Revised on 01/2022 (update to standard NOE and PFE)

FIRE DEPARTMENT • CITY OF NEW YORK

STUDY MATERIAL FOR THE EXAMINATION FOR

CERTIFICATE OF FITNESS FOR

C-97
Supervision of Storage and Handling of Combustible and/or Toxic Fumigants and Pesticides

W-97
Supervision of Fumigation and Fogging Operations(Citywide)

This book is provided to the public for free by the FDNY.

Special Note: This Study Guide covers the **Citywide use (W-97) and Site Specific storage (C-97)** of Fumigation and Insecticidal fogging chemicals and equipment.

CITYWIDE USE (W-97): pages 1-30 (+Checklist, Appendix **A and B**)
SITE SPECIFIC STORAGE (C-97): pages 1-50 (+Checklist, Appendix **A, B and C**)

ALSO INCLUDED IN THIS BOOKLET YOU WILL FIND THE FOLLOWING:
NOTICE OF EXAMINATION (NOE)

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EXAM SPECIFIC INFORMATION FOR
C-97/W-97 CERTIFICATE OF FITNESS

Save time and submit application online!

Applicants who submitted and paid online for an exam before arriving at the FDNY will not need to wait in line to enter the FDNY.

It can take about 30 minutes to complete. Completing application and paying online will eliminate waiting outside in the long lines.

Simplified instructions for online application and payment can be found here:
http://www1.nyc.gov/assets/fdny/downloads/pdf/business/fdny-business-cof-individuals-short.pdf

Create an Account and Log in to:
https://fires.fdnycloud.org/CitizenAccess/SAML/NYCIDLogin.aspx

REQUIREMENTS FOR CERTIFICATE OF FITNESS APPLICATION

General requirements:
Review the General Notice of Exam:
http://www1.nyc.gov/assets/fdny/downloads/pdf/business/general-notice-of-exam-cof.pdf

Special requirements for the: C-97/W-97 Certificate of Fitness:

- Applicants must be certified by NYS DEC with a Commercial Pesticide Category 7A.
- The applicants who pass the C-97 Certificate of Fitness exam are allowed to pay an additional $25 fee to obtain the W-97 allowing the holder to work citywide fumigation. However, the special W-97 recommendation letter must be provided.
- W-97 C of F applicates:
    - If the applicant will perform or supervise the fumigation and fogging operations citywide, the applicant should obtain the W-97 C of F.
    - must be employeed by an approved FDNY certified Fumigation and Insecticidal Fogging Company. The recommendation letter must be under the company letterhead. The W-97 sample recommendation letter is provided on the following page. It can also be obtained via the following link:

  http://www1.nyc.gov/assets/fdny/downloads/pdf/business/cof-w97-samplerec-letter.pdf

- C-97 C of F applicates:
    - If the applicant will be responsible to supervise the storage of the combustible and/or toxic fumigants and pesticides, the applicant should obtain the C-97 C of F for the storage location.

Application fee (Cash is NO LONGER ACCEPTED):
Pay the **$25** application fee online or in person by one of the following methods:

- Credit card (*American Express, Discover, MasterCard, or Visa*)

- Debit card (*MasterCard or Visa*)
- In person: Personal or company check or money order (*made payable to the New York City Fire Department)*

A convenience fee of 2% will be applied to all credit card payments.

For fee waivers submit: ***(Only government employees who will use their COF for their work- related responsibilities are eligible for fee waivers.)***

- A letter requesting fee waiver on the Agency's official letterhead stating applicant full name, exam type and address of premises; ***AND***
- Copy of identification card issued by the agency

REQUIREMENTS FOR ALTERNATIVE ISSUANCE PROCEDURE (AIP)

No AIP available. This certificate of fitness can only be obtained by passing the computer exam at the FDNY Headquarters.

EXAM INFORMATION

The **W-97** test will consist of **30** multiple-choice questions, administered on a "touch screen" computer monitor. It is a time-limit test. Based on the amount of the questions and reference material provided, you will have **45** minutes to complete the test. A passing score of at least 70% is required in order to secure a Certificate of Fitness.

The **C-97** test will consist of **40** multiple-choice questions, administered on a "touch screen" computer monitor. It is a time-limit test. Based on the amount of the questions and reference material provided, you will have **60** minutes to complete the test. A passing score of at least 70% is required in order to secure a Certificate of Fitness.

If Call 311 and ask for FDNY Customer Service Center or
Email FDNY.BusinessSupport@fdny.nyc.gov
Call (718) 999-1988 for additional information and forms.

Special material provided during the exam: *The tables which appear in the booklet will be provided to you as a reference material when you take the exam at MetroTech, however, the booklet will not provide to you during the exam.*

Please always check for the latest revised booklet at FDNY website before you take the exam.

http://www1.nyc.gov/assets/fdny/downloads/pdf/business/cof-w97-noe-study-materials.pdf

Exam site: **FDNY Headquarters,** 9 MetroTech Center, Brooklyn, NY. Enter through the **Flatbush Avenue entrance (between Myrtle Avenue and Tech Place)**.

RENEWAL REQUIREMENTS

General renewal requirements:
Review the General Notice of Exam:
http://www1.nyc.gov/assets/fdny/downloads/pdf/business/general-notice-of-exam-cof.pdf

Special renewal requirements for C-97/W-97 COF: None

The FDNY strongly recommends the C-97/W-97 COF holders to renew the COF on-line. To learn the simplified on-line renewal:
http://www1.nyc.gov/assets/fdny/downloads/pdf/business/cof-simplified-renewal-short.pdf

QUESTIONS?

FDNY Business Support Team: For questions, call 311 and ask for the FDNY Customer Service Center or send an email to FDNY.BusinessSupport@fdny.nyc.gov

****sample recommendation letter for W-97****

COMPANY NAME
BUSINESS ADDRESS

Date: _____

Fire Department
Bureau of Fire Prevention
9 Metro Tech Center
Brooklyn, NY 11201-3857

To whom it may concern:

The applicant is currently employed by our company, _____,
(company name)

which has been approved by the FDNY as a fumigation and insecticidal fogging operation company (company approval number: _____).

Our company has the tools, materials, and equipment required to properly provide fumigation and/or insecticidal fogging service consistent with New York City Fire Code Chapter 17, which regulates fumigation and insecticidal fogging, New York City Fire Rule Section 1703-01, applicable combustible liquid storage sections from New York City Fire Code Chapter 34 and applicable toxic and highly toxic materials storage sections from New York City Fire Code Chapter 37.

Applicant has been trained on the tools, materials and equipment utilized for fumigation and insecticidal fogging operation. The applicant is familiar with all safety procedures. I am pleased to recommend _____ to apply for a Certificate of Fitness for
(applicant's name)

_____. He/she has _____ of Experience.
(Type of C of F) (years, months)

Applicant is of GOOD CHARACTER and is PHYSICALLY ABLE to perform the functions required by the holder of this Certificate of Fitness.

_____ _____ _____
(Printed name of Employer) (Employer's title) (Signature of Employer)

NOTE: ***The recommendation letter must be on employer's letterhead. If not on employer's letterhead, signature must be notarized.***

This study material is provided to the public for free by the FDNY.

ABOUT THE STUDY MATERIAL

This study material will help you prepare for the written examination for the certificate of fitness for fumigation and insecticidal fogging. This study material includes information taken from the New York City Fire Code and Fire Department Rules. The study material does not contain all the information you need to know in order to perform the responsibilities of conducting fumigation and insecticidal fogging operations safely. It is your responsibility to become familiar with all applicable laws, rules and regulations of the federal, state and city agencies having jurisdiction, even though such requirements are not included in this study material. You need to be familiar with New York City Fire Code Chapter 17, which regulates fumigation and insecticidal fogging, New York City Fire Rule Section 1703-01 and applicable sections of New York City Fire Code Chapter 34, which regulates the storage, handling and use of combustible liquids and applicable sections of New York City Fire Code Chapter 37 which regulates the storage, handling and use of highly toxic and toxic materials in order to adequately prepare for the exam. **It is critical that you read AND understand this booklet to help increase you chance of passing this exam.**

ABOUT THE TEST

You must pass a multiple choice test to qualify for the certificate of fitness. A score of 70% correct is required in order to pass the test. All questions have four answer options. Only ***one*** answer is correct for each question. If you do not answer a question, or if you mark more than one answer to a single question, your answer to that question will be scored as incorrect. Read each question carefully before marking your answer. There is no penalty for guessing.

Sample Questions

The following questions represent the "format" of the exam questions, not the content of the real exam.

1. Which of the following are allowed to be used/displayed while taking a Certificate of Fitness examination at 9 Metro Tech Center?

I. cellular phone
II. study material booklet
III. reference material provided by the FDNY
IV. mp3 player

A. III only
B. I, II, and III
C. II and IV
D. I only

Only reference material provided by the FDNY is allowed to be used during Certificate of Fitness examinations. Therefore, the correct answer would be **A**. You would touch "**A**" on the computer terminal screen.

2. If you do not know the answer to a question while taking an examination, who should you ask for help?

A. the person next to you
B. the firefighters
C. the examiner in the testing room
D. you should not ask about test questions since FDNY staff cannot assist applicants

You should not ask about examination questions or answers since FDNY staff cannot assist applicants with their tests. Therefore, the correct answer would be **D**. You would touch "**D**" on the computer terminal screen.

3. If the screen on your computer terminal freezes during your examination, who should you ask for help?

A. the person next to you
B. the firefighters
C. the examiner in the testing room
D. the computer help desk

If you have a computer related question, you should ask the examiner in the testing room. Therefore, the correct answer would be **C**. You would touch "**C**" on the computer terminal screen.

1. Introduction

This document outlines New York City Fire Department regulations for fumigation and insecticidal fogging operations. Persons engaged in the business of fumigation and insecticidal fogging operations shall obtain a fumigation and insecticidal fogging operation company certificate. The applicant must be certified by the New York State Department of Environmental Conservation with a commercial pesticide category 7A.

Fumigation and insecticidal fogging shall be conducted by or under the ***personal supervision*** of a person holding a Certificate of Fitness. The Certificate of Fitness holders are responsible for ensuring that all Fire Department regulations related to the safe handling and use of hazardous materials at the work site are followed.

For the **W-97** you must be familiar with 2014 New York City Fire Code Chapter 17 and New York City Fire Rule Section 1703-01, which regulate fumigation and insecticidal fogging

Additionally, for the **C-97** you must be familiar with 2014 New York City Fire Code Chapter 34 which regulates the storage of combustible liquids and 2014 New York City Fire Code Chapter 37, which regulates the storage of highly toxic and toxic materials.

The booklet provides a brief overview of the safety precautions, rules, guidelines, work practices, and emergency procedures for the storage, handling and use of combustible liquids, highly toxic and toxic materials that are commonly used in fumigation and insecticidal fogging. The Certificate of Fitness holder must know the properties of each of these materials and the proper storage, handling and use requirements. He or she must also know the procedures that must be followed when dealing with fire or spill emergencies for these materials.

The Certificate of Fitness holder is responsible for:

1. the safe manufacturing, storage, handling, use, operation, maintenance, inspection, testing, repair and/or supervision of the material, operation or facility, and emergency preparedness, for which the certificate is required, in accordance with this code, the rules, and any other applicable laws, rules and regulations.

2. notifying the department of any fire, explosion, reportable leak or other release of hazardous material, or other emergency related to the duties of his or her certificate.

3. keeping such certificate upon his or her person or otherwise readily available on the premises for inspection by any representative of the department, at all times while conducting or supervising the material, operation, facility or emergency preparedness for which the certificate is required.

2. Permits

2.1 PERMIT

FIRE DEPARTMENT, CITY OF NEW YORK — PERMIT — BUREAU OF FIRE PREVENTION

ACCOUNT NUMBER	TYPE	A.P.	D.O.	ADM. CO.	ISSUANCE DATE	PERMIT EXPIRES
88888888	10	R	27	E777	2/29/09	2/10

PREMISES ADDRESS	ACCOUNT NAME
LAUREN BLDG 111 ELM AVE QUEENS 11105-4950	BATTY'S BATCH OF CHEMICALS

ITEM CODE	SUB CODE	QTY	DESCRIPTION	FLOOR NO.	FEE
715	00	1	INFL MIX/LQ 1-10 UNITS	1	210.00
110	00	1	ACIDS STR > 5 CARB EX PICRIC	1	50.00
					260.00

PERMIT TYPE: 1

1=REGULAR
2=SUPPLEMENTAL
3=DUPLICATE

BATTY'S BATCH OF CHEMICALS
111 ELM AVE
QUEENS 11105-4950

BLEND METHANOL FROM 500-G TK
W/ACETIC ACID FOR CLNG SOLN
G-97 COF REQD

9002004592

BY ORDER OF THE COMMISSIONER

Sample of a Fire Department Permit

The certificate of fitness holder is responsible for ensuring that all required permits are secured and posted in visible locations. The holder is responsible for complying with the requirements of the Fire code.

Permits are valid for 12 months only. Enforcement action may be taken against the certificate of fitness holder when the required permits are not secured and posted. The enforcement actions may include fines and/or the revocation of the Certificate of Fitness.

An FDNY permit is required to manufacture, store, handle, use, sell or transport hazardous materials or combustible materials when required by the Fire Code.

Every permit or renewal shall require an inspection and shall expire after twelve months. Permits are not transferable and any change in occupancy, operation, tenancy or ownership shall require that a new permit be issued.

Current permits (or a legible copy) shall be posted in a conspicuous location on the premises and shall be readily available for inspection by any representative of the department.

In addition to the requirements of Fire Code, all applicants for a permit must meet the requirements of the Department of Buildings. Other agencies such as NYC DEP, NYS DEC, and USEPA may have additional requirements.

2014 New York City Fire Code Section **1701.2** requires that if materials are to be fumigated or subject to insecticidal fogging at a place other than a client's premises, such as in a vault or tank, that a storage and use permit must be obtained from the Fire Department for the operation of such facility. Such facility will be subject to a Fire Department Inspection. Call 718-999-2533 for further information.

Companies that operate and store fumigants and insecticidal fogging chemicals within the 5 boroughs of the City of New York, may require a Fire Department storage permit as per Section **105.6** of the 2014 New York City Fire Code (see table below for permit requirements).

Type of Hazard	Quantity
Combustible Liquid flashpoint **<300ºF**	10 gallons
Combustible Liquid flashpoint **>300ºF***	70 gallons*
Toxic Liquid	10 gallons
Toxic Solid	100 pounds
Highly Toxic Liquid	Any amount
Highly Toxic Solid	Any amount
Aerosols**	100 pounds**

***No Certificate of Fitness required for combustible liquids with a flashpoint >300ºF.**
****** **Aerosol storage above 100 pounds requires an A-49 Certificate of Fitness.**

3. Definitions

Combustible Liquid - For purposes of transportation, a combustible liquid, as defined in the regulations of the United States Department of Transportation, as set forth in 49 CFR Section 173.120. For all other purposes, a liquid, other than a compressed gas or cryogenic fluid, having a closed cup flash point at or above 100°F (38°C), classified as follows:

- **Class II.** Liquids having a closed cup flash point at or above 100°F (38°C) and below 140°F (60°C).
- **Class IIIA.** Liquids having a closed cup flash point at or above 140°F (60°C) and below 200°F (93°C).
- **Class IIIB.** Liquids having closed cup flash points at or above 200°F (93°C).

Flammable Gas - A material which has a boiling point and becomes a gas at 68°F (20°C) or less at 14.7 pounds per square inch absolute (psia) (101 kPa) of pressure which:

1. Is ignitable at 14.7 psia (101 kPa) when in a mixture of 13 percent or less by volume with air; or
2. Has a flammable range at 14.7 psia (101 kPa) with air of at least 12 percent, regardless of the lower explosive limit

Flammable Liquid - For purposes of transportation, a flammable liquid defined in the regulations of the United States Department of Transportation, as set forth in 49 CFR Section 173.120. For all other purposes, a liquid, other than a compressed gas or cryogenic fluid, having a closed cup flash point below 100°F (38°C), classified as follows:

- **Class IA.** Liquids having a flash point below 73°F (23°C) and having a boiling point below 100°F (38°C).
- **Class IB.** Liquids having a flash point below 73°F (23°C) and having a boiling point at or above 100°F (38°C).
- **Class IC.** Liquids having a flash point at or above 73°F (23°C) and below 100°F (38°C). (e.g., acetone and ethyl alcohol.)

Flashpoint - The minimum temperature in degrees Fahrenheit at which a liquid will give off sufficient vapors to form an ignitable mixture with air near the surface or in the container, but will not sustain combustion. Flashpoint is an indication of the ability of a flammable/combustible liquid to produce flammable vapors - i.e., the lower the flash point, the greater the vapor production, and the greater the fire hazard. It is important to note that it is the vapors produced by the liquid that can ignite and explode, not the liquid itself.

Fumigant - A substance which by itself or in combination with any other substance emits or liberates a gas, fume or vapor utilized for the destruction or control of insects, rats or other vermin or fungi, germs or similar conditions, as distinguished from insecticides and disinfectants which are essentially effective in the solid or liquid phases. Examples are methyl bromide, ethylene dibromide, hydrogen cyanide, carbon disulfide and sulfuryl fluoride.

Fumigation - The utilization within an enclosed space of a fumigant in concentrations that is hazardous or acutely toxic to humans.

Fumigation and Insecticidal Fogging Operation Company Certificate - A certificate issued by the commissioner to a person engaged in the business of fumigation and insecticidal fogging operations, which authorizes an owner or principal of such business to conduct such fumigation and insecticidal fogging operations, for which such certificate is required by this code or the rules.

General Supervision – Except as otherwise provided in Fire Code, supervision by the holder of any department certificate who is responsible for performing the responsibilities as outlined on page 8 but need not be personally present on the premises at all times.

Handling - The movement of a material in its container, the removal of the material from its container, or any other action or process that may affect the material, other than its storage or use.

Hazardous Material - Those chemicals or substances that are physical hazards or health hazards as defined and classified in this chapter, whether the materials are in usable or waste condition.

Health Hazard - The health hazard signal indicates the property of a material to cause direct or indirect injury; or incapacitation by contact, inhalation, or ingestion. The health hazards arise out of the inherent properties of the material and the toxic products created by the material's combustion or decomposition. The hazard signal is assigned based on the greatest hazard that could exist under fire or other emergency conditions.

HMIS ratings - HMIS is the acronym for Hazardous Materials Identification System. This system serves to classify, through a series of ratings, the chemicals you use in your laboratory and color codes the information for easy recognition. Each rating ranges from 0 to 4. The higher the hazard signal number, the greater the degree of hazard associated with the material. The color codes are as follows, blue, red, and white horizontal bars for the health, flammability, reactivity hazards and personal protection categories.

Ignition Temperature -The ignition temperature of a solid, liquid, or gas, is the minimum temperature to which it must be heated for it to ignite.

Insecticidal Fogging - The utilization of insecticidal liquids passed through fog-generating units where, by pressure and turbulence, and with or without addition of heat, such liquids are transformed and discharged in the form of fog or mist blown into an area to be treated.

Material Safety Data Sheet/ Safety Data Sheet (MSDS/SDS) -The material safety data sheet (MSDS) contains specific information about the health and physical hazards of the material used, as well as safe work practices and required protective equipment. It may also describe the material's physical characteristics and procedures that should be followed in case of an emergency. For example, the MSDS may list appropriate and inappropriate extinguishing agents. The Certificate of Fitness holder must refer to the MSDS when questions arise about how to handle, use, or store hazardous chemicals or materials.

Non-Flammable or Non-combustible Solution - A non-flammable or non-combustible solution shall mean a solution which has no flashpoint when tested in a Tagliabue Open Cup Tester, suitably modified as to the heating medium.

Permit – A written statement issued by the commissioner authorizing the manufacturer, storage, handling, use or transportation of a hazardous material, or other material, or to conduct an operation or to maintain a facility, for which a permit is required by the fire code.

Pesticide -A substance or mixture of substances, including fungicides, but excluding any product defined as a drug in the Federal Food, Drug and Cosmetic Act, intended for the purpose of preventing, repelling or killing pests or pest infestations, or for use as a plant regulator, defoliant or desiccant.

Personal Supervision- Except as otherwise provided in the New York City Fire Code, supervision by the holder of any department certificate who is required to be personally present on the premises, or other proximate location acceptable to the department, while performing the duties for which the certificate is required.

Portable Fire Extinguisher - A portable device, carried or on wheels and operated by hand, containing an extinguishing agent that can be expelled under pressure for the purpose of suppressing or extinguishing fire.

Signal Words - Are found on pesticide product labels, and they describe the acute (short-term) toxicity of the formulated pesticide product.

4. Commonly Used Fumigation Equipment

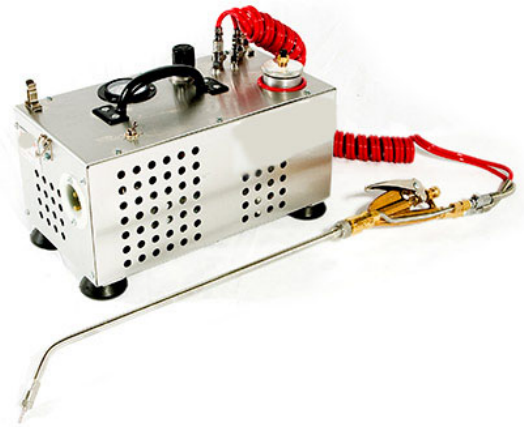
Electric Cold Fogger
dispenses both water-based and oil products and is capable of delivering insecticides, deodorizers, disinfectants and germicides. This type of fogger is successfully used in warehouses, schools, nursing homes, hospitals, greenhouses, restaurants and a wide range of other facilities and institutions.

Jet Thermal Mister
dispenses insecticides, fungicides, disinfectants and germicides as emulsifiable concentrates, wettable powders, liquids or flowables in a wide range of applications including warehouses, greenhouses, poultry and swine houses, food processing plants and other commercial, industrial and residential uses.

ULV Fogger
is lightweight and can handle both water- and oil-based liquids. This allows use of more concentrated fogging solutions, and speeds up treatment time. It is widely used in schools, restaurants, zoos, barns, hotels, and similar locations requiring professional application.

Portable Aerosol System
can be adjusted from a very fine ULV fog to a heavy mist to handle most applications. This is the ideal tool for integrating liquid and aerosol application with one tool and one operator. This combination is effective for cockroaches in kitchens, bed bugs in hotels and dormitories, and carpenter ants in wall voids. Using a pin stream and an aerosol does not add any time to the job.

ULV Aerosol Fogger
mixes a low volume of insecticide with a high volume of air, atomizing the mixture in a special nozzle. The atomization nozzle produces a high proportion of ideally-sized insecticide particles in a continuous high volume air stream. The aerosol penetrates further to reach target insects in the most hidden recesses of cracks, crevices, and voids. This improved penetration is DEEP HARBORAGE pest control.



Crack and Crevice Aerosol
is ideal for low infestations where minimal insect populations are found and immediate results are needed.

This study material is provided to the public for free by the FDNY.

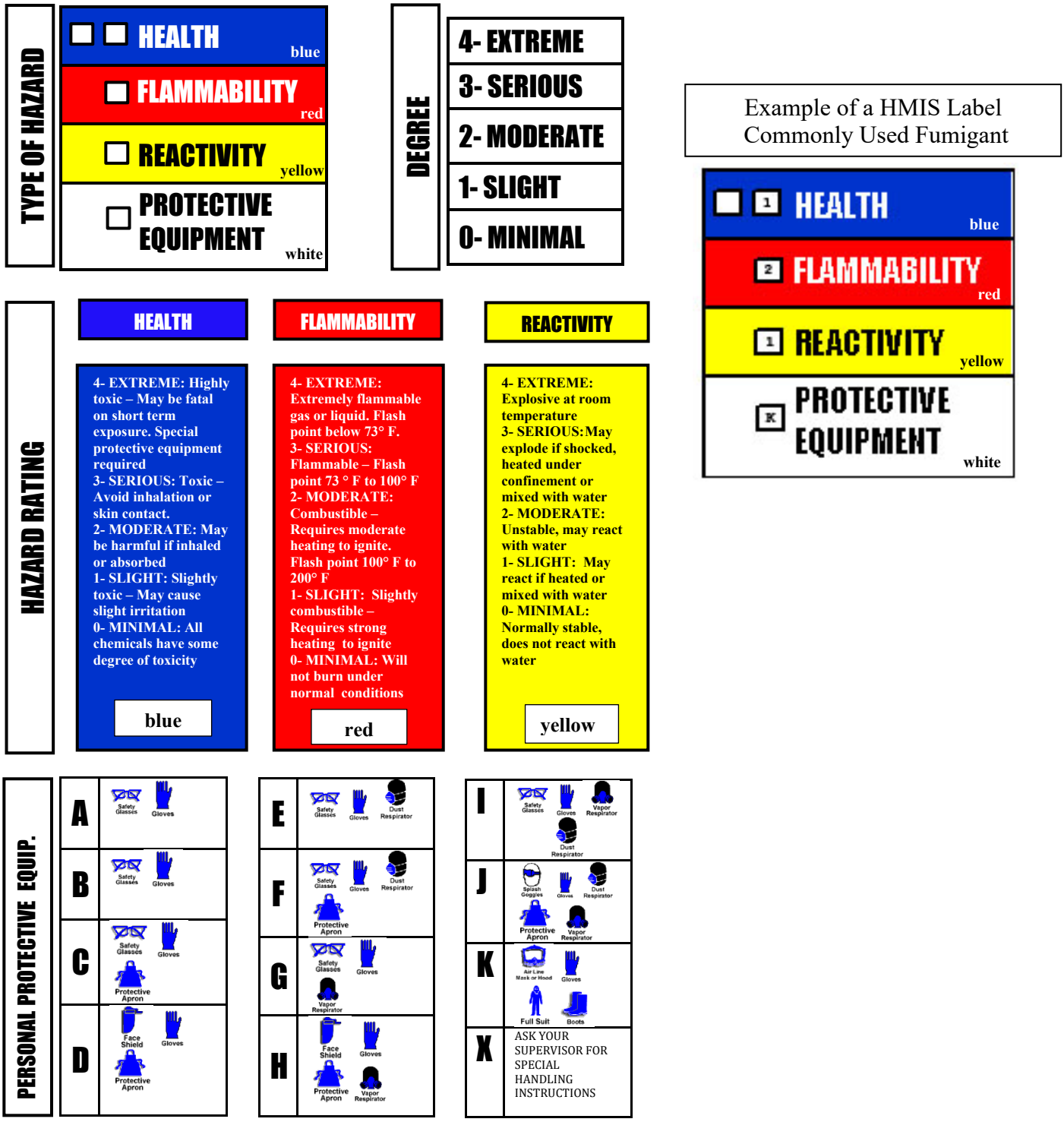
5. Hazardous Identification

5.1 HAZARDOUS MATERIALS IDENTIFICATION SYSTEM (HMIS)

The system was been developed by the National Paint and Coatings Association (NPCA) in response to the requirement by the Occupational Safety and Health Administration's (OSHA) Hazard Communication Standard (HCS) that all chemicals in the workplace be labeled. It is broken down into 4 hazard categories:

- **Health (blue):** The Health section conveys the health hazards of the material. In the latest version of HMIS®, the blue Health bar has two spaces, one for an asterisk and one for a numeric hazard rating. If present, the asterisk signifies a chronic health hazard, meaning that long-term exposure to the material could cause a health problem such as emphysema or kidney damage.
- **Flammability (red),**
- **Reactivity/Instability (yellow)**, and
- **Personal Protection (white).**

Hazardous Materials Identification System (HMIS) Explanation



This study material is provided to the public for free by the FDNY.

5.2 NFPA HAZARD DIAMOND SIGN

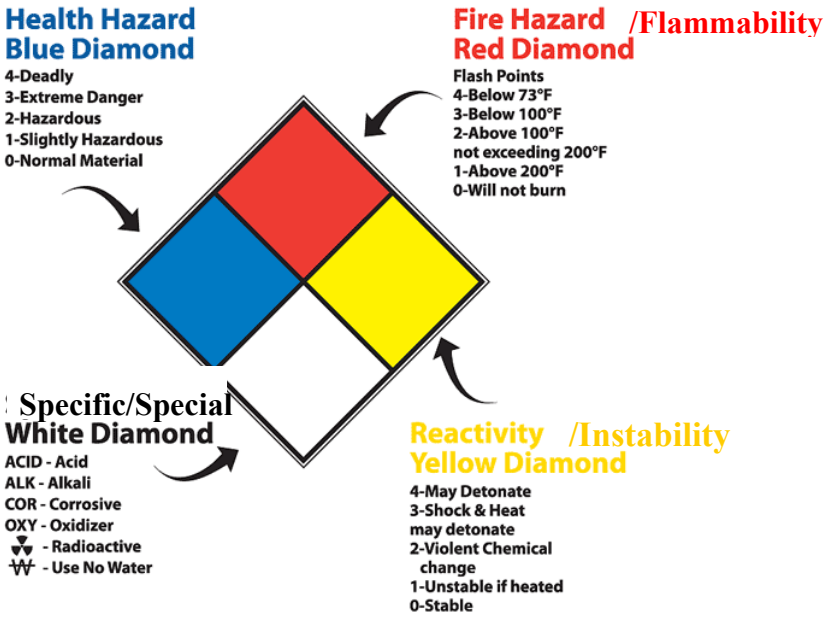
The *transport* of hazardous materials is accompanied by the use of US DOT compliant placards and labels to assist identification of hazardous materials on the roadway, railway, waterway and in the air. In a similar manner the *storage, handling and use* of hazardous materials is accompanied in the Fire Code by a requirement for the use of consistent signage to alert people, including first responders, to the presence of hazardous materials in a facility. The intent of the signage is to provide an indication of both the *type* of hazardous material present and the relative *degree of harm* that the material may pose. This simplistic system uses symbols, colors and numbers to readily communicate these concerns in a visual manner, and recognizes the fact that a material may pose more than one type of hazard.

The basis of the system is a diamond-shaped sign that is divided into four color-coded quadrants. The left-most quadrant is colored blue and represents the *health* hazard posed by the material. The upper quadrant is red in color and indicates the relative *fire* hazard. The right-most quadrant is yellow and conveys the relative potential for *reactivity* of the material. The last quadrant, at the bottom, is white in color and serves to convey *"special"* or *"specific"* information such as "~~W~~" for use no water.

The diamond-shaped sign is required by the Fire Code to be conspicuously displayed at the entrance to locations where hazardous materials are stored, handled and used, and on stationary containers and aboveground tanks containing hazardous materials **in quantities requiring a permit**. Note that the sign requirement also applies to locations at which a hazardous material is dispensed.

The numbering system that is used to convey the hazards of a material uses a scale of 0 through 4 for each of the three hazard types (health, fire and reactivity). A number is placed in each box, specific to the material at hand. In each quadrant, a "0" represents the least concern and "4" represents the highest degree of hazard posed by a material. For instance, a "0" in the upper quadrant indicates a material that will not burn, while a "4" in the same quadrant indicates a gaseous material that will burn very readily. Intermediate numbers represent increasing levels of hazard in all categories, such as the "4" that is present in the "health" quadrant of the example. This is indicative of a material that can be deadly upon exposure.

NFPA HAZARD DIAMOND SIGN EXPLANATION



Sign with Hazards Indicated
(Ammonium Phosphide)

This study material is provided to the public for free by the FDNY.

5.3 PERSONAL PROTECTION

NFPA 704 Hazard Diamond

HMIS

This is by far the largest area of difference between the NFPA and HMIS® systems. In the NFPA system, the white area is used to convey special or specific hazards whereas HMIS® uses the white section to indicate what personal protective equipment (PPE) should be used when working with the material.

6. Exposure

Risk = Toxicity x Exposure

TYPES OF EXPOSURE:

- **Acute exposure** refers to the intake of a single dose or to a series of exposures within a short period of time (e.g. one day). Acute exposures may be referred to as acute dermal, acute oral or acute inhalation poisoning. Usually the effects of acute exposure, if any, will occur within 24 hours.
- **Chronic exposure** is the exposure to pesticides over an extended period of time, such as where a pesticide applicator is frequently wetted with spray during unsafe spray practices. Pesticides which have a tendency to accumulate, or which break down slowly in body tissues, usually represent the greatest chronic exposure hazard. Someone who is frequently exposed to low doses of such pesticides may develop symptoms of poisoning long after the first exposure. Chronic exposure may be referred to as chronic oral, chronic dermal or chronic inhalation poisoning.

Dermal Exposure:

In typical work situations, skin absorption is the most common route of poisoning from pesticides. As long as the pesticide remains in contact with the skin, absorption will continue. Each part of the body differs in the rate at which dermal absorption occurs. The head (especially the scalp and ear canal), the eyes and the genital areas are at high risk. This absorption may occur as a result of a splash or spill when mixing, loading or using a pesticide. It may also result from exposure to residue on equipment, protective clothing or treated surfaces after pesticide application. It is also easy to transfer pesticide residues from one part of the body to another. When this occurs, the applicator increases the potential for pesticide poisoning. The hazard from skin absorption increases when workers are mixing pesticides because they are handling concentrated pesticides that contain a high percentage of active ingredients.

To protect yourself from eye and skin contact or absorption:

- **ALWAYS** wear protective clothing and equipment when using pesticides or repairing contaminated equipment.
- **ALWAYS** Spray during periods when there is little or no wind.
- **NEVER** re-enter a sprayed field without protective clothing until the re-entry time has passed.
- If your clothes become contaminated, change **IMMEDIATELY**. Wash all affected areas of the skin.
- **ALWAYS** change clothes as part of the clean-up after pesticide use.
- **ALWAYS** wash and shower after using pesticides.
- **ALWAYS** wear clean clothes at the start of each day during pesticide application.
- **ALWAYS** wear eye protection when you measure, mix or spray pesticides.

- **NEVER** wipe your eyes with contaminated gloves or hands.

Dermal First Aid Procedures:

If eye contact occurs - Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

If skin contact occurs - Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

Oral Exposure:

Pesticides can be ingested by accident, through carelessness, or intentionally. The most frequent cases of accidental oral exposure are when pesticides have been taken from their original labeled container and put into an unlabeled bottle or a food container. Workers handling pesticides or application equipment can also consume excessive levels of pesticides if they do not wash their hands properly before eating or smoking. Applicators must never try to clear a spray line or nozzle by blowing on it while holding it to their mouth.

To protect yourself from oral exposure:

- **ALWAYS** store pesticides in their original labeled containers.
- **NEVER** use your mouth to clear a spray hose or nozzle, or to siphon a pesticide.
- **ALWAYS** wash hands after handling pesticides, before eating, drinking, smoking, or using the toilet.
- **NEVER** leave pesticides open or unattended.
- **ALWAYS** avoid splashes or dusts when mixing pesticides.
- **ALWAYS** label the measuring containers used for pesticides.
- **NEVER** put pesticides in an unlabeled bottle or food container.

Oral First Aid Procedures:

If ingested - Immediately call a poison control center or doctor for treatment advice. DO NOT give any liquid to the person. Do not induce vomiting unless told to do so by a poison control center or doctor. Never give anything by mouth to an unconscious person.

Inhalation Exposure:

Lungs may be exposed to pesticides by inhalation of powders, airborne droplets or vapors. Working with wettable powders can be hazardous because the powder may be inhaled during mixing operations and usually contains concentrated pesticide active ingredient. The hazard from inhalation of

pesticide spray droplets is fairly low when dilute sprays are being applied with conventional low pressure application equipment. This is because most droplets are too large to remain airborne and be inhaled. However, when high pressures are used or ultra-low volume (ULV) or fogging equipment is used, the potential for respiratory exposure is increased. The droplets produced during these operations are in the mist or fog size-range and can be carried on air currents for a considerable distance.

Many pesticides give off a vapor when exposed to air. Fumigants are used because their toxic vapors are desirable for pest control. Fumigants have the highest hazard for exposing workers to vapors. The hazard is greatest in enclosed spaces where there is little air movement. For example, high vapor levels could result from a spill in an unventilated storage area or application in a confined space such as a greenhouse. Air currents due to wind or ventilation can greatly reduce vapor levels.

To protect yourself from respiratory exposure:

- **ALWAYS** wear an appropriate and properly fitting respirator:
    - If it is required on the label;
    - If pesticides are used or mixed in poorly ventilated areas;
    - If there is a possibility of inhaling spray droplets, vapor, or powder.
- **NEVER** re-enter a treated area too soon. **ALWAYS** follow the re-entry guidelines on the label.
- **ALWAYS** ventilate greenhouses or enclosed structures after pesticide application, before re-entry.

Respiratory protection - When applying as a space spray, wear a respirator with an organic-vapor-removing cartridge with a pre-filter approved for pesticides (MSHA/ NIOSH approval number prefix TC-23C), or a canister approved for pesticides (MSHA/ NIOSH approval number prefix TC-14G), or a NIOSH approved respirator with an organic vapor (OV) cartridge or canister with any R, P, or HE pre-filter.

Inhalation First Aid Procedures:

If inhaled - Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.

7. Potential Health Effects

Toxicity of pesticides can vary depending on the type of exposure; dermal, oral or inhalation (respiratory), but it is important to remember that, in each case, the danger usually increases as concentration and duration of exposure increases. The longer a pesticide remains on the skin or in eyes, the more that is ingested or the longer it is inhaled, the greater the damage that is likely to result.

The U.S. Environmental Protection Agency (EPA) requires a ***signal word*** on most pesticide product labels. They also require it to be printed on the front panel, in all

capital letters to make it easier for users to find. The only pesticide products that are not required to display a signal word are those that fall into the lowest toxicity categories by all routes of exposure.

Signal Words found on pesticide labels can be either: **DANGER, WARNING or CAUTION.**

DANGER – Means the pesticide product is highly toxic by at least one route of exposure. If the pesticide is highly toxic when eaten, absorbed through the skin, or inhaled, the word "POISON" must be included in RED letters on the front panel of the product label.

WARNING - Indicates the pesticide product is moderately toxic if eaten, absorbed through the skin, inhaled, or causes moderate eye or skin irritation.

CAUTION - Means the pesticide product is slightly toxic if eaten, absorbed through the skin, inhaled, or it causes moderate eye or skin irritation.

KEEP OUT OF REACH OF CHILDREN.

8. Handling and Storage

Handling - Take prudent precautions to avoid contact with skin, eyes, and clothing. Do not contaminate water or food by storage, handling or disposal. Read and observe all precautions and instructions on the label.

Storage - Store containers upright and closed. Store in areas that are cool, dry and well-ventilated. Keep away from heat, open flame, ignition sources, and strong oxidizers. Emptied containers may retain product residues.

Work hygienic practices - DO NOT SMOKE, EAT, DRINK OR APPLY COSMETICS IN WORK AREA! Wash promptly if skin becomes contaminated. Wash at the end of each work shift and before eating, smoking and using the toilet.

Electrostatic accumulation - These products may contain petroleum distillates, for which there is the potential for electrostatic accumulation (spark or shock). Proper grounding procedures should be used when transferring this material.

9. Accidental Release Measures

Small spill - Shut off ignition sources. Stop release, if possible without risk. Dike or

contain release, if possible. Isolate and control access to the release area. Take actions to reduce vapors. Absorb with appropriate absorbent. Clean spill area of residues and absorbent.

Large spill - Shut off ignition sources. Stop release, if possible without risk. Dike or contain release, if possible. Isolate and control access to the release area. Take actions to reduce vapors. Collect product into drums, etc. via drains, pumps, etc. Absorb with appropriate absorbent. Clean spill area of residues and absorbent. If a large spill or leak occurs it must be reported to the New York State (NYS) Spill Hotline (1-800-457-7362).

Notification: More details on notification and reporting requirements can be found in the document posted by the Department of Environmental Conservation (http://www.dec.ny.gov/docs/remediation_hudson_pdf/1x1.pdf).
(The spill responses can be referred to http://www.dec.ny.gov/chemical/8692.html)

An IMMEDIATE RESPONSE to a spill can prevent further damage or danger.

Waste disposal method - Contaminated absorbent and wash water should be disposed of according to local, state, and federal regulations.

10. Fire Safety Requirements and Best Practice

Fumigation and insecticidal fogging operations in buildings, structures and spaces shall be conducted in compliance with the following fire protection and safety requirements.

For heat based application, the temperature gauge of fog generator shall be read at frequent intervals. If the temperature rises above normal operating temperature, the generator shall be shut down immediately and the necessary adjustment made. When liquids having a flash point are used, the liquid in the fog generator shall have a flash point at least 40°F higher than the surrounding temperature of the area to be fogged.

Sources of ignition. Open flames and similar sources of ignition shall be removed from the space in which fumigation or insecticidal fogging operations are being conducted.

Electricity. Electricity in any part of the building or structure where operation of switches or electrical devices, equipment and systems could serve as a source of ignition during and for a reasonable time after any fumigation or insecticidal fogging operation. All electrical devices, equipment and systems shall be shut off.

> **Exception:** Circulating fans that have been specifically designed for utilization in hazardous atmospheres and installed in accordance with the Electrical Code.

Electronic devices. Electronic devices, including portable equipment and cellular phones, shall be shut off. Telephone lines shall be disconnected.

Smoke Detectors. Smoke detectors should be covered (protected with a nonporous plastic bag) or removed. The smoke detector must be reinstalled and uncovered by building owner or client when it is safe to re-enter the space.

Fire alarm systems. Fumigation and insecticidal fogging operations may require that fire alarm systems be taken out of service during such operation to avoid unwarranted alarms. Fire alarm systems that are taken out of service shall comply with the requirements of FC901.7.4. The date and time the alarm system was taken off-line, the reason for such action, the name and operator number of the person notified at the central station (or other evidence of notification satisfactory to the Department), and the date and time the system was restored to service, shall be entered in the alarm log book in each such circumstance.

Notification of Fumigation. The department shall be notified in writing at least 48 hours to FDNY's Field Operational Support Unit by faxing it to 718-999-7108 or writing to the FDNY 9 Metro tech Center; Attn: Field Operational Support Unit, Brooklyn, N.Y. 11201. Notification shall give the location of the enclosed space to be fumigated or fogged, the occupancy, the fumigants or insecticides to be utilized, the person or persons responsible for the operation, and the date and time at which the operation will begin. Cold ULV fogging does not require any notification. Written notice of any fumigation operation shall be given to all affected occupants of the building, structure or portion thereof in which such operations are to be conducted, with sufficient advance notice to allow all such spaces to be vacated in an orderly manner. Such notice shall inform the occupants as to the purposes and anticipated duration of the fumigation operations.

WRITTEN FUMIGATION NOTICE

DANGER

FUMIGATION TO BE CONDUCTED

On June 4, 2015 at 1:00 pm, this building, 3232 78th St., will be fumigated by the ACME Pest Control Co. all occupants must evacuate the premises no later than Noon that day.

It is **UNLAWFUL** and **DANGEROUS** to reenter this building while this notice is posted.

	HAZARD INFORMATION **ALUMINUM PHOSPHIDE** Flammable solid, poison dangerous when wet. Produces Phosphine gas in water Stay upwind, wear special protective clothing. Contain runoff. **See MSDS/SDS for further information**

Warning signs. Approved warning signs indicating the danger, type of chemical involved and necessary precautions shall be posted on all doors and entrances to the premises. Such notices shall be printed in red ink on a white background. Letters in the headlines shall be at least 2 inches (51 mm) in height and shall state the date and time of the operation, the name and address of the person conducting the fumigation or insecticidal fogging, the name of the operator in charge, and a warning stating that the occupied premises shall be vacated at least 1 hour before the operation begins and shall not be reentered until the danger signs have been removed by the proper authorities. Advance notice shall be given to all occupants of the building or structure where fumigation and insecticidal fogging operations are to be conducted to warn of the hazards of such operation.

Warning signs or placard shall read:

WARNING — DO NOT ENTER — NO SMOKING
PREMISES BEING FOGGED WITH: _____ (Name of insecticide and name of solution) _____

FOGGER: _____ ADDRESS: _____

PHONE: _____ NAME OF OPERATOR: _____

Watch personnel. During the period fumigation is in progress, except when fumigation is conducted in a gas-tight vault or tank, a capable, alert watcher shall remain on duty at the entrance or entrances to the enclosed fumigated space until after the fumigation is completed and the premises is properly ventilated and safe for occupancy. Sufficient watchers shall be provided to prevent persons from entering the enclosed space under fumigation. The watch personnel must be able to report emergencies without leaving their posts.

Ventilation and cleanup. At the end of the exposure period, fumigators shall safely and properly ventilate the premises and contents; properly dispose of fumigant containers,

residues, debris and other waste materials; and clear obstructions from gas-fired appliance vents.

11. Restrictions

Prohibited insecticidal fogging liquids. It shall be unlawful to use insecticidal fogging liquids with a flash point below 100 degrees F (38 degrees C).

Wrapping of buildings. Paper and other similar combustible materials that are not flame resistant shall not be used to wrap or cover a building in excess of that required for the sealing of cracks, casements and similar openings.

Flammable fumigants restricted. It shall be unlawful to use carbon disulfide and hydrogen cyanide for fumigation unless conducted on a premises used solely for agriculture.

12. Fire Safety

12.1 FIRE EXTINGUISHERS

At least one portable fire extinguisher with a minimum 20B rating must be provided during fumigation or insecticidal fogging.

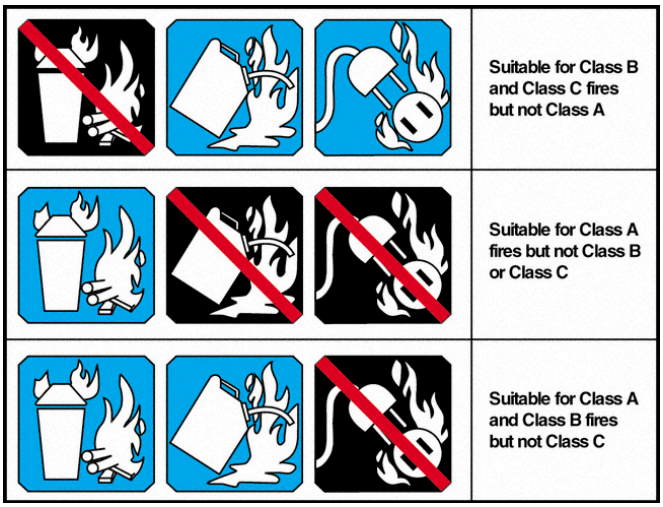
The Certificate of Fitness (COF) holder or watchperson must be familiar with the different types of fire extinguishers that are present. The COF holder or watchperson must know how to operate the extinguishers in a safe and efficient manner. He/she must know the difference between the various types of fires and the extinguishers appropriate for use in that particular fire. The different classes of fires are described below.

Classes of Fire Extinguishers

CLASSES OF FIRES	TYPES OF FIRES	PICTURE SYMBOL
A	Wood, paper, cloth, trash & other ordinary materials.	
B	Gasoline, oil, paint and other flammable liquids.	
C	May be used on fires involving live electrical equipment without danger to the operator.	
D	Combustible metals and combustible metal alloys.	
K	Cooking media (Vegetable or Animal Oils and Fats)	

A **Multipurpose dry chemical** fire extinguisher may be used to extinguish Class A, B, or C fires.

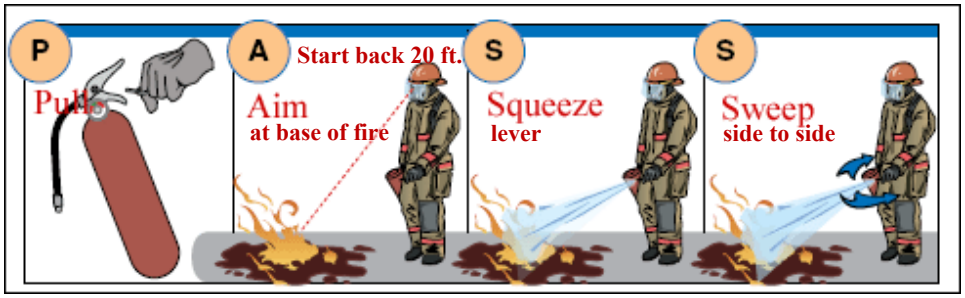
Typical Symbols Painted on Fire Extinguishers
The symbol with the shaded background and the slash indicate when the extinguisher must not be used. Symbols may also be painted on the extinguisher. The symbols indicate what kind of fires the extinguishers may be used on. The COF holder and watch person must understand these symbols. Examples of these symbols are shown below.



Generally, operation instructions are clearly painted on the side of the fire extinguisher. They clearly describe how to use the extinguisher in case of an emergency. An example of these instructions is shown below.

In case of any fire, 911 must be called.

Fire extinguishers must be used in accordance with the instructions painted on the side of the extinguisher. They clearly describe how to use the extinguisher in case of an emergency. The Certificate of Fitness holder or watchperson should be familiar with the use of portable fire extinguishers. When it comes to using a fire-extinguisher just remember the acronym P.A.S.S. to help make sure you use it properly. **P.A.S.S. stands for Pull, Aim, Squeeze, Sweep.** An example of these instructions is depicted in the picture below.



12.2 PORTABLE FIRE EXTINGUISHER TAGS

Installed portable fire extinguishers must have an FDNY standard PFE tag affixed. This tag will have important information about the extinguisher. By November 15, 2019, all portable fire extinguishers must have the new PFE tags. The FDNY will only recognize new PFE tags and will be issuing violations to business that have PFE installed without a proper tag.

The color of the fire extinguishers may be changed by the FDNY every few years. The FDNY recommends two ways to verify the tag's legitimacy:

1. Hologram:

A real hologram strip shown on the tag is 3 inches long by ¼ inch wide. Counterfeit tags will NOT have a high quality silver hologram. The hologram on a counterfeit tag will NOT change color as it is moved against the light.

2. QR code

IF you scan the QR code, it should direct you to the updated FDNY approved fire extinguisher company list. You can use the company list to verify if the company printed on the list is currently approved by the FDNY.

If your PFE tags cannot be verified via these two methods, contact your supervisor. If you suspect your PFE is a counterfeit, contact FDNY immediately by e-mail: Tags.Decal@fdny.nyc.gov

PFE tag (This tag is released for 2021-2023)

This study material is provided to the public for free by the FDNY.

12.3 PORTABLE FIRE EXTINGUISHER INSPECTIONS

MONTHLY

The portable fire extinguishers are required to be checked monthly. The owner of the business is responsible to select a person to do a monthly inspection. This monthly inspection is called a "quick check".

The **QUICK CHECK** should check if:
(1) the fire extinguisher is fully charged;
(2) it is in its designated place;
(3) it has not been actuated or tampered with;
(4) there is no obvious or physical damage or condition to prevent its operation.

The information of the monthly inspection record must include the date of the inspection, the name/initials of the person who did the inspection. This monthly quick check is documented on the back of the PFE tag or by an approved electronic method that provides a permanent record.

ANNUALLY

At least annually all Portable Fire Extinguishers must be checked by a W-96 Certificate of Fitness holder from FDNY approved company. After each annual inspection W-96 COF holder will replace the PFE tag. The information of the annual inspection record must be indicated on the new PFE tag.

12.4 NOTIFICATION OF UNSAFE CONDITION

The person responsible for Fumigation and Insecticidal Fogging should notify their supervisor or site safety manager if an unsafe condition has been created. Any person who becomes aware of a fire, explosion, large spill, leak or any other emergency shall immediately report such emergency to the Fire Department (Call 911). No owner or other person shall issue any directive or take any action to prevent or delay the reporting of a fire or other emergency to the Fire Department. After calling the Fire Department, the supervisor or the site safety manager or other designated person should also be notified.

The Certificate of Fitness holder must know the locations of and how to operate all fire extinguishing devices, control devices, and fire alarm stations installed at the facility. In case of a fire, explosion, or emergency, the Certificate of Fitness (C of F) holder must notify the Fire Department by phone immediately.
After notification by phone, the local fire alarm must be sounded. In some cases, the activation of the fire alarm will transmit a signal to the Fire Department via a FDNY approved central station company. The C of F holder shall initiate an orderly evacuation when necessary following a hazardous incident, and take reasonable steps to isolate the hazard until the Fire Department arrives. The Certificate of Fitness holder must answer any questions asked by Firefighters and officers when they arrive. For example, he or she must indicate the location of the fire, describe the type of fire protection devices available, and describe the materials stored on the fire floor. The Bureau of Fire Prevention must be notified as soon as possible after an explosion or fire has occurred. The Bureau of Fire Prevention may require a detailed report on the causes and the consequences of the explosion or fire. Generally, this report must be filed within ten days after the incident.

13. Storage of Combustible and/or Toxic Fumigants and Pesticides

13.1 DEFINITIONS

Incompatible Materials - Materials that, if mixed or combined, could explode, generate heat, gases or other byproducts, or react in a way hazardous to life or property.

Highly Toxic Material: a chemical that is lethal at the following doses or concentration, including the following:

- A chemical that has a median lethal dose (LD50) of 50 milligrams or less per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each; or
- A chemical that has a median lethal dose (LD50) of 200 milligrams or less per kilogram of body weight when administered by continuous contact for 24 hours (or less if death occurs within 24 hours) with the bare skin of albino rabbits weighing between 2 and 3 kilograms each; or
- A chemical that has a median lethal concentration (LC50) in air of 200 parts per million by volume or less of gas or vapor, or 2 milligrams per liter or less of mist, fume or dust, when administered by continuous inhalation for one hour (or less if death occurs within 1 hour) to albino rats weighing between 200 and 300 grams each.

LD50: LD stands for "Lethal Dose". A LD50 value is the amount of a solid or liquid material that it takes to kill 50% of test animals (for example, mice or rats) in one dose. It is a standard measurement of the short-term poisoning potential (acute toxicity) of a solid or liquid material. LD50 values are expressed in terms of the tests and animal used (i.e. LD50 (oral, rat), LD50 (skin, mouse)) other animals (dogs, hamsters, cats, guinea-pigs, rabbits, and monkeys) are sometimes utilized but the Fire Code is very specific regarding test species (oral-rats and skin-rabbets). The LD50 value is expressed as the weight of chemical administered per kilogram body weight of the animal, the test animal used and route of exposure. So, the example "LD50 (oral, rat) 5 mg/kg" means that 5 milligrams of that chemical for every 1 kilogram body weight of the rat, when administered in one dose by mouth, causes the death of 50% of the test group.

LC50: LC stands for "Lethal Concentration". A LC50 value is the amount of a gas, dust or mists that it takes to kill 50% of test animals (for example, mice or rats) in one dose. Like LD50 various tests and animals may be utilized. In addition the duration of exposure may vary. For the purposes of the Fire Code this is a one hour test utilizing rats.

Liquid - A material having a melting point that is equal to or less than 68°F (20°C) and a boiling point that is greater than 68°F (20°C) at 14.7 psia (101 kPa). When not otherwise identified, the term “liquid” includes both flammable and combustible liquids.

Maximum Allowable Quantity Per Control Area (MAQ) - The maximum amount of a hazardous material allowed to be stored or used within an indoor or an outdoor control area.

Solid - A material that has a melting point and decomposes or sublimates at a temperature greater than 68°F (20°C).
Toxic Material: A chemical that is lethal at the following doses or concentration:

- A chemical that has a median lethal dose (LD50) of more than 50 milligrams per kilogram, but not more than 500 milligrams per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each; or
- A chemical that has a median lethal dose (LD50) of more than 200 milligrams per kilogram but not more than 1,000 milligrams per kilogram of body weight when administered by continuous contact for 24 hours (or less if death occurs within 24 hours) with the bare skin of albino rabbits weighing between 2 and 3 kilograms each; or
- A chemical that has a median lethal concentration (LC50) in air of more than 200 parts per million but not more than 2,000 parts per million by volume of gas or vapor, or more than 2 milligrams per liter but not more than 20 milligrams per liter of mist, fume or dust, when administered by continuous inhalation for 1 hour (or less if death occurs within 1 hour) to albino rats weighing between 200 and 300 grams each.

13.2 HAZARDOUS MATERIALS REPORTING

The storage of hazardous materials shall be reported as required by the New York State General Municipal Law Section 209-u. The commissioner may require an application for a permit pursuant to this code to include a copy of the current filing pursuant to such New York State General Municipal Law for the facility or premises for which a permit is sought. (See Appendix D "Hazardous Materials Report Form")

Hazardous Materials Management Plan: The commissioner may require each application for a permit to include a Hazardous Materials Management Plan (HMMP). Such plan shall be drawn approximately to scale. The HMMP shall contain the following:

- Storage, handling and use areas.
- Maximum amount of each material stored, handled or used in each area.
- Type and size of containers to be used for storage.
- Location of valves and devices used to control and mitigate the accidental or unauthorized release of hazardous materials, and where such valves are of the self-indicating type, an illustration of their on and off position.
- Piping through which hazardous material liquids or gases are transferred, other than utility-owned natural gas lines and low-pressure natural gas lines subject to compliance with the requirements of the Plumbing Code.

- Storage plan showing the storage arrangement, including the location and dimensions of aisles.
- The location and type of emergency equipment.
- Such other information and documentation as the commissioner may prescribe.

HMMP when required shall be submitted to:
Toxic Substance Unit
Haz-Mat Battalion FDNY
Division of Training, Building 8
Randall's Island, NY 10035

13.3 COMBUSTIBLE LIQUID STORAGE

Quantities requiring a permit AND Supervision by a C-97 certificate of fitness holder

Material	**Permit Quantity**	**COF Quantity**
Combustible liquid flashpoint **<300°F**	10 gallons	10 gallons
Combustible solid flashpoint **>300°F**	70 gallons	Not required

Examples of Pesticides that are Combustible Liquids

Pyrethrins- Class IIIA	
Flashpoint	88 °C / 190 °F

Permethrins- Class II	
Flashpoint	42.2 °C / 108 °F

Storage below grade.

Class II and IIIA liquids are allowed to be stored in basements, cellars or other areas below grade provided area is protected throughout by a sprinkler and/or other approved fire protection system.

Class IIIB liquids may be stored in basements, cellars and other areas below grade that are not protected throughout by a sprinkler system when stored in a room or other area that is segregated, vertically and horizontally, from surrounding spaces by a fire separation of not less than 2-hour fire-resistance rating and such room or other area is protected throughout by a sprinkler system.

Quantity limits for indoor container storage

It shall be unlawful to store combustible liquids in containers with an individual capacity of greater than 60 gallons and only approved containers in compliance with NFPA 30 must be used for Class II and Class IIIA combustible liquids. *There are no container type or size restrictions for Class IIIB liquids.* It shall be unlawful to store combustible liquids in portable tanks, intermediate bulk containers and fiber drums.

A. Maximum allowable container capacity

Combustible Liquids		
Container Type	**Class II**	**Class IIIA**
Glass	1.3 gal	5.3 gal
Metal (other than DOT drums) or approved plastic	5.3 gal	5.3 gal
Safety cans	5.3 gal	5.3 gal
Metal container (DOT specification)	60 gal	60 gal
Polyethylene (DOT specification)	60 gal	60 gal

LIQUID STORAGE CABINETS

Where the Fire Department requires that liquid containers be stored in storage cabinets, such cabinets and storage shall be in accordance with the following:

The cabinet must be listed in accordance with UL 1275. All cabinets must be provided with a conspicuous label in red letters on contrasting background which reads: FLAMMABLE-KEEP FIRE AWAY. The door must be well fitted, self-closing and equipped with a three-point latch. The bottom of the cabinet must be liquid-tight to a height of at least 2 inches.

The combined total quantity of liquids in a cabinet must not exceed 120 gallons. Maximum 3 cabinets is allowed to be located in a single fire area, except that in a Group F occupancy (e.g. a factory and industrial occupancy or repair garage), additional cabinets are allowed to be located in the same fire area if the additional cabinets (or groups of up to 3 cabinets) are separated from other cabinets or groups of cabinets by at least 100 feet.

In all occupancies, quantities of combustible liquids requiring a permit, used for maintenance purposes and the operation of equipment, shall be stored in liquid storage cabinet. Quantities not requiring a permit shall be stored in approved containers and locations.

13.4 HIGHLY TOXIC AND TOXIC MATERIALS STORAGE

Common Abbreviations: The following table lists some common abbreviations utilized in toxicology information.

gm	gram
gpg	guinea pig
grb	gerbil
ham	hamster
idr	intradermal
kg	kilogram
L	liter
LC50	lethal concentration 50 percent kill
LCLo	lowest published lethal concentration
LD50	lethal dose 50 percent kill
LDlo	lowest published lethal dose
m3	cubic meter
ug	microgram
mg	milligram
mky	monkey
mL	milliliter

mus	mouse
NOAEL	No Observed Adverse Effect Level
ppb	parts per billion (v/v)
ppm	parts per million (v/v)
rat	rat
rbt	rabbit
scu	subcutaneous
skn	administration onto skin
STEL	short term exposure limit
TC	toxic concentration (other than lowest concentration)
TCLo	lowest published toxic concentration
TD	toxic dose (other than lowest toxic dose)
TDLo	lowest published toxic dose
TLV	Threshold Limit Value
TWA	time weighted average

PERMITS AND CERTIFICATES OF FITNESS

Quantities requiring a permit AND Supervision by a C-97 certificate of fitness holder

Toxic Liquids	10 gallons		Highly Toxic Liquids	Any Amount
Toxic Solids	100 pounds		Highly Toxic Solids	Any Amount

The **storage** of highly toxic and toxic materials in quantities requiring a permit shall be under the **general supervision** of a certificate of fitness holder.

13.5 MATERIAL DESCRIPTION

Toxic chemicals are chemicals that can produce injury or death when inhaled, ingested, or absorbed through the skin. While damage may be acute or chronic the Fire Code is only concerned with acute lethality. The extent of lethality depends on the dose and duration of exposure. Exposure may enter the body through three routes: inhalation, ingestion, or contact with the skin and eyes.

One of the best sources of information regarding toxicity is a MSDS. However the reporting of LD50/LC50 data on MSDS's is optional and there is no standard format when it is reported. Other reference materials are also available but care must be taken to ensure the relevance of the data. The following table is some examples on how this information is applied.

Categories of Acute Toxicity

Category	Signal Word Required on Label	Oral Ld50 Mg/kg	Dermal LD50 mg/kg	Inhalation LC50 mg/l	Approximate Oral dose that can Kill an Average Person
Highly toxic	DANGER- [Poison! Skull Crossbones]	<50	<200	< 2	A few drops to 1 teaspoon full [or a few drops on the skin]
Toxic	WARNING!	50 to 500	200 to 1000	2 to 20	Over 1 teaspoonful to 1 ounce
Slightly/ Non-Toxic	CAUTION!!	>500	> 1000	> 20	Over 1 ounce

Caution: It is the permit holder's responsibility to be knowledgeable in the toxicological information and the appropriate relevance of Fire Code requirements. The lack of LD50/LC50 information on an MSDS does not imply such information does not exist or the Fire Code requirements for Toxic or Highly Toxic materials do not apply.

It is important to recognize that LD50/LC50 values will vary by route of exposure and animal species tested as well as from study to study. Additionally these values will vary by concentration of pure material in mixtures and commercial products. For example the oral LD50 for pure warfarin is much less than the oral LD50 for 0.025% warfarin in rat bait.

As a result it is important to refer to the specific tests required by the Fire Code when determining the toxicity of a particular material. The following is one examples of how toxicological information can be presented on MSDS's

Example for Cypermethrin Insecticide 30.6%

Section 11 - Toxicological Information LD50/LC50:CAS# 52315-07-8:
Acute oral LD50: 355 mg/kg Acute dermal LD50: > 2,000 mg/kg (rabbit) Acute inhalation LC50: >2.02 mg/L (4 hr. rat) Eye and skin irritation: Moderately irritating Dermal sensitization: Not a sensitizer

For the purposes of Fire Code compliance, is it important to have supporting documentation regarding the toxicity of the specific materials being stored, handled or used. Generally this would be MSDS's. Care should be exercised when changing material vendors as the MSDS information may be different. It is the facility storing, handling or

using these chemicals to know their toxicity and be able to demonstrate to an inspector that the appropriate classification and handling procedures are being used.

The level of toxicity of Highly Toxic and Toxic Materials may be reduced by diluting such materials with other materials, such as water, to a degree that the resulting mixture may no longer be Highly Toxic or Toxic.

For the purposes of Fire Code compliance, a mixture containing any amount of Highly Toxic and/or Toxic material is presumed to be a highly toxic or toxic material, as applicable, unless it is otherwise certified and labeled by the manufacturer.

The Fire Code is not designed to regulate industrial hygiene in work areas. Employers are encouraged to consult the OSHA or the American Conference of Governmental Industrial Hygienists (ACGIH) exposure standards regarding routine work site exposures and personal protection equipment (PPE's) recommendations. These standards are expressed in terms of Threshold Limit Values (TLV), Time Weighted Average (TWA), Short Term Exposure Limit (STEL), and Ceiling Value, Immediately Dangerous to Life or Health (IDLH) and permissible exposure limits (PEL).

13.6 GENERAL STORAGE REQUIREMENTS

DOT INFORMATION

The USDOT regulates the transportation of hazardous materials and while these rules are not under the scope of the Fire Code certain portions of them can be a useful resource for material identification, in particular the shipping descriptions and hazard packaging labels. The following table summarizes the DOT hazard labels, typical shipping names/DOT classes and cross references to related Fire Code sections.

DOT LABELS	REFERENCE EXAMPLES
	Fire Code Chapter 34 Combustible Liquids
	Pesticides, liquid, combustible 3
 	Fire Code Chapter 37 Toxics
	Pesticides, liquid, toxic 6.1

If a particular material meets the definition of more than one DOT hazard class or division, compliance with each hazard class shall be required. Where a material is both a physical hazard and a health hazard, compliance with the requirements for each hazard class shall be required.

LOCATION STORAGE RESTRICTIONS

Please note that the maximum allowable quantity (MAQ) of any hazardous material stored or used within an indoor control area is dependent on the floor location relative to the ground floor (the ground floor being the least restrictive location). The MAQ of any hazardous material in control areas located above the ground floor or below grade are strictly reduced by a fixed percentage as specified by Fire Code Section 2703.8.3. Furthermore, the same Fire Code section limits the number of control areas allowed on any specific floor relative to the ground floor (the ground floor being the least restrictive location).

MAQ for ground floor storage per control area*

Type of Hazard	MAQ
Combustible liquid with a flashpoint <140°F	120 gallons (gal)
Combustible liquid with a flashpoint 141 °F- 199 °F	330 gallons (gal)
Combustible liquid with a flashpoint >200 °F	13,200 gallons (gal)
Toxic liquid	500 pounds (lbs.)
Toxic solid	500 pounds (lbs.)
Highly Toxic Liquid	10 pounds (lbs.)
Highly Toxic Solid	10 pounds (lbs.)

***All quantities can be doubled in fully sprinklered buildings**
***All quantities can be doubled when stored in approved storage cabinets**

The indoor storage of any hazardous material in excess of the MAQ in any one control area shall require that the control area be classified as a High Hazard occupancy.

GENERAL REQUIREMENTS FOR CONTAINERS STORED INDOORS

Empty containers

Empty containers and tanks previously used for the storage of hazardous materials shall be free from residual material and vapor in compliance with the requirements of DOTn, the Resource Conservation and Recovery Act (RCRA) or other governmental agencies having jurisdiction, or shall be stored, handled and used in compliance with the requirements of the Fire Code.

The storage of empty containers previously used for the storage of hazardous materials shall be stored as required for filled containers. Containers, when emptied, shall have the covers or plugs immediately replaced in openings, be removed to an outdoor location and, if not cleaned on the premises, the empty containers shall be removed from the premises as soon as practical, but at least daily.

Containers storage arrangement

Shelf storage of combustible liquids shall be maintained in an orderly manner. Shelving shall be of approved noncombustible construction, adequately braced and anchored. Seismic requirements shall be in accordance with the construction codes, including the Building Code.

Clearance from incompatible materials

The MSDS's should be consulted regarding specific incompatibilities. Materials that will react with water or other liquids to produce a hazard shall not be stored in the same room/cabinet with combustible liquids. Incompatible materials, shall be separated while in storage except for stored materials in individual containers each having a capacity of not more than 5 pounds or 0.5 gallon. Separation shall be accomplished by:

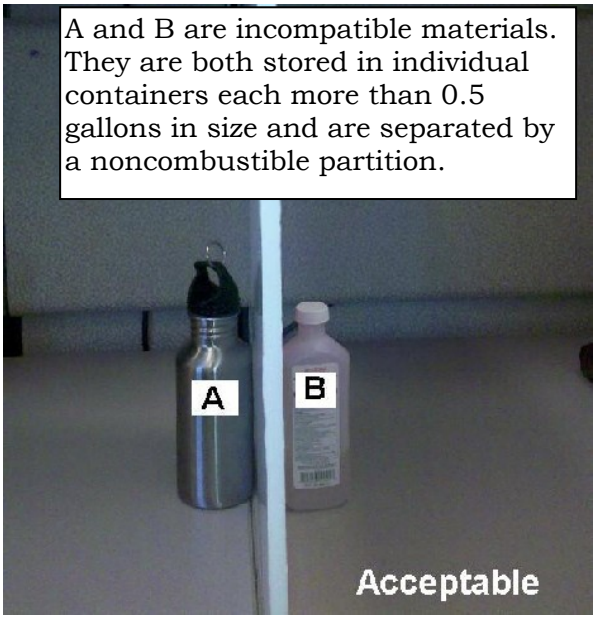
- Segregating incompatible materials in storage by a distance of not less than 20 feet.

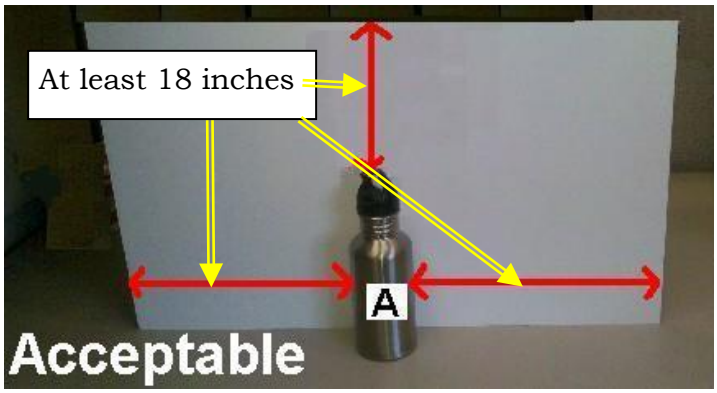
Or

- Storing liquid and solid materials in hazardous material storage cabinets. Materials that are incompatible shall not be stored in the same cabinet.

Or

- Isolating incompatible materials in storage by a noncombustible partition extending not less than 18 inches above and to the sides of the stored material.





Means of access to an exit

It shall be unlawful to obstruct or impede access to any required means of egress. All required means of egress, including each exit, exit access and exit discharge, shall be continuously maintained free from obstructions and impediments to immediate use in the event of fire or other emergency. Storage of any liquids, including stock for sale, shall not be stored near or be allowed to physically obstruct the route of egress.

13.6 GENERAL HOUSEKEEPING AND GOOD WORK PRACTICES

Poor housekeeping & work practices are one of the leading causes of hazardous material incidents, work place accidents and fires. Poor housekeeping can result in fire accidents, lost tools/supplies, damaged equipment and contribute to higher operating costs. Good housekeeping minimizes fire, accidents, reduces waste & disposal costs, increases efficiency and generally results in cheaper production costs. Areas kept in neat & organized condition provides a positive impression on inspectors. The following is some guidance on good practices.

GENERAL HOUSEKEEPING AND STANDARDS:

- Access doors, aisles and exit doors clear of obstructions. Keep storage of items out of hallways and stairwells. The Fire Code contains various requirements for aisle spacing depending upon stacking arrangements.
- Whenever feasible, outdoor storage areas should be covered to prevent contamination by the elements.
- Secure storage areas to minimize liability and hazards of intrusion or dumping.
- Be familiar with the use, limitations and location of emergency equipment such as emergency eyewashes, safety showers, fire alarms, exits and fire extinguishers.
- Be aware of Fire Code storage requirements for permit and certificates of fitness.
- Material Safety Data Sheet (MSDS) information should be readily available.

GENERAL STORAGE

- Containers should be in good condition and closed when not in use.
- Defective containers shall be promptly removed from service or disposed of in approved manner.
- Chemicals should be stored per manufacturer's recommendations and in such a way to minimize the potential for tipping, tearing, puncture, or breakage.
- Combustible material must be stored away from open flame or other ignition sources.
- Do not store chemicals above eye level except for containers that are removed with mechanical equipment (e.g., fork-lift).
- Do not store unprotected glass containers on the floor.
- Don't stack equipment against containers.

- Raise drums off floor to prevent corrosion from concrete "sweating" or storage in “wet” areas (i.e. pools).
- Segregate incompatible materials/wastes by hazard category to prevent reactions (e.g. acids and bases).
- Storage area should be checked periodically for container integrity, leaks, older stock, faded/missing labels etc.
- Know the characteristic of the material begin stored and possible interaction with other material stored.
- Piles of chemicals should be stacked in a secure manner, properly labeled in closed containers.

14. Check List

The purpose of the **FDNY CHECKLIST** is to ensure that standardized processes are followed at all times by Certificate of Fitness holders. Many of the steps are commonly known by technicians but relying simply on memory can lead to significant errors or forgotten steps by C of F holders. The checklist also allows C of F holders to document their actions at the work site. After completion of the CHECKLIST, one C of F holder must sign the final report. All items on the checklist must be completed.

The blank space appears when the answer in non-applicable. On the back of the checklist, there is space for additional comments.

All W-97/C-97 C of F holders must complete this Checklist. If any Items have an (**M**-Mandatory), they have high safety importance. All M's must performed as required by the NYC code regulations. This check list is important since public safety may be jeopardized by not following the required actions. The check list will be covered in the exam.

It is recommended after fogging or fumigation that you provide the full written instructions to the client about post operations. Checklist items 17-23 can be provided in a separate sheet.

You do not need provide the entire checklist to the client. The client should sign that they received they received the instructions. If the clients refuse to sign it or chose not to sign, simply note it on the checklist.

Re: Business name: _____
Address: _____
City & State: _____
Phone: _____
I have received post application instructions (#17- 23).
Name_____
Signature: _____ Date: _____

Company Name
Address
City, ST, Zip Code
CO Certification #_____

Technician Name: _____
Signature: _____
Date: _____
C of F #: _____Exp Date: _____

		☒ Applications that required to do the Item #				
A. Pre-Application		**Fumigation**	**Fogging**	**Cold ULV Fogging**	**Response**	**Comments**
1. Have you notified the FDNY in writing (Fumigation / fogging)?	**M**	☒	☒		☐Yes ☐No	Date of Notifications_____
2. Have you notified the Bldg. occupants to evacuate the space to be fogged?	**M**	☒	☒	☒	☐Yes ☐No	Name:
3. Have you placed warning signs or placard on all doors & entrances, etc…	**M**	☒	☒	☒	☐Yes ☐No	If no, explain reasons on back of page in comments section.
4. Have you provided detail info about the procedures before and after to the owner, occupants and property?	**M**	☒	☒	☒	☐Yes ☐No	Name: _____
5. Are you wearing your personal protective safety equipment?	**M**	☒	☒	☒	☐Yes ☐No	If no, explain reasons on back of page in comments section.
6. Have pilot lights been shut off? Have the compressor and all appliances been disconnected?	**M**	☒	☒	☒	☐Yes ☐No	If no, explain reasons on back of page in comments section.
7. Are all openings to the space to be fumigated or fogged securely closed?	**M**	☒	☒	☒	☐Yes ☐No	If no, explain reasons on back of page in comments section.
8. Have you read and understood label directions?	**M**	☒	☒	☒	☐Yes ☐No	If no, explain reasons on back of page in comments section.
9. Have smoke detectors been taken off line in the affected area?	**M**	☒	☒	☒	☐Yes ☐No	If no, explain reasons on back of page in comments section.
10. Has central station been notified that smoke detector is off line?	**M**	☒	☒	☒	☐Yes ☐No	If no, explain reasons on back of page in comments section.
11. Is a portable fire extinguisher with at least 20-B rating available?	**M**	☒	☒	☒	☐Yes ☐No	If no, explain reasons on back of page in comments section.
B. During application						
13. Is there watch person present while you fumigate?	**M**	☒			☐Yes ☐No	If no, explain reasons on back of page in comments section.
14. Start at the furthest point & work towards your exit.	**M**	☒	☒	☒	☐Yes ☐No	If no, explain reasons on back of page in comments section.
C. Post-Applications						
15. Has the designated person checked the premise after completion?	**M**	☒	☒	☒	☐Yes ☐No	Name: _____
16. Have you properly instructed the bldg. owner or client when they can re-enter the space?	**M**	☒	☒	☒	☐Yes ☐No	If no, explain reasons on back of page in comments section.
17. Have you properly instructed the bldg. owner or client of the ventilation necessary adhering to the label instructions after completion?	**M**	☒	☒	☒	☐Yes ☐No	If no, explain reasons on back of page in comments section.
18. Have you properly instructed the bldg. owner or client of sanitary clean up?	**M**	☒	☒	☒	☐Yes ☐No	If no, explain reasons on back of page in comments section.
21. Have you properly instructed the bldg. owner or client to ensure smoke detectors have been put back on line?	**M**	☒	☒	☒	☐Yes ☐No	If no, explain reasons on back of page in comments section.
22. Have you properly instructed the bldg. owner or client to ensure that central station has put the smoke detectors back online?	**M**	☒	☒	☒	☐Yes ☐No	If no, explain reasons on back of page in comments section.
23. Have you obtained signature from client?		☒	☒	☒	☐Yes ☐No	Name: _____

M – *Mandatory items are required to comply as per NYC Fire Dept. Code.*

This study material is provided to the public for free by the FDNY.

Additional Comments:

Section / Item #	Comments

Appendix A. Sample MSDS/SDS

MATERIAL SAFETY DATA SHEET

Prescription Treatment brand F.D. Contact Insecticide Formula 100

EMERGENCY PHONE NUMBERS:

MEDICAL: (123)456-7890 **TRANSPORTATION:** (987)654-3210

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Prescription Treatment brand F.D. Contact Insecticide Formula 100
EPA Reg. No.: 123-456
Product Code: 01-2345-6 (12x7 oz)
EPA Signal Word: CAUTION
Distributed by: FDNY Labs
84 Metro Court
NYC, NY 12345

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

COMPOSITION INFORMATION

ACTIVE INGREDIENTS (4.5%)	%	CAS NO.
Pyrethrins	0.6	1234-56-7
Piperonyl Butoxide, Technical	4.1	98-76-4
OTHER INGREDIENTS (95.5%)	**%**	**CAS NO.**
Petroleum Distillate	>10.1	1234-56-7
2-Propanone	proprietary	12-34-5
Hydrocarbons C3 - C4	proprietary	98765-43-2

* All ingredients may not be listed. Ingredients not listed do not meet the reporting requirements of the OSHA Hazard Communication Standard (HCS) as specified in 29 CFR 1910.1200.

EXPOSURE INFORMATION

	OSHA PEL		ACGIH TLV	
MATERIAL	STEL	TWA	STEL	TWA
Pyrethrins	NE	NE	10 mg/m^3	5 mg/m^3
Piperonyl Butoxide, Technical	NE	NE	NE	NE
Petroleum Distillate*	NE	500 ppm	NE	NE
2-Propanone	NE	750 ppm	1,000 ppm	750 ppm
Hydrocarbons C3 - C4	NE	NE	NE	1,000 ppm

*TWA recommended by ingredient supplier = 166 ppm

SECTION 3. HAZARDS IDENTIFICATION

NOTE TO PHYSICIAN

Contains Petroleum distillate - vomiting may cause aspiration pneumonia.

SIGNS/SYMPTOMS OF EXPOSURE

A few cases of extrinsic asthma have been reported for Pyrethrum. Product may produce eye irritation; avoid contact with eyes. Prolonged exposure may cause skin irritation; avoid contact with skin.

ROUTES OF ENTRY

Primary: Inhalation **Secondary:** Skin **Tertiary:** Ingestion

HAZARDOUS DECOMPOSITION PRODUCTS

Thermal decomposition in open flame will result in carbon dioxide and carbon monoxide.

UNUSUAL FIRE, EXPLOSION AND REACTIVITY HAZARDS

Contents under pressure. Exposure to temperatures above 130°F may cause bursting.

SECTION 4. FIRST AID MEASURES

Have the product container or label with you when calling a poison control center or doctor or going for treatment. Describe any symptoms and follow the advice given.

Ingestion: Immediately call a poison control center or doctor. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give ANY liquid to the person. Do not give anything by mouth to an unconscious person.

Skin Contact: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 - 20 min. Call a poison control center or doctor for treatment advice.

Eye Contact: Hold eyes open and rinse slowly and gently with water for 15 - 20 min. Remove contact lenses, if present, after the first 5 min, then continue rinsing eyes. Call a poison control center or doctor for treatment advice.

Inhalation: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

Note to Physician: Contains petroleum distillate – vomiting may cause aspiration pneumonia.

Medical Conditions Generally Aggravated by Exposure: None known

SECTION 5. FIRE FIGHTING MEASURES

FIRE AND EXPLOSION

Flash Point (TCC): -4°F
Flame Projection: > 18"
Explosibility Limits of Propellant in Air (% by volume):
Lower (LEL) = 2.2% Upper (UEL) = 9.5%
NFPA 30B Flammability: Level 3 Aerosol

UNUSUAL FIRE, EXPLOSION AND REACTIVITY HAZARDS

Contents under pressure. Exposure to temperatures above 130°F may cause bursting.

IN CASE OF FIRE

Extinguisher Media: Carbon Dioxide, Dry Chemical, Foam, Water
Special Fire Fighting Procedures: Fire fighting personnel should wear full protective equipment and positive pressure self-contained breathing apparatus (SCBA) approved for firefighting.

SECTION 6. ACCIDENTAL RELEASE MEASURES

IN CASE OF SPILL OR LEAK

If container begins to leak (through puncture, etc.), eliminate all ignition sources and allow to discharge completely in well ventilated area, then dispose of as directed below.

This product contains the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) listed chemicals *Pyrethrins* which has a reportable quantity (RQ) of 1 lb and *2-propanone* which has a reportable quantity (RQ) of 5,000 lbs. A release of more than 190 lbs of this product (approx. 170 cans) is reportable to the National Response Center (800-424-8802).

PROTECTIVE EQUIPMENT FOR CLEANUP PERSONNEL

Eyes: Use proper protection – safety glasses are recommended.

Skin: Wear chemical-resistant gloves. (Good practice requires that gross amounts of any chemical be removed from the skin as soon as practical, especially before eating or smoking.)

Inhalation: Use of a respirator may be appropriate when working with spills in enclosed or confined spaces, or when prolonged exposure to product vapor or spray mist may occur. When using a respirator, wear a NIOSH approved respirator with an organic vapor (OV) cartridge or canister with any R or P prefilter. See 29 CFR 1910.134 for respiratory protection, training and testing requirements.

WASTE DISPOSAL METHOD

Do not contaminate water, food or feed by storage or disposal of wastes. Take full or leaking containers to a local disposal company for biological treatment or incineration. Review all local, state and federal regulations concerning health and pollution to determine approved disposal procedures. NEVER PLACE WASTES DOWN ANY INDOOR OR OUTDOOR DRAIN OR SEWER.

SECTION 7. HANDLING AND STORAGE

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Keep out of reach of children. **CAUTION** – Harmful if absorbed through skin. Avoid contact with eyes, skin or clothing. Wash hands before eating, drinking, chewing gum or using the toilet.

OTHER PRECAUTIONS

Do not spray on plastic, painted or varnished surfaces or directly into any electronic equipment such as radios, televisions, computers, etc. In health care facilities patients should be removed from room prior to treatment. Room should be ventilated for 2 hr after spraying. Do not return patients to room until after ventilation. In food processing areas all utensils, shelving, etc. where food will be handled should be covered or removed before treatment or thoroughly washed with an effective cleaning compound followed by a potable water rinse prior to use.

PHYSICAL OR CHEMICAL HAZARDS

Extremely Flammable. Contents under pressure. Keep away from fire, sparks and heated surfaces. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.

STORAGE

Do not contaminate water, food or feed. Store in a cool, dry area away from heat or open flame and inaccessible to children.

SECTION 8. EXPOSURE CONTROL/PERSONAL PROTECTION

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Respiratory Protection: None required for typical use exposure. See Section 6 for atypical exposure.

Protective Gloves: Chemical-resistant gloves are recommended if prolonged or repeated skin contact is likely. (Good practice requires that gross amounts of any chemical be removed from the skin as soon as practical, especially before eating or smoking.)

Eye Protection: Use proper protection - safety glasses are recommended.

Other Protective Equipment: None required

This is a sample MSDS/SDS. Key information has been changed. **Information provided is for test taking purposes only.**

Prescription Treatment brand F.D. Contact Insecticide Formula 100

VENTILATION

Local Exhaust: None required
Mechanical: None required
Special: None required
Other: Ventilate treated areas before reoccupying.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Coarse spray
Solubility in Water: Soluble
Viscosity: NE
Boiling Point: NE
pH: NE
Odor: Characteristic Pyrethrin odor
Vapor Pressure: 95 psig @ 70°F
Vapor Density: NE
Freezing/Melting Point: NE
Specific Gravity: 0.80 g/cm^3 @ 68°F

SECTION 10. STABILITY AND REACTIVITY

REACTIVITY

Stability: Indefinite when stored and used according to label directions.
Conditions to Avoid: Do not spray into open flame or onto very hot surfaces.
Incompatibility (Material to Avoid): None known
Hazardous Polymerization: Will not occur

HAZARDOUS DECOMPOSITION PRODUCTS

Thermal decomposition in open flame may result in carbon dioxide and carbon monoxide.

SECTION 11. TOXOLOGICAL INFORMATION

ROUTES OF ENTRY

Primary: Inhalation **Secondary:** Skin **Tertiary:** Ingestion

ACUTE

Eye: Product did not produce any conjunctival irritation, nor was any corneal opacity or iritis observed (rabbits).
Skin: Acute dermal toxicity: LD_{50} > 2,000 mg/kg (rabbits). Primary skin irritation Index = 0.13 (rabbits). Product is not a dermal sensitizer when tested on guinea pigs.
Ingestion: Acute oral toxicity: LD_{50} > 5,000 mg/kg (rats).
Inhalation: Unlikely due to the product being pressurized and producing particles large enough not to be respirable. Acute inhalation toxicity: LC_{50} > 4.53 mg/L (rats).

CHRONIC/CARCINOGENICITY

Neither this product nor any of its ingredients are classified as carcinogens by the National Toxicity Program (NTP), the International Agency for Research on Cancer (IARC) or the Occupational Safety and Health Administration (OSHA).

SECTION 12. ECOLOGICAL INFORMATION

This product is toxic to fish. Do not apply directly to water or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water by cleaning of equipment or disposing of equipment wash waters

SECTION 13. DISPOSAL CONSIDERATION

Do not contaminate water, food or feed by disposal. Dispose of container and waste in accordance with all federal, state and local regulations.

Container Disposal: Do not puncture or incinerate! Empty container by using the product according to the label directions. Offer empty container for recycling, if available, or place in trash if allowed by state and local regulations. If container is partly full, contact your local solid waste agency for disposal instructions.

Waste Disposal: Waste resulting from use of this product may be disposed of on site or at an approved waste disposal facility.

SECTION 14. TRANSPORT INFORMATION

SHIPMENT BY GROUND WITHIN U.S. (DOT CLASSIFICATION)

Proper Shipping Description: Consumer Commodity, ORM-D
Package Marking: Consumer Commodity, ORM-D
Package Labeling: None required
Certified Packaging: Not Required

Product in unopened original packaging is compliant with all regulations for ground shipment within the U.S. WMG disclaims any liability for claims or damages that may result from shipment by other means. Packages offered or intended for other modes of transportation are subject to additional requirements. Consult an appropriately trained Shipping Professional before offering for shipment.

SECTION 15. REGULATORY INFORMATION

CERCLA

This product contains the CERCLA listed chemicals *Pyrethrins* which has a reportable quantity (RQ) of 1 lb and *2-propanone* which has a reportable quantity (RQ) of 5,000 lbs.

SARA TITLE III SECTION 311/312 HAZARD CLASS

This product has been reviewed according to the EPA "Hazard Categories" promulgated under Section 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Immediate (Acute) Health Hazard
Fire Hazard
Release of Pressure (Puncture) Hazard

SARA TITLE III SECTION 313 CHEMICALS

This product contains the following substances subject to the reporting requirements of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA Title III) and/or 40 CFR Part 372:

Piperonyl Butoxide, Technical (CAS# 51-03-6) 4.0% by weight

TSCA

All components of this product are listed or excluded from listing on the US Toxic Substance Control Act (TSCA) Chemical Substance Inventory.

SECTION 16. OTHER INFORMATION

NFPA HEALTH RATING INFORMATION

HEALTH – 1 FLAMMABILITY – 2 REACTIVITY – 1

HMIS HAZARD RATING SYSTEM

HEALTH – 1 FLAMMABILITY – 2 REACTIVITY – 1

KEY:
4 = Severe
3 = High
2 = Moderate
1 = Slight
0 = Minimal

NA - Not Applicable
NE - Not Established
PEL - Permissible Exposure Limit
TLV - Threshold Limit Value
STEL - Short Term Exposure Limit (15 min)
TWA - Time Weighted Average (8 hr)

This is a sample MSDS/SDS. Key information has been changed. **Information provided is for test taking purposes only.**

Appendix B. Sample Label

Prescription Treatment

F.D.

Contact Insecticide

Formula 100

KILLS:
Angoumois Grain Moths, Ants, Bed Bugs, Booklice, Carpet Beetles, Centipedes, Chocolate Moths, Cigarette Beetles, Clothes Moths, Clover Mites, Cluster Flies, Cockroaches, Confused Flour Beetles, Crickets, Drug Store Beetles, Earwigs, Fleas, Flies, Fruit Flies, Gnats, Grain Mites, Granary Weevils, Horn Flies, House Flies, Indian Meal Moths, Mediterranean Flour Moths, Millipedes, Mosquitoes, Mud Daubers, Red Flour Beetles, Rice Weevils, Sawtoothed Grain Beetles, Silverfish, Small Flying Moths, Sowbugs, Spiders, Stable Flies, Ticks and Wasps

FOR USE IN AND AROUND:
Apartments, Campgrounds, Food Storage Areas, Homes, Hospitals†, Hotels, Motels, Nursing Homes†, Resorts, Restaurants†, and other Food Handling Establishments†, Schools, Supermarkets, Transportation Equipment (Buses, Boats, Ships, Trains, Trucks and Aircraft - Cargo Areas Only), Utilities, Warehouses and other Commercial and Industrial Buildings
† See special instructions for these sites under Directions for Use.

ACTIVE INGREDIENTS:

Pyrethrins, *a botanical insecticide*	0.6%
Piperonyl Butoxide, Technical	4.1%
OTHER INGREDIENTS:	95.3%
	Total: 100%

Contains petroleum distillate.

EPA Reg. No. 123-456

KEEP OUT OF REACH OF CHILDREN

CAUTION

FIRST AID

IF SWALLOWED: Immediately call a poison control center or doctor. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give ANY liquid to the person. Do not give anything by mouth to an unconscious person.
IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 - 20 minutes. Call a poison control center or doctor for treatment advice.
IF IN EYES: Hold eyes open and rinse slowly and gently with water for 15 - 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a poison control center or doctor for treatment advice.
IF INHALED: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.
Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also call (123)456–7890 for emergency medical treatment.
NOTE TO PHYSICIAN: Contains petroleum distillate - vomiting may cause aspiration pneumonia.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Harmful if swallowed or absorbed through skin. Avoid contact with eyes, skin or clothing. Wash hands before eating, drinking, chewing gum or using the toilet.

ENVIRONMENTAL HAZARDS

This product is toxic to fish. Do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water by cleaning of equipment or disposal of washwaters.

PHYSICAL OR CHEMICAL HAZARDS

Extremely Flammable. Contents under pressure. Keep away from fire, sparks and heated surfaces. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.

DIRECTIONS FOR USE

IT IS A VIOLATION OF FEDERAL LAW TO USE THIS PRODUCT IN A MANNER INCONSISTENT WITH ITS LABELING.

- Use only with the supplied actuator and injection tubes or other Whitmire Micro-Gen equipment.
- Do not spray on plastic, painted or varnished surfaces or directly into any electronic equipment such as radios, televisions, computers, etc.
- Aerosols work best when can temperature is above 60°F. If can temperature is below 60°F, store at room temperature until a temperature above 60°F is reached.

CRACK & CREVICE® TREATMENT: Inject F.D. into cracks and crevices or void spaces where insects may be harboring, living and breeding. Place injector tip into cracks, crevices, holes and other small openings. Apply product for 1 second. For light infestations, move injector tip along cracks while treating at the rate of 3 linear feet per second. For heavy infestations, move injector tip along at 1 linear foot per second. For treatment of inaccessible voids (including wall and equipment voids), calculate the void's cubic area and treat at the rate of 5 to 10 seconds per 3 cu. ft. Several holes may be required in long-running voids.

SPACE TREATMENT: Calculate the cubic footage to be treated and apply at the dosage rate specified below for the pest(s) to be treated. Ventilate treated areas before reoccupying.

INDOOR TREATMENTS

CLUSTER FLIES, FLIES, FRUIT FLIES, GNATS, HORN FLIES, HOUSE FLIES, MOSQUITOES, SMALL FLYING MOTHS AND STABLE FLIES: Apply as a space treatment at a rate of 1 to 3 seconds per 1,000 cu. ft. Close all windows and doors. Direct fog upward and disperse in all locations. Keep area closed for 15 minutes. Open and ventilate before reoccupying.
CLUSTER FLIES, CLOVER MITES, WASPS AND BEES INSIDE STRUCTURAL VOIDS: For treatment of these pests, locate all insect entrances and close all but one opening. Determine size of void. Inject 5 to 10 seconds per 3 cu. ft. of void into remaining opening. For best results, treat at dusk or later.
ANTS, BOOKLICE, CENTIPEDES, CLOVER MITES, CRICKETS, MILLIPEDES, ROACHES, SILVERFISH, SOWBUGS AND SPIDERS: Apply as a Crack & Crevice treatment into cracks and crevices in all hiding places (such as behind baseboards, sinks, cabinets, meter boxes, door frames and windows) or as a space treatment at a rate of 20 seconds per 1,000 cu. ft. For a space treatment, open cabinets and doors in area to be treated, turn off air conditioners and fans and close doors and windows before treating. Disperse toward area suspected of harboring the greatest insect infestations. Disperse in all locations contacting as many insects as possible. Keep area closed for 15 minutes. Open and ventilate the treated area before reoccupying.
For treatment of void areas such as attics, false ceilings and crawl spaces, calculate the volume of the void and treat at a rate of 20 seconds per 1,000 cu. ft.

This is a sample Label. Key information has been changed. **Information provided is for test taking purposes only.**

F.D. Formula 100 Contact Insecticide

BED BUGS: Take bed apart. Treat joints and channels if hollow, such as square or round tubing, and see that the interior framework is treated. Treat mattresses, especially tufts, folds and edges. Also treat other areas where bed bugs may be harboring. Do not use in patient rooms in hospitals and nursing homes for treatment of bed bugs.

CARPET BEETLES (IN RESIDENCES): Hold product 36" above floor and direct spray toward floor and lower walls treating at a rate of 10 seconds per 100 sq. ft. Also apply as a Crack & Crevice treatment to cracks and crevices near the source of the infestation.

CLOTHES MOTHS: Locate source of infestation. Apply as a Crack & Crevice treatment to nearby cracks and crevices and perform a space treatment of the infested area at a rate of 5 to 10 seconds per 1,000 cu. ft.

To protect woolens and other keratin containing materials, brush clean then air out. Before treating entire article, treat a small hidden area of fabric to determine if staining will occur. Treat thoroughly by holding dispenser at least 18" from garment. Treated articles should be put into a darkened closet or other darkened storage such as cedar chests, storage drawers or sealable plastic fabric bags. For best protections, clean and treat inside of closets or storage areas by treating 1 second per 10 sq. ft. before putting treated materials away. Treatment should be repeated every 6 months or as needed. Dry clean treated clothes before wearing.

CARPET BEETLES, CIGARETTE BEETLES, CONFUSED FLOUR BEETLES, DRUG STORE BEETLES, GRAIN MITES, GRANARY WEEVILS, RED FLOUR BEETLES, RICE WEEVILS AND SAWTOOTHED GRAIN BEETLES (FOR EXPOSED ADULT AND LARVAL STAGES): Apply as a Crack & Crevice treatment into cracks and crevices of pantries, cabinets, food processing and handling equipment and other places where insects harbor or as a space treatment at a rate of 20 seconds per 1,000 cu. ft. Also apply around cartons, containers and other areas where these insects tend to congregate. Contact as many insects as possible. Repeat treatment weekly or as insects appear. Infested stored products should be fumigated or treated by other effective methods using an approved product intended for this purpose.

ANGOUMOIS GRAIN MOTHS, CHOCOLATE MOTHS, INDIAN MEAL MOTHS, MEDITERRANEAN FLOUR MOTHS (FOR EXPOSED ADULT AND LARVAL STAGES): Apply as a space treatment at a rate of 5 to 10 seconds for each 1,000 cu. ft. Close all doors and windows. Direct into all parts of room, especially around stored product containers, pallets and darkened areas. Keep area closed for 15 minutes following treatment. Open and ventilate before reoccupying. Repeat treatment weekly if necessary. Infested stored products should be fumigated or treated by other effective methods using an approved product intended for this purpose.

FLEAS IN BUILDINGS: Hold product 36" above floor and direct spray toward floor and lower walls treating at a rate of 10 seconds per 100 sq. ft. Make sure that all floor, sofa and chair surfaces are contacted. Keep area closed for 15 minutes. Open and ventilate before reoccupying. Repeat treatment after 7 days if necessary.

TICKS: Holding container 36" above the floor, direct spray toward pet beds and resting quarters treating at a rate of 10 seconds per 100 sq. ft. Also apply as a Crack & Crevice treatment into adjacent cracks and crevices such as behind baseboards and edges of carpet and floor covers. Also treat higher cracks such as upper door jams and window framing, behind pictures and other areas where females may crawl to lay eggs.

IN HOSPITALS AND NURSING HOMES

Apply according to specific directions for pest(s) to be treated. Patients should be removed from room prior to treatment. Room should be ventilated for 2 hours after spraying. Do not return patients to room until after ventilation.

FOOD AREAS OF FOOD HANDLING ESTABLISHMENTS

Apply according to specific directions for pest(s) to be treated. When applying as a space treatment in food handling areas, the areas of the operation being treated should be shut down. In food processing areas, all utensils, shelving, etc., where food will be handled should be covered or removed before treatment or thoroughly washed with an effective cleaning compound followed by a potable water rinse prior to use.

OUTDOOR TREATMENTS

GROUND APPLICATION (FLIES, GNATS AND MOSQUITOES): Treat open areas near buildings and in campgrounds. Apply at a rate of 5 to 15 seconds per 1,000 sq. ft. Apply in wide swaths across area to be treated. Allow treatment to penetrate dense foliage. Best results are obtained when wind speed is 5 MPH or less.

FLIES, CLUSTER FLIES, CLOVER MITES, MUD DAUBERS AND WASPS: Apply mist directly on insects and their nests from approximately 18". Contacted insects will fly away from fog. Applications should be made in late evening when insects are at rest. Disperse into hiding and breeding places contacting as many insects as possible.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

STORAGE: Store in a cool area away from heat or open flame.

PESTICIDE DISPOSAL: Waste resulting from use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL: Do not puncture or incinerate! Empty container by using the product according to the label directions. Offer empty container for recycling, if available, or place in trash if allowed by state and local regulations. If container is partly full, contact your local solid waste agency or call 1-800-CLEANUP for disposal instructions.

Contains no CFCs or other ozone depleting substances. Federal regulations prohibit CFC propellants in aerosols.

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Appendix C. Hazardous Materials Report Form

NEW YORK STATE DEPARTMENT OF STATE
OFFICE OF FIRE PREVENTION AND CONTROL

HAZARDOUS MATERIALS REPORT FORM
(General Municipal Law, § 209-u)

The information entered herein is essential to your local fire chief for the protection of your employees, the fire-fighters and citizens in the immediate area, and to reduce damage to your property in the event of a fire or an emergency.

Every fire insurance policyholder, engaged in commerce in this state, is required by law to report the presence of hazardous materials at their business address.

Failure to file in accordance with the provisions of section 209-u of the General Municipal Law could result in a fine.

A separate report is required annually for each business address.

WHEN COMPLETED, THIS FORM MUST BE SENT TO YOUR LOCAL FIRE DEPARTMENT.

	Hazardous Materials Location*
Firm Name _____	Street Add. Only _____
Bus. Add. _____	Bldg. Name or No. _____
City, State, Zip _____	City, State, Zip _____
Tel. No. _____	Policy Anniv. Date _____
Name Emergency Contact _____	Bus. Tel. _____ Home Tel. _____

_____
(Signature and Title of Person Completing Form)

*It is suggested that a separate form be filled out for each building that contains hazardous materials.

EXEMPTIONS

Requests for exemptions from this law must be made in writing, attached to this form, and filed annually with your local fire department not later than the anniversary date of your policy.

All exemptions approved shall expire on the next policy anniversary date.

Exemptions denied shall require that the insured file a completed hazardous materials report form within 15 days of denial.

FOR FIRE DEPARTMENT USE ONLY

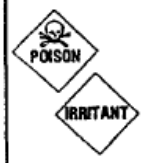
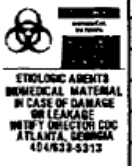
Exemptions: Approved _____ Denied _____ Additional Information Needed _____

_____ (Date)	_____ (Signature of Fire Chief)
_____ (Fire Department Name and Address)	_____ (Print Name of Fire Chief)

New York State Department of State, Office of Fire Prevention and Control
DOS-0347 (12/02)

V Hazardous Material Listing (attach additional sheets if necessary)

Note: Definitions of symbols are on the second page of the instruction sheet.

Identifying Symbol	Material Description & Proper Shipping Name	Total Amount	Identifying Symbol	Material Description & Proper Shipping Name	Total Amount
					
					
					
					
					
					
					

VI Special Considerations/Remarks: