five (5) launderings or ten (10) wearings, the Garment should be retired or be carefully inspected for retirement considerations.

Specialized equipment used by LION and LION TotalCare® can detect leaks that may be undetectable by the end user or by the AHJ. Remove from service any garment that shows signs of degradation anywhere and contact LION or LION TotalCare® for a complete inspection.

⚠ WARNING

Most performance properties of the Ensemble and its components cannot be tested by the user in the field.

6.4 RECORDKEEPING

LION TotalCare® Centers offer record keeping services. For manual records, record all inspections and your results on the *Inspection, Cleaning, Repair, Retirement and Disposal Record* located in the back of this guide. Maintain this form unless your organization has provided you with a comparable record keeping method for this purpose.

This Garment also has a Record of Use section on the Danger/Cleaning Label found on the inside of the Garment, below the zipper on the back of the Garment. Each use and each laundering of the Garment must be marked properly on the label. See Section 9.2.

7. DONNING AND DOFFING

PREPARATION: Before donning:

A. Verify that the Garment has been inspected and is free from damage.
B. Ensure the Ensemble is appropriate for the hazard to be encountered.
C. Have other trained personnel available to help you don the Garment.
D. Wear underclothing beneath the Garment: at least a short sleeve shirt and pants, or long underwear. Consider wearing flame resistant underclothing.
E. Remove footwear and all personal affects that might damage the Garment (e.g., pens, badges, jewelry, wrist watches, etc).

⚠ *DANGER*

NEVER wear the Garment without the correct respirator, footwear and gloves; NEVER wear the Garment without all elements in place. The Garment alone does not provide protection against flame, chemical and biological hazards.

7.1 DONNING

"STAND-BY" MODE:

1. With the zipper unfastened, hold open the Garment.
2. Step into the Garment, and ensure your feet are all the way into the socks. Pull Garment to the waist, fasten the suspenders securely and adjust them for a snug fit.
3. Step into your protective footwear.
4. Slide outer shell of Garment leg over each boot.
5. For Front Entry models, bring the zipper up to mid torso to allow closure of waist take-up straps in order to cinch Garment belt and attach optional duty belt.
6. For both models, the Garment's torso and arms may hang loosely at your side while you are in "stand-by" mode.

"READY" MODE FOR FRONT ENTRY MODELS:

1. Don respirator facepiece.
2. Slide upper half of Garment over shoulders, insert arms into the sleeves and ensure your hands and fingers are all the way into the attached inner gloves.
3. With the help of a trained partner, extend attached hood over your head.
4. Adjust the garment facepiece gasket. Look upward with your chin in the air while adjusting the contact points of the facepiece interface gasket for a tight seal. Start under the chin and work around both sides of the facepiece to the top. Ensure that the butyl gasket of the hood overlaps and lays flat against the respirator facepiece. Ensure the gasket is as close to the facepiece lens perimeter as possible.
5. Once the garment is completely donned, pull the zipper up about ¾ of the closure length. Cross the arms over chest and squat to expel excess air inside suit. Carefully zip up the front closure all the way to the left side of face (use caution not to catch barrier material in zipper). Ensure the zipper is completely closed against the zipper stop. Stand up and adjust all take-up straps on the garment.
6. Trained personnel should assist you with this step: inspect the hood-to-facepiece seal, to ensure that it is sealed tightly. Ensure there are no gaps between the facepiece and the seal.

7. Ensure the zipper is closed all the way and no gap is visible at the top of the zipper. Secure the storm flap.
8. Make any additional adjustments to take-up straps so that Garment is snug on your body.
9. Don the outer gloves over the inner gloves and into the sleeve well.
10. Tighten wrist adjustment straps.
11. Once the garment is properly fitted, don the SCBA as recommended by the SCBA manufacturer.
12. When properly fitted and correctly donned, the garment leg cuffs should be no less than 2" and not more than 5" off the floor.

"READY" MODE FOR REAR ENTRY MODELS:

1. Don respirator facepiece.
2. Place arms into sleeves and ensure your hands and fingers are all the way into the attached inner gloves. Put on outer glove and secure the gauntlet of the outer glove into the sleeve.
3. Pull the upper portion of the coverall over your head and onto your body. Look up while you pull the hood onto your head.
4. Adjust the garment facepiece gasket. Look upward with your chin in the air while adjusting the contact points of the facepiece interface gasket for a tight seal. Start under the chin and work around both sides of the facepiece to the top. Ensure that the butyl gasket of the hood overlaps and lays flat against the respirator facepiece. Ensure the gasket is as close to the facepiece lens as possible.
5. Trained personnel should assist you with this step: inspect the hood-to-facepiece seal to ensure that it is sealed tightly. Ensure there are no gaps between the facepiece and the seal.
6. Once the garment is completely donned, pull the zipper across the back to about ¾ of the closure length. Cross the arms over chest and squat to expel excess air inside suit. Fully close the zipper and ensure the zipper is fully closed against the zipper stop. Stand up and adjust all take-up straps on the garment.
7. Ensure the zipper is closed all the way and no cap is visible at the top of the zipper. Secure the storm flap.
8. Make any additional adjustments to take-up straps so that Garment is snug on your body.
9. Don the outer gloves over the inner gloves and into the sleeve well.
10. Tighten wrist adjustment straps.
11. Once the garment is properly fitted, don the SCBA as recommended by the SCBA manufacturer.
12. When properly fitted and correctly donned, the garment leg cuffs should be no less than 2" and not more than 5" off the floor.

Trained personnel should assist you with this step and should inspect the integrity of each interface area when donned to ensure a good seal:

- Circumference of the facepiece/attached hood
- Complete zipper closure
- Glove-to-sleeve
- Sock-to-pants leg

The design of this Ensemble is certified without the use of additional taping during donning. No additional taping should be utilized at the interfaces.

7.2 FINAL INSPECTION BEFORE ENTERING HAZARD AREA

Last and most important, to ensure proper donning before entering a hazard area, you must have a partner inspect your interface areas for proper overlap and to ensure all closures are secured properly.

⚠ *WARNING*

Be sure that all interface areas have been inspected for proper installation. Failure to properly assemble inner gloves to sleeves or seal mask and hood will reduce the protection of the Ensemble. See FIG. 2B for proper alignment of components. Tape shall not be used to create an interface between ensemble elements or closures.

7.3 DOFFING (REMOVING) YOUR ENSEMBLE

Always wear your full Protective Ensemble during all phases of the operation. After the emergency operation is completed, you have been through decontamination, and you are in a safe area, it is important to ventilate your body as quickly as possible in order to cool down. However, remove your Protective Ensemble ONLY when you are certain that you are safely out of the hazard area. Doffing the Ensemble should be performed with trained personnel

DOFFING AN UNCONTAMINATED ENSEMBLE

A. When you are ready to remove your Ensemble, you should unharness and remove your SCBA, but your facepiece should remain on until garment is completely doffed.
B. Loosen all take-up straps, remove duty belt and outer gloves.
C. With the assistance of a decon team or trained personnel, begin to remove your ensemble.
D. Disengage the storm flap closure and have trained personnel unzip the garment zipper.
E. Once the zipper is completely opened:

   Front Entry – Trained personnel should carefully break the facepiece to hood gasket seal. Then the assistant can separate the seal from the SCBA facepiece 360° around the neck while applying pressure to the facepiece. Then pull the hood portion of the garment off over your head and slide the garment upper torso off the shoulders. Remove your arms and hands from the gloves and sleeves, **do not invert the inner gloves.**

   Rear Entry – Trained personnel should carefully break the facepiece to hood gasket seal. Then the assistant can separate the seal from the SCBA facepiece 360° around the neck while applying pressure to the facepiece. Then pull the upper portion of the garment off over your head. Remove your arms and hands from the gloves and sleeves, **do not invert the inner gloves.**
F. Unfasten the suspenders and invert the lower half of the garment as you slide it down below the knees. Remove protective footwear, then complete the garment removal.
G. Finally, remove the respirator facepiece.
H. During doffing always look for signs of chemicals, body fluids, or signs of wear or damage.

DOFFING A CONTAMINATED ENSEMBLE

If the Ensemble has been exposed to hazardous chemicals, follow your department's standard operating procedure for decontamination of personal protective equipment on the scene before you remove your Ensemble.

A. Remove your Ensemble according to steps A-H on previous page, carefully avoiding contact with contaminated parts.

B. If indicated in your department's standard operating procedure for the safe handling of contaminated equipment after certain types of exposures, hose the Ensemble down at the scene with a low-pressure setting.

C. Place the Ensemble in plastic bags to allow safe handling by laundry personnel. An Ensemble exposed to body fluids can be cleaned and disinfected to reduce the risk of exposure to bloodborne pathogens. See Washing, Decontamination, and Disinfecting Procedures in Section 11 of this Guide.

D. If applicable, have the Ensemble fully decontaminated, washed, and visually inspected. If decontamination procedures are not applicable, the Ensemble should be disposed of in a safe manner. See Washing, Decontamination, and Disinfecting Procedures in Section 11 of this Guide.

8. COMPATIBILITY AND PROPER FIT

8.1 PROPER FIT OF GARMENT

Your Garment must have adequate looseness in the torso, arms and legs. If the Garment bunches at the shoulders or binds in the shoulders, arms, thighs or crotch area, it is probably too small. Also, the garment should not be too loose, as this could hinder mobility or dexterity and place stress at the wrong places in the Garment. Upon receiving a new or replacement Garment, make sure there are at least a few inches of loose material around the arms, shoulder area and crotch. Then test the mobility by climbing stairs and crawling or duck walking.

The glove should fit adequately so that you can remove and reinsert your hands into the gloves while wearing the ensemble. With the over-glove removed grasp the inner-glove at the fingers, remove hand from glove without inverting the fingers/hand and reinsert your hand in the inner glove. Ensure the over-glove is donned prior to use.

8.2 PROPER SIZE

If any element of your Ensemble does not seem to fit properly, you should check the size in the label to make sure it is your correct size as measured, and to make sure it is your assigned Ensemble.

⚠ *DANGER*

Never wear an Ensemble that fits improperly. If you have a question, or there is a problem with the fit of the Ensemble, contact your safety officer for assistance. Wearing an Ensemble that does not fit properly could reduce protection and result in severe burns, cuts, or abrasions, or dangerously restrict your ability to avoid injuries in an emergency situation.

9. MARKING CONSIDERATIONS

> **⚠ CAUTION**
>
> Only mark in the designated areas on the safety or cleaning and information labels on your ensemble!

The Ensemble is equipped with exterior loop patches for the application of corresponding hook name or ID patches. To create identifying marks elsewhere on the ensemble, you may use an indelible laundry marker. LION recommends marking the Ensemble in the following manner:

9.1 First, check the Danger/Cleaning Label (it has a barcode on it) to determine whether adequate identifying information was already printed by the manufacturer. Samples of each label are located on page 2 of this Guide.

9.2 Mark the number of uses and laundering cycles with an "X" as indicated on the label with an indelible laundry marker only. White space is provided beneath the cleaning section of the label onto which you may mark other critical information.

9.3 Do not apply letters, emblems, trim, and/or other types of identification that may penetrate the Ensemble. Do not write on the inside or outside of the Ensemble. Indelible inks could damage the film or coating.

10. USING YOUR ENSEMBLE SAFELY: HOW TO MINIMIZE THE RISK OF INJURY

Always use your NFPA 1994 Class 1 and 2 and NFPA 1992 Protective clothing properly and in a manner consistent with the following:

- The Authority Having Jurisdiction's standard operating procedures;
- NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program;*
- NFPA 1581, *Standard on Fire Department Infection Control Program;*
- Title 29, Code of Federal Regulations (CFR), Part 1910.132 "General Requirements of Sub part I, Personal Protective Equipment"; and
- Title 29, CFR 1910.1030, "Protecting Healthcare Workers from Occupational Exposure to Bloodborne Pathogens".

Users outside the U.S. should consult national or other applicable personal protective equipment regulations.

10.1 PREPARATION

Before beginning any emergency operation, your Ensemble should be donned according to the procedure in Section 7 of this guide, and checked by another person for proper interface.

⚠ DANGER

Always clean and thoroughly dry any Ensemble used in any Hazardous Materials operation. Soiled or contaminated Garments may not provide proper protection causing serious injury the wearer.

10.2 HEAT STRESS: A SIGNIFICANT CAUSE OF INJURIES

Physical work in a warm or hot environment causes a rise in the temperature inside the body. To protect the body against heat, the heart begins to beat faster so that more blood can be moved to the skin surface. Blood vessels near the skin dilate so they can carry more blood. In this way, blood in the interior of the body can be brought out near the body's surface and cooled. Most importantly, the body produces sweat which evaporates off the skin to provide cooling. These natural responses do not work very well for any or all of the following conditions: the ambient air temperature is 75 degrees or higher, the Garment's insulation blocks the transfer of heat away from the body, the Garment blocks the evaporation of sweat, or the exertion of the muscles produces more heat than the system can remove. When body temperature elevates too high, the results can be heat stress, heat exhaustion, or heat stroke.

⚠ WARNING

Overexertion in hot conditions while wearing Ensemble can lead to heat exhaustion, or heat stroke. Symptoms of **heat exhaustion** are a general feeling of weakness, dizziness, rapid pulse, low blood pressure while standing or sitting, and/or a headache. The skin may feel moist or clammy. If you feel symptoms, get to a cool place, remove your Ensemble, and drink fluids. Failure to seek attention could lead to coma or death.

⚠ WARNING

Symptoms of **heat stroke** are hot, dry skin with no sweating, very high body temperatures, weakness, dizziness, rapid breathing, nausea, unconsciousness, and mental confusion. If you feel any of the above symptoms at any time, get to a cool area immediately, remove your Ensemble, drink fluids and seek medical attention. Failure to seek attention could lead to coma or death. Immediate cooling is essential for survival in heat stroke cases.

10.3 HEART ATTACKS: A RESULT OF OVEREXERTION

Certain activities that may be undertaken during Hazardous Materials operations will cause the heart to beat faster because of the need to move more blood to the working muscles. This blood carries more oxygen to the muscles so they can handle the increased workload.

Another factor in increasing the rate of the heart is the presence of adrenaline, the fight or flight hormone, in the body during an emergency. The adrenaline present in your system causes the heart to pump even faster than during normal activity.

All of these factors could place too much stress on the heart, leading to a heart attack. The heart simply cannot handle the load placed on it.

⚠ WARNING

You must be physically fit to safely perform strenuous work under stressful conditions. Regular cardiovascular exercise, abstaining from cigarette smoking, proper training, a healthy diet, and avoidance of obesity, can help to reduce the risk of a heart attack.

⚠ WARNING

Due to the fact that this Garment is not moisture vapor breathable, appropriate safety measures including monitoring of vital signs, duration of work, limiting the duration of work, and using proper rehab procedures post incident.

10.4 ELECTROCUTION

⚠ WARNING

Your Ensemble is NOT designed to protect you against electrocution. When entering a building, you should NEVER touch live wiring, especially if your Ensemble is wet. Never allow equipment you are operating to contact live wiring.

10.5 BLOODBORNE PATHOGENS

Your Ensemble is designed to protect your body from the hazards of exposure to bloodborne pathogens present in human body fluids. Exposure incidents are specific contact of the following with blood or O.P.I.M. (Other Potentially Infectious Materials): eye; mouth or other mucous membranes; non-intact skin; or parenteral contact. Make sure face and mouth, eyes and nose, and non-intact skin are covered. Avoid contact with sharps. Use Body Substance Isolation Procedures when handling your ensemble if contaminated with body fluids. Cleaning your Ensemble will eliminate all hazards arising from its exposure to potentially hazardous body fluids.

10.6 CHEMICALS

Your Ensemble is designed to protect your body from:

- The hazards of exposure from chemical/biological terrorism incidents as required by: NFPA 1994 as incorporated in NFPA 1990, *Standard for Protective Ensembles for Hazardous Materials and CBRN Operations; a*nd
- Liquid chemical splash as required by NFPA 1992 as incorporated in NFPA 1990 *Standard for Protective Ensembles for Hazardous Materials and CBRN Operations.*

This protection is accomplished by means of the chemical protective layer.

This layer is tested for resistance to penetration by ten chemicals as specified in accordance with NFPA 1992 and for resistance to permeation by two terrorism warfare agents, one liquid toxic industrial chemical and four toxic industrial gases and vapors as specified in accordance with NFPA 1994 Class 1 and 2.

Contact LION for a copy of our Technical Data Package to see the list of chemicals from which this Ensemble will provide protection.

You could be exposed to an almost unlimited number of potentially hazardous chemicals or agents under a variety of concentrations, temperatures, lengths of exposure or other variables**. As of this writing, there is no single protective material that will protect against every hazard in every possible situation**. It is the responsibility of the Incident Commander, the Authority Having Jurisdiction and you the User to understand the limitations of this Ensemble and other risks and issues related to contamination by unknown/untested chemicals.

TYPES OF CHEMICAL TRANSFER

There are at least two ways in which hazardous chemicals and/or vapors can transfer from the Ensemble's (or other element's) exterior to its interior: Permeation and Penetration.

Penetration: This type of transfer happens when a chemical passes from one side of the element's surface to the other through a pinhole, tear, ruptured seam, unsecured closure or interface, or by some other physical means.

Permeation: This type of transfer happens when a vapor passes from one side of the element's surface to the other through the surface's microporous gaps (if any), or as a result of the surface's chemical reaction to a substance that allows it to pass through the material as a liquid, gas, or vapor. This could even occur when there are no visible signs of penetration.

Many chemicals are harmful in liquid form and/or in vapor form.

Your ensemble has been certified to the chemical permeation requirements of NFPA 1994 Class 1 and 2 and the chemical penetration requirements of NFPA 1992.

10.7 BURN HAZARDS: TYPES OF HEAT TRANSFER

There are three types of heat transfer in a fire that could cause burns: conduction, convection and radiation. Conduction is the direct transfer of heat through contact with a hot object. Convection is the transfer of heat through a medium; for example, air. Thermal radiation is the transfer of heat in the form of light energy, directly from flames or reflected from hot surfaces.

⚠ *DANGER*

This NFPA 1994 Class 1 and 2 and NFPA 1992 Compliant Ensemble does not provide and is not required by NFPA 1994 Class 1 and 2 or NFPA 1992 to provide thermal insulation. You will be seriously burned and you may be subject to heat stress or even death if you wear this Protective Clothing for ANY firefighting activity. See sections 4 and 5 of this guide for proper use of the Garment.

FLASH FIRE

Flash fire means fire that rapidly spreads through a diffuse fuel, such as dust, gas, or the vapors of an ignitable liquid, without the production of damaging pressure. Flash fires mainly produce hazardous radiant heat, as well as convective heat.

The single layer fire resistant fabric in the Ensemble provides minimal protection against heat and flames. This means that the fabric will self-extinguish when exposed to a flash fire, reducing the potential ignition of the fabric as a cause of injury. However, the fire resistant characteristic of the fabric does not prevent injuries caused by the convective or radiant heat generated by a flash fire from penetrating quickly through the Ensemble.

⚠ WARNING

Your Ensemble is NOT certified to the flash fire requirements of NFPA 1992.

⚠ WARNING

This NFPA 1994 Class 1 and 2 Ensemble **does not** provide and is not required by NFPA 1994 Class 1 and 2 or NFPA 1992 to provide thermal insulation. You will be seriously burned and you may be subject to heat stress or even death if you wear this Protective Clothing for ANY firefighting activity. See sections 4 and 5 of this guide for proper use of the Garment.

⚠ DANGER

Flash Fires are extremely dangerous incidents. The radiant and convective heat produced by a flash fire may be severe enough that you may be burned while wearing this Ensemble, and without sustaining damage to the Ensemble. If you sense combustible gasses or debris in the area, you should escape to a safe area until the dangerous condition has been eliminated.

⚠ DANGER

Emergency responders who are exposed to a flashover, backdraft, or other flame and high heat environments are at **EXTREME** risk for extensive burn injuries and death while wearing their NFPA 1994 Class 1 and 2 and NFPA 1992 Certified Ensemble!

10.8 BURNS

Burns are a function of time and temperature. The higher the temperature of the heat source and the longer the exposure time, the greater the severity of burns.

FIRST DEGREE BURNS begin when the temperature of skin reaches approximately **118° F (47.8° C).**

SECOND DEGREE BURNS occur when the skin reaches approximately **131° F (55° C).**

THIRD DEGREE BURNS occur when skin temperature reaches approximately **152° F (66.7° C)**.

Minimal protection against conductive burns: You can be burned by conductive heat when you contact heated surfaces or objects. Your NFPA 1994 Class 1 and 2 and NFPA 1992 Compliant Garment does not include a thermal liner, and therefore the Ensemble provides only minimal protection from conductive burns. It is critical to avoid contact with any

hot surfaces while wearing the NFPA 1994 Class 1 and 2 and NFPA 1992 Compliant Garment.Minimal protection against convective burns: Convective heat travels through the air, even if there is no immediate appearance of fire. However, convective heat can elevate the temperature of your Garment enough to cause a conductive heat burn when the fabric comes into contact with your skin. Therefore, NFPA 1994 Class 1 and 2 and NFPA 1992 Garments should not be used in situations of high temperature.

10.9 ADDITIONAL FACTORS AFFECTING SAFETY

The following additional factors may affect the limited protection provided by the Ensemble:

- Conditions at the incident beyond the scope of the limited purposes of this Ensemble;
- Unauthorized modifications, repairs or replacement of components of the Ensemble not otherwise in compliance with LION's specifications;
- The addition of accessories that are not approved by LION as compatible with NFPA 1994 Class 1 and 2 and NFPA 1992 certified Garments. If you have questions about whether accessories will degrade the performance of your Ensemble contact LION or a LION TotalCare® Center.

⚠ DANGER

This NFPA 1994 Class 1 and 2 and NFPA 1992 Compliant Ensemble does NOT include a thermal barrier for insulation against heat. To prevent being burned, you must avoid wearing this Ensemble in high temperature environments and avoid contact with any hot surfaces.

⚠ DANGER

You must only use NFPA 1994 Class 1 and 2 and NFPA 1992 Compliant Ensemble in environments where no structural fire is present. In rescue situations where fire is present, responders must only wear NFPA 1971 compliant structural firefighter clothing.

⚠ DANGER

The buildup of heat in an NFPA 1994 Class 1 and 2 and NFPA 1992 Compliant Ensemble can lead to burns without any sign of damage to the Ensemble. Never wait for signs of Ensemble damage to warn of imminent burns. Always be aware of your surrounding environment and be ready to escape if you begin to feel tingling or burning sensations.

⚠ DANGER

Responders who are exposed to a flashover, backdraft, or other flame and high heat environments are at **EXTREME** risk for extensive burn injuries and death while wearing their NFPA 1994 Class 1 and 2 and NFPA 1992 Compliant Ensemble!

11. WASHING, DECONTAMINATION AND DISINFECTION

The Ensemble is equipped with exterior loop patches for the application of corresponding hook name or ID patches. To create identifying marks elsewhere on the ensemble, you may use an indelible laundry marker. LION recommends marking the Ensemble in the following manner:

This section describes Routine Washing of the GARMENT ONLY. See Glove User Guide for glove cleaning instructions, and Boot User Guide for boot cleaning instructions. These instructions will vary from the Garment instructions.

11.1 HAZARDS OF DIRTY ENSEMBLES: WHY WASHING AND DECONTAMINATING IS IMPORTANT

You can be exposed to many hazardous substances while involved in hazardous materials incidents and chemical/biological terrorism incidents. These substances can contaminate your Ensemble, and cause harm to you after your body contacts your Ensemble. This section tells you how to wash and decontaminate your Ensemble to avoid these hazards.

Hazardous Chemicals: Your NFPA 1994 Class 1 and 2 and NFPA 1992 Compliant Garment's barrier and seams are tested against the following chemical challenges. The Garment barrier is tested for resistance to permeation of - Gases or vapors: **Acryonitrile, Ammoni (anhydrous), Chlorine, Diethylamine, Ethyl acetate.** Liquids: **Dimethyl sulfate, Tetrachloroethylene, Toluene.** See the technical data package for permeation resistance. The Garment barrier is also tested for resistance to penetration for 1 hour by **Butyl Acetate, Dimethylformamide, Fuel H, Isopropyl alcohol, Methyl isobutyl ketone, Nitrobenzene, Sodium hydroxide, Sodium hypochlorite, Sulfuric acid 93.1 percent and Tetrachloroethylene.** Over time, as the Garment is worn, the barrier's protection against penetration of these chemicals will become more limited. See Section 14 on useful life.

In addition, Hazardous Materials responders face potential exposure to an almost unlimited number of other potentially hazardous chemicals in their operations. Your NFPA 1994 Class 1 and 2 and NFPA 1992 Compliant Garment is NOT designed to protect against all hazardous chemicals. You MUST use appropriate chemical protective clothing in these situations.

Bloodborne Pathogens: You are also at risk of exposing your Ensemble to body fluids that may contain bloodborne pathogens. Following proper washing procedures described later in this section will adequately disinfect the material.

11.2 FIELD DECONTAMINATION

If you experience (or suspect that you have experienced) accidental or incidental exposure to a hazardous chemical or bloodborne pathogen, you need to follow the decontamination precautions set forth by your AHJ to limit exposure to yourself and others.

Before doffing, you should decontaminate your Ensemble at the scene to limit further exposure to hazardous chemicals, to prevent exposure to others and to prevent chemicals from settling into your Ensemble. A number of portable decontamination showers are available for this use. If you do not have a field decontamination shower, you should at least hose down your contaminated Ensemble before doffing to help you avoid harm from contaminants on the Ensemble's surface.

⚠ WARNING

Always wash your Ensemble separately from other items. Never wash your Ensemble at home, or at public laundry facilities to avoid the spread of chemical contamination or hazardous combustion products to other laundry.

11.3 FREQUENCY

Thoroughly clean and decontaminate your Ensemble as soon as possible after each wearing. Fully inspect your Ensemble (see Section 6) before reusing it.

never dry-clean

⚠ WARNING

Never use high velocity power washers or pressure hoses for washing your Ensemble. These tools can severely damage the raw materials and seams.

⚠ WARNING

Never Dry-Clean your Ensemble. There are many components in the Ensemble that will not function if dry-cleaned.

11.4 CLEANING PRODUCTS

This section describes Routine Washing of the GARMENT ONLY.
See Glove User Guide for glove cleaning instructions, and Boot User Guide for boot cleaning instructions, since these instructions will vary from the Garment instructions.

A. Commercially available cleaners. Use commercially available household cleaning products with a pH greater than 6.0 and less than 10.5. Many household cleaning products fall within this range.

B. Specialty Cleaners. Some manufacturers of cleaning products have developed products that can be used for Protective Clothing. Always read MSDS sheets before using these products. Contact LION at 1-800-421-2926 or the LION TotalCare® Center listed on page 35 of this Guide before using specialty cleaners.

C. Spot cleaners and Pre-Treatments should be non-solvent type. Do not use Chlorine bleach, fabric softeners, solvents or solutions with a pH less than 6 or greater than 10.5.

⚠ WARNING

Do not use fatty-based soaps due to their potential to form insoluble scums with hard water. Soap scums may be flammable and could adversely affect the protective performance of the Garment.

⚠ WARNING

Never use chlorine bleach or chlorinated cleaning products to clean your NFPA 1994 Class 1 and 2 and NFPA 1992 Hazardous Materials Ensemble. Even small amounts of chlorine will seriously reduce your Ensemble's protective qualities.

Never use cleaning products with citrus or d-limonene-based additives to clean your Ensemble as these may attack its rubber components.

no chlorine bleach

⚠ WARNING

Always wash your Ensemble separately from other items. Never wash your Ensemble at home or at public laundry facilities to avoid the spread of chemical contamination or hazardous combustion products to other laundry.

11.5 SPOT CLEANING AND NON-INCIDENT SOIL REMOVAL

Spot Cleaning

A. Use a cleaning product that is safe for use on protective clothing fabrics (See section 11.4 for acceptable products) to clean light spots and stains on your Garment and components.

B. Apply the cleaner one or two times to soiled areas according to the cleaning product manufacturer's instruction on dilution and application.

C. Thoroughly and carefully rinse Garment and components with warm water not to exceed 110° F (40° C).

⚠ WARNING

Do not use petroleum-based solvents to spot clean. These products may reduce the limited protective qualities of the Ensemble.

Non-Incident Soil Removal

Wipe and spray method that is acceptable only for simple soils and sweat.

A. Prepare a mild solution using a cleaning product that is safe for use on protective fabrics (see section 11.4 for acceptable products) and diluted to the agent manufacturer's instructions. Water should not exceed 110° F (40° C).
B. Gently wipe the fabric with a soft cloth.
C. Rinse with a low pressure garden hose.
D. Wash and rinse the outside of the Garment first, then the inside.
E. Dry according to section 11.8. Be sure the fingers in the gloves are dry.

⚠ WARNING

Hand washing does not provide effective cleaning for contaminated Garments. Do not hand wash Garments worn in an emergency incident or suspected of even incidental contamination.

11.6 HEAVILY SOILED AREAS

A. Air dry Garment before applying cleaning product.
B. Saturate the heavily soiled and surrounding area according to the cleaning product manufacturer's instructions on dilution and application. Follow the cleaning product instructions for duration of soaking.
C. Use a soft bristle brush (toothbrush or fingernail-type brush dipped in water) to gently scrub the soiled area for 1 or 2 minutes.
D. Thoroughly and carefully rinse with cool water.
E. Repeat steps B-D if necessary.
F. Place Garment into the washing machine as instructed in the wash procedures in this Section.

11.7 MACHINE WASHING

Preparation: Before washing, make sure you comply with all federal, state and local guidelines for handling effluents from utility sinks.

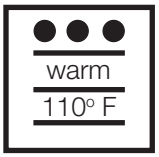
A. Spot-clean heavily soiled Garments following steps in the Spot cleaning procedures, in Sections 11.5-11.6 of this Guide.
B. If applicable, remove detachable inner gloves and associated hardware, turn the Garment inside out and leave the closure open. Hand wash gloves separately as instructed in the wash procedures in the Glove user guide.
C. If your Garment's inner gloves are sewn-on, turn Garment inside-out, but DO NOT invert the inner gloves.
D. Fasten all hook and loop closures to each other to reduce the likelihood of damage to delicate parts of your Garment.
E. Fasten internal suspenders.

Machine Settings

Use a front loading extractor or front loading washing machine with a tumbling action for washing. Do not use a top-loading machine, because it will not wash your Garment as thoroughly, and the agitator will damage it and reduce its durability and protective value.

The following machine settings should be used:

A. Wash temperature should not exceed 110° F (40° C).
B. Normal Cycle.
C. Use low extractor speeds, less than 100 g's.

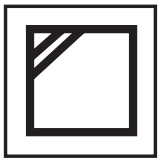


water temperature

Front-loading machine only. no mechanical agitiation. Normal wash cycle.


no chlorine bleach for Garment


line dry/ hang to dry


in the shade


never tumble dry


never dry-clean

D. Double rinse. Double rinsing removes residual dirt and insures cleaning product removal. If your machine will not automatically double rinse, a complete second wash cycle should be run without adding cleaning product.

⚠ WARNING

Cold, hot, or extended duration wash cycles will prematurely degrade the chemical permeation protection of the fabric.

Wash Procedures

A. Load machine with Garment to be washed. Follow machine manufacturer's instructions for proper load size. **Do not overload washer.**

B. Add cleaning prodcut per manufacturer's instructions. Never use Chlorine bleach; non-chlorine bleach may be used. Ensure accurate measuring tools are used for correct cleaning prodcut dosage. See Section 11.4 of this Section for cleaning products. Note: See Glove user guide for Glove cleaning instructions and Boot user guide for Boot cleaning instructions.

C. Set washing machine on normal cycle and start the wash cycle.

11.8 DRYING

A. Remove Garment from washing machine and keep it inside out to expose the inner surfaces. However, if your Garment's inner gloves are sewn on, do not invert the inner gloves. Check Garment for any areas where water may have collected or pooled. Drain these areas before hanging to dry.

B. Dry by hanging in a shaded area that receives good cross ventilation or use a fan to circulate the air.

C. Once the inside is completely dry, turn the Garment back to the correct side and dry the outside of the Garment.

D. Do not use automatic dryers because the mechanical action and excessive heat may damage or shrink your Garment.

E. Once Garment is thoroughly dried, attach clean gloves to sleeves per the instructions in Section 7.

F. After drying, apply an anti-blocking agent such as talc to the butyl rubber to detackify the surface and increase surface lubricity.

G. Inspect the entire Ensemble according to Section 6 of this guide.

H. Mark the number of wearing and laundering cycles with an "X" as indicated on the label with an indelible laundry marker only. White space is provided beneath the cleaning section of the label onto which you may mark other critical information.

LION TotalCare® Centers offer record keeping services. For manual records, note each cleaning, inspection, and related transaction on the *Inspection, Cleaning, Repair, Retirement and Disposal Record* located in the back of this Guide. Maintain this form unless your organization has provided you with a comparable recordkeeping method for this purpose.

NOTE: This NFPA 1994 Class 1 and 2 garment shall only be laundered a maximum of five (5) times before it's retired.

⚠ WARNING

Do not hang Ensemble to dry in direct or indirect sunlight, or in fluorescent light. Light will severely reduce the strength of the seams, and will discolor and greatly reduce the strength and protective qualities of the components of the Ensemble.

11.9 DO NOT DRY CLEAN

Never dry-clean your Ensemble. Dry-cleaning will damage the Ensemble and reduce its protective qualities.

11.10 CONTRACT CLEANING

LION recommends that only a LION TotalCare® Center be used for contract cleaning and inspection. Please refer to the back of this Guide for the LION TotalCare® Center authorized for NFPA 1994 Class 1 and 2 and NFPA 1992 Ensembles at time of printing this Guide. For an updated list call (800) 421-2926.

11.11 HAND WASHING IN A UTILITY SINK

LION does **NOT RECOMMEND** this method for washing NFPA 1994 Class 1 and 2 and NFPA 1992 Ensembles due to the risk of exposure to contaminants on the Ensemble surface.

11.12 DO NOT BRUSH WASH ON FLOOR OF STATION

LION does **NOT RECOMMEND** brush washing your NFPA 1994 Class 1 and 2 and NFPA 1992 Ensemble on the floor of the station because this method is not effective and may damage your Ensemble.

11.13 DECONTAMINATION AND DISINFECTION

Depending on the exposure, it can be difficult to determine whether chemicals have remained on an Ensemble after even after the most meticulous decontamination process has been performed. It is the responsibility of the Safety Officer in Charge, the AHJ, and the user to understand decontamination-related issues in order to make an informed decision concerning re-use of an NFPA 1994 Class 1 and 2 and NFPA 1992 Hazardous Materials Ensemble as chemical exposures may affect the material properties or potentially expose the user to harmful contaminants.

Applicable Standard. You must read and have facilities and procedures in compliance with NFPA 1581 Standard for Fire Department Infection Control Program.

⚠ WARNING

Ensemble materials such as butyl rubber face seal, rubber wristlets, and zipper will be adversely affected by exposure to petroleum oils and lubricants.

⚠ CAUTION

Personnel involved in the handling, sorting, bagging, transporting and laundering of contaminated NFPA 1994 Class 1 and 2 and NFPA 1992 Ensembles must wear utility gloves and appropriate protective clothing to prevent occupational exposure during these activities.

Preparation. Remove contaminated and infected NFPA 1994 Class 1 and 2 and NFPA 1992 Ensemble from wearer and from service before beginning. The Ensemble should remain out of service until decontaminated and disinfected. Wear protective gloves and appropriate protective clothing and equipment while decontaminating and disinfecting.

⚠ WARNING

To reduce the risk of harm from hazardous substances present in the products of fire combustion, building materials, hazardous chemicals, and blood or body fluids, you MUST wash, and if necessary, decontaminate or disinfect your NFPA 1994 Class 1 and 2 and NFPA 1992 Ensemble after each exposure to such hazardous substances.

⚠ WARNING

Only a trained expert in decontamination should attempt to decontaminate NFPA 1994 Class 1 and 2 and NFPA 1992 Ensemble. Contact a LION TotalCare® Center listed in the back of this Guide to seek assistance in determining whether decontamination is possible, and the name of the appropriate organization to perform decontamination.

A. Hazardous Chemicals

1. Before doffing, you should decontaminate your Ensemble at the scene to limit further exposure to hazardous chemicals, to prevent exposure to others and to prevent chemicals from settling into your Ensemble. A number of portable decontamination showers are available for this use. If you do not have a field decontamination shower, you should at least hose down your contaminated Ensemble before doffing to help you avoid harm from contaminants on the Ensemble's surface.
2. KNOWN MATERIALS: Contact the source of the materials, your local HAZMAT Team, or the Health Department to determine whether the contaminants are hazardous materials. If the contaminant is known, contact a LION TotalCare® Center listed in this Guide to determine the feasibility of decontamination.
3. UNKNOWN MATERIALS: If the contaminant is not known, NFPA 1994 Class 1 and 2 and NFPA 1992 Ensemble should remain out of service until the materials are identified. Always demand MSDS information and be prepared to share your findings with the LION TotalCare® Center decontaminating your Ensemble. If your Ensemble cannot be decontaminated, it must be retired and disposed of in accordance with federal, state, and local regulations.

B. Blood and Body Fluids

If your Ensemble has large areas of coverage of blood or body fluids, place and transport your Ensemble in a bag to prevent leakage. Contact a LION TotalCare® Center listed in this Guide to discuss disinfection.

11.14 LAUNDRY SAFETY

In the health care field, Laundry and Housekeeping personnel are considered to be among those at risk to not only hazardous materials, but also to bloodborne pathogens primarily by exposure to sharps. Your fire department should have a Bloodborne Pathogens Written Exposure Control Plan. Part of this plan is decontamination, disinfection, and washing of Ensembles, and it should include LAUNDRY ROOM SAFETY PROCEDURES and HOUSEKEEPING SAFETY PROCEDURES. You should follow all appropriate federal, state, and local regulations.

12. REPAIRS

There are no user replaceable components, including gloves, on this Ensemble. If a component requires replacement, contact LION at (800) 421-2926.

⚠ WARNING

DO NOT ATTEMPT TO REPAIR YOUR NFPA 1994 CLASS 1 AND 2 AND NFPA 1992 ENSEMBLE. Contact LION at (800) 421-2926 if your Ensemble requires repair.

13. STORAGE

Between incidents fold and bag your Ensemble according to the instructions in Section 13.1 below, and store away from sharp objects that may cause tears or snags in the fabric. **If your Ensemble has been worn, make sure that it has been laundered and thoroughly dried according to Section 11 of this Guide and thoroughly inspected before storing and re-using according to Section 6 of this Guide.**

To make the inside of your Garment dry faster, turn it inside out. Moisture inside the Garment reduces comfort and overall protection while you are wearing your protective clothing. Failure to dry your Ensemble will result in the growth of mildew and bacteria which could lead to skin irritation, rashes, or may affect the protective qualities of the fabrics and chemical protective materials.

13.1 FOLDING AND BAGGING

Fold and rebag your NFPA 1994 Class 1 and 2 and NFPA 1992 Garment per the following instructions:

A. If applicable, reattach inner gloves to glove ring assembly per assembly instructions in FIG. 2B (See Section 5.3).
B. Close zipper and stormflap and lay Garment out flat on its back.
C. Fold arms across chest; for removable gloves, lay ring assemblies flat. Be sure stormflap and zipper are still flat.
D. Fold hood down onto chest.
E. Fold socks inside legwells and fold legs to chest from waist.
F. Fold again in half, bottom to top. Be sure there is no trapped air in Garment.
G. Fold in half again, left to right, zipper rolled on outside for Rear Entry, zipper rolled on inside for Front Entry.
H. Insert Garment into storage bag, then insert outer gloves and user documentation.
I. Close bag.

FIG. 6
Never store your Ensemble in direct sunlight, indirect sunlight, or in fluorescent light.

13.2 STORAGE CONDITIONS

Store the Ensemble in its bag in a shaded location away from direct and indirect sunlight and fluorescent light. Room temperature is the ideal storage condition. Avoid temperature and humidity extremes.

13.3 SHELF LIFE

You can store a new ensemble or an ensemble that has been washed, thoroughly dried and rebagged properly for up to **10 years** from its manufacture date under the storage conditions shown above. You must inspect your Ensemble at least once annually according to Section 6 of this Guide. W. L. Gore and Associates, Inc. (Gore) has investigated the shelf life of CHEMPAK® selectively permeable fabric by GORE-TEX LABS LION has investigated all other components (ex: Zippers, Face Seals, trims). In compliance with NFPA 1990 reference in Annex A.5.1.2.4, Gore has determined a shelf-life of 10 years when materials are stored following the manufacturers recommendations.

⚠ CAUTION

Never store your Ensemble in living quarters with personal belongings, or within the passenger compartment of a vehicle. Prolonged exposure to contaminants remaining in the Ensemble may increase the risk of cancer or other diseases.

HOW LONG IS USEFUL LIFE?

- NFPA 1994 Class 1 and 2 and NFPA 1992 performance requirements are based on new, unworn Ensembles and Materials. Useful life varies depending on Ensemble materials selected, conditions of wear, maintenance, and storage.
- No products, including garments, footwear, or handwear, can offer absolute protection, even when new, and their protective performance will decline with wear, tear, abrasion, and other damage associated with use. W.L. Gore & Associates, Inc. and Lion First Responder PPE, Inc. make no guarantee of how the product will perform in actual use.

⚠ *WARNING*

Avoid storing your Ensemble in temperature extremes. Repeated cycles of heating and cooling can reduce the protective qualities and useful life of the Ensemble. See Section 14 of this Guide for limitations on useful life.

⚠ *WARNING*

NEVER STORE YOUR ENSEMBLE IN DIRECT SUNLIGHT, INDIRECT SUNLIGHT, OR IN FLUORESCENT LIGHT (FIG. 6). Exposure to light (particularly light in the sun's rays and fluorescent light) will severely weaken and damage the components in your Ensemble after only A FEW DAYS. Damage caused by exposure to light cannot be repaired, nor will the manufacturer cover such damage in its warranty. (See Warranty Information, Section 16 of this Guide.)

14. RETIREMENT

14.1 USEFUL LIFE AND RETIREMENT

Useful life is the period of time that an NFPA 1994 Class 1 and 2 and NFPA 1992 Compliant Ensemble, which has been properly cared for, can be expected to provide reasonable limited protection. The useful life will vary according to type and frequency of use. The Ensemble must be considered for retirement after ten (10) wearings and two (2) launderings, five (5) launderings or when its shelf life has been exceeded. (See Section 13 of this Guide.) Other factors, such as described below, will determine if it needs to be retired before it has been worn ten (10) times or laundered five (5) times or reaches its shelf life.

Your Ensemble should be carefully inspected after each use and at least annually as described in Section 6 of this guide to determine whether it has exceeded its useful life and must be retired.

The following factors affect the useful life of your Ensemble:

A. **Number and type of previous repairs** - An Ensemble repaired multiple times in the same places from on-duty damage will generally wear out sooner than less frequently damaged or repaired Ensembles.

B. **Type of work the wearer performed** - For example, knee areas that are used in crawling operations generally will wear out more quickly than other areas.

C. **Any exposure to flames or heat -** Exposure to flames can cause the Ensemble and other elements of the ensemble to become brittle. Also repeated cycles of low level, long-term exposure to heat can also damage barrier materials. The Ensemble should be retired if directly exposed to flames or flash fire.

D. **Exposure to hazardous chemicals** - If the exposure to hazardous chemicals is severe, and decontamination is ineffective, the Ensemble may not be safe for further use.

E. **The length of exposure to direct or indirect sunlight, or other light sources such as fluorescent light -** Tests show that long term exposure to direct or indirect sunlight or fluorescent light causes any outer shell, protective barrier, and any component made with aramid fibers to become brittle, weak or degraded.

If you have questions about whether to retire your Ensemble, contact LION or the LION TotalCare® Center authorized for NFPA 1994 Class 1 and 2 and NFPA 1992 Ensembles.

Trained professionals with in-depth knowledge of Ensembles and their limitations should handle the details of a retirement program. If you have any questions about the useful life and retirement of your NFPA 1994 Class 1 and 2 and NFPA 1992 Complaint Ensemble, get assistance before wearing your Ensemble into any hazardous materials emergency or chemical/biological terrorism incident!

⚠ *WARNING*

No products, including garments, footwear, or handwear, can offer absolute protection, even when new, and their protective performance will decline with wear, tear, abrasion, and other damage associated with use. W.L. Gore & Associates, Inc. and Lion First Responder PPE, Inc. make no guarantee of how the product will perform in actual use.

14.2 OUTER SHELL COLOR OR SHADE CHANGES

Some fabrics may experience color or shade changes during their useful life as a result of washing and/or exposure to other conditions. These shade changes do not affect the fabric's protective properties.

Shade change or color loss that occur from high heat exposure could indicate material degradation. Contact LION or the LION TotalCare® Center listed in the back of this Guide before re-use.

15. DISPOSAL

15.1 DISPOSAL

You must identify a retired Ensemble and store it separately from active-duty Ensembles or destroy it to prevent its unauthorized or mistaken use. Cut the Ensemble into several pieces and dispose of it properly. Two suggested methods of disposal are a landfill or incineration.

You should place a retired Ensemble that is contaminated with chemicals or bloodborne pathogens in a plastic bag and properly dispose of it. You should follow federal, state, and local regulations governing disposal of contaminated materials.

⚠ *WARNING*

Use of any retired Ensembles in hazardous situations could result in serious injury or death. Clearly-marked retired uncontaminated Ensembles can only be used for non-hazardous training situations.

16. LIMITED LIFETIME PRODUCT WARRANTY

⚠ WARNING

No products, including garments, footwear, or handwear, can offer absolute protection, even when new, and their protective performance will decline with wear, tear, abrasion, and other damage associated with use. W.L. Gore & Associates, Inc. and Lion First Responder PPE, Inc. make no guarantee of how the product will perform in actual use.

LION warrants that its firefighter and emergency responder products are free during their useful life from any defect in workmanship or any material defect.

Conditions of use are outside the control of LION. It is the responsibility of the user to inspect and maintain the products to assure they remain fit for their intended purpose. In order to maximize the useful life of these products and to maintain the warranty, the products are to be used only by appropriately trained personnel following proper emergency response techniques and in accordance with the product's warning, use, inspection, maintenance, care, storage, and retirement instructions. Failure to do so will void the warranty.

EXCEPT AS SET FORTH ABOVE, LION MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR USE.

Under the above warranties, LION will repair or replace, at its option, any product which does not meet the above warranties. Such repair or replacement will be the purchaser's sole remedy and LION will not be responsible for any incidental, consequential, or other damages based upon or arising in any way from any breach of the warranties contained herein or the purchaser's use of such product.

These warranty obligations apply only to any product, part, or component which is returned to LION or a LION TotalCare® Center with prior authorization and proof of purchase, and which LION agrees to be defective as covered by this warranty.

The word "product" includes the product itself and any parts or labor furnished by LION with the sales, delivery, or servicing of the product.

USEFUL LIFE: NFPA 1994 and NFPA 1992 performance requirements are based on new, unworn garments and composites. Useful life is the period of time that an Ensemble, which has been properly cared for, can be expected to provide reasonable limited protection.

Useful life will vary according to type and frequency of use, along with the weight and type of materials used in the product. Useful life is normally five (5) wearings or five (5) launderings, depending upon the conditions of wear, maintenance and storage. Other factors may require the garment to be retired before it has been worn or laundered five (5) times. Useful life is unlikely to be more than 10 years. Garments 10 years old must be retired!

DEFECTS IN WORKMANSHIP AND MATERIALS:

Defects in Workmanship and Materials means poorly manufactured items including seams, stitching, or components (for example, loose or broken seams; zippers or snaps that fall off or do not function properly); and fabrics or barriers which have such flaws as holes, uneven spots, weak areas, pilling, or other flaws caused by irregularities in their manufacture.

EXCEPTIONS TO LIMITED WARRANTY

This limited warranty does not cover the following items after receipt of product by end user:

A. Claims made after 60 days from the date of shipment for damage to materials;
B. Damage or color change from exposure of materials to direct or indirect sunlight or fluorescent light;
C. Shade variations among textiles used or shade changes to fabrics caused by wear and tear and/or washing;
D. Color loss due to abrasion (creases, folds, pleats, edges, collar points, etc.);
E. Damage caused by improper washing, decontamination, disinfecting or maintenance (for example, use of chlorine or petrochemicals to clean);
F. Damage caused by repair work not performed to factory specification;
G. Damage from routine exposure to common hazards which may cause rips, tears, burn damage, or abrasion;
H. Loss of retroreflectivity of reflective trim due to normal wear or heat exposure;
I. Detachment of reflective trim due to thread abrasion or heat exposure;
J. Replacement of zippers or closures worn partially sealed, or damaged by heavy wear and tear;
K. Loss of buttons, snaps, or cuff hem seams.

17. SOURCES AND FOR FURTHER INFORMATION

National Fire Protection Association. Current Edition. NFPA 1990 *Standard for Protective Ensembles for Hazardous Materials and CBRN Operations*

National Fire Protection Association. Last Edition. NFPA 1992 *Standard on Liquid Splash Protective Ensembles and Clothing for Hazardous Materials Emergencies.*

National Fire Protection Association. Last Edition. NFPA 1994 *Standard on Protective Ensembles for First Responders to CBRN Terrorism Incidents.*

National Fire Protection Association. Current Edition. NFPA 1581: *Standard on Fire Department Infection Control Program*

National Institute for Occupational Safety and Health. 1989*. Guidelines for Prevention of Transmission of Human Immunodeficiency Virus and Hepatitis B Virus to Health-Care and Public-Safety Workers.*

Occupational Safety and Health Administration. 1991. Occupational Exposure to Bloodborne Pathogens: Final Rule. 29 CFR Part 1910.1030, Federal Register.

Occupational Safety and Health Administration. 1996 Hazardous Waste Operations and Emergency Response: 29 CFR Part 1910.120, Federal Register.

Southern Area Fire Equipment Research (SAFER). 1994. PPE Care and Use Guidelines.

West KH:, 1992*. Infectious Disease Handbook for Emergency Care Personnel,* 2nd Edition. Cincinnati: ACGIH, Cincinnati, Ohio.

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18. INSPECTION, CLEANING, REPAIR, RETIREMENT AND DISPOSAL RECORD

Ensemble ID_____ **Model**_____ **Date of Ensemble Manufacture**_____

In the spaces below, note the activities performed on your Ensemble during its wear life.
Types of activities can include: Inspection; Cleaning; Decontamination; Repair; Alteration; Removal from Service; Retirement; Disposal, etc.

Date of Activity	Type of Activity	Reason for Activity	Description of Repair, Inspection Findings, etc.	Location on Ensemble	Inspection/ Cleaning/Repair Site	Activity Performed By	Date Returned to Service

Date of Retirement_____ Date and Method of Disposal_____

PERSONAL RESPONSIBLITY CODE

DANGER

The member companies of FEMSA that provide emergency response equipment and services want responders to know and understand the following:

1. Firefighting and Emergency Response are inherently dangerous activities requiring proper training in their hazards and the use of extreme caution at all times.
2. It is your responsibility to read and understand any user's instructions, including purpose and limitations, provided with any piece of equipment you may be called on to use.
3. It is your responsibility to know that you have been properly trained in Firefighting and/or Emergency Response and in the use, precautions and care of any equipment you may be called upon to use.
4. It is your responsibility to be in proper physical condition and to maintain the personal skill level required to operate any equipment you may be called upon to use.
5. It is your responsibility to know that your equipment is in operable condition and has been maintained in accordance with the manufacturer's instructions.
6. Failure to follow these guidelines may result in death, burns, injury, diseases, and illnesses.

FEMSA

www.femsa.org

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LION® ready for action