

Revised March 2024 (Apply/Pay)

FIRE DEPARTMENT • CITY OF NEW YORK



STUDY MATERIAL FOR THE EXAMINATION FOR CERTIFICATE OF FITNESS
FOR

**Supervision of Auto Salvage Facilities
S-42**

All applicants are required to apply and pay for an exam online before arriving at the FDNY. It can take about 30 minutes to complete.

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:

<http://fires.fdnyccloud.org/CitizenAccess>

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

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

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EXAM SPECIFIC INFORMATION FOR S-42 CERTIFICATE OF FITNESS

Save time and submit application online!

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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 S-42 Certificate of Fitness:

- NYS Dismantler's License
- Proof of Insurance
- Proof of Certificate of Fitness holders (F-60, G-60, A-35, C-92)
- Proof of Consumer Affairs License

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.)***

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- 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

EXAM INFORMATION

The S-42 exam will consist of **35** multiple-choice questions, administered on a “touch screen” computer monitor. It is a time-limit exam. Based on the amount of the questions and reference material provided, you will have **54** minutes to complete the test. A passing score of at least 70% is required in order to secure a Certificate of Fitness.

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, this complete booklet will not be provided to you during the exam.

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



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RENEWAL REQUIREMENTS

General renewal requirements:

Review the General Notice of Exam:

<https://www1.nyc.gov/assets/fdny/downloads/pdf/business/general-notice-of-exam-cof.pdf>

Special renewal requirements. S-42 Certificate of Fitness: None

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

About the Study Material

These study materials will help you prepare for the written examination(s) for the Certificate of Fitness for Supervision of Auto Salvage facilities. The study materials include information taken from the New York City Fire Code (FC), Fire Department Rules and industry standards. The study material does not contain all the information you need to know in order to perform the responsibilities of supervising an auto salvage facility. 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 the FC Section 317 in order to adequately prepare for the exam. It is critical that you read and understand this booklet to help increase your chance of passing the exam.

Introduction

Auto salvage facilities (often called scrap yards or junk yards) are businesses used to collect material for recycling or harvesting. Salvage yards are considered “end stage” facilities for metal or other reusable components of discarded everyday items, including vehicles at the end of their usable life, and those that cannot be sold.

These facilities often contain many hazardous materials such as oils, fuel, acids, lead batteries, mercury, anti-freeze, freon from cooling systems, asbestos found in the brake pads and lining of older cars, motor oil, tires, and other heavy metals.

It is not unusual to come across poorly disposed materials within an auto salvage facility.

Salvage employees often work with metal, torches, chemicals and machines used to move heavy items such as cars. It is important for employees to know and follow safety rules and procedures to reduce the possibility job-related injuries. Safety procedures also helps to keep the salvage yard safe for the employees, the public, surrounding business and firefighters.

This COF gives you the ability to supervise and manage a Salvage Yard. It is mandatory that each salvage yard have all the appropriate COFs for each activity.

The chart below shows the COFs that may be present for activities that occur in a Salvage Yard. Keep in mind that if COF requires personal supervision, you cannot perform it at the same time as other activities. For example: the same person cannot be the torch operator (G-60) and the fire watch (F-60) on a singular hot work job.

Other COFs that may be in Auto salvage Facilities

COF	Description	Supervision
A-35	To Operate and Maintain Air Compressors	General
C-92	Supervising Storage, Handling, and Use of Flammable or Combustible Liquids	General/Personal
F-60	Fire Guard for Torch Operations	Personal
G-60	Use of Flammable Gases with Oxygen or Use Of LPG/CNG For Hot Work Operations (Citywide)	General
P-53	Supervision of De-fueling Motor Vehicle Fuel Tanks	Personal

Worst Case Scenario

1. Lithium-Ion battery



Fire on blazing East Flatbush junkyard block

September 17, 2021

They shred automobiles, they have a machine that pulverizes automobiles.” When you shred an automobile, it may contain gasoline, plastic, batteries,

everything there is flammable. So, the fluff, car seats, dashboards, get separated in a separate pile. Then what happens is spontaneous combustion, because of all the heat, it occurs.

The fire was caused by an electric scooter battery concealed in the scrap pile, inside a 50-yard open container outdoors

They’re very dangerous, if not disposed of properly, the batteries can be extremely dangerous, going so far as to compare them to a “hand grenade.”

Lesson Learned:

- Ensure that all vehicles are empty of gasoline and other flammable items
- Lithium-ion batteries must be removed and never be kept in scrap yard cars. They must be disposed of according to NYC Sanitation rules. See www.nyc.gov/batteries for more information.
- Always sort scrap piles to ensure that combustible and flammables items are not crushed with cars.

2. Improper storage of flammables



1 worker injured, 1 dead after explosion and fire in Bronx junkyard

September 4, 2019

One worker was killed, and another was in a medically induced coma after an explosion rocked a junkyard in the Bronx and sparked a massive fire. More than 100 firefighters fought to quell burning tires and car parts following reports of explosions on the site, according to the Fire Department.

The explosion happened at the junkyard on Boston Road in Eastchester.

Large plumes of smoke could be seen for miles.

Workers say they were knocked off their feet and one of their co-workers came running out on fire.

A worker who was initially reported as missing after the blaze was later found dead on Thursday.

Lesson Learned:

- Fire access roads and hydrants must always be kept clear and free of obstructions.
- Compressed gas containers, when not in use, and reserve containers, must be properly supported and stored in a location remote from all torch operations.
- The valves of compressed gas containers must be kept closed and protected from mechanical damage with the use of protective caps.
- Empty containers shall be treated as full.
- Operation of torch use must be in areas protected by a charged hose line, if no hose line can be supplied then, at least four portable fire extinguishers with a minimum 2-A rating each may be provided.
- Fire watch personnel is important to ensure continuous surveillance of a building or area to identify and control fire hazards The torch operator or a person designated as a fire watch must search the torch operation area immediately after operations to determine that no sparks or molten metal remain in the area. Additionally, a second such search shall be conducted 30 minutes thereafter.
- A logbook must be maintained at the premises

3. Use of wrong tools

Cutting tool sparks Alamo junkyard fire.

March 2021

The Alamo Fire Department responded to a fire off of Expressway 83 at Rey's Auto Parts and Sales.

The fire was sparked when an employee was cutting a door off of a car, according to Alamo Fire Chief Roy Contreras.



Contreras said they did have an extinguisher on hand, but because of the wind gusts, they were unable to contain it right away.

It took the firefighters approximately one hour to contain the fire that burned almost 350 cars.

Lessons Learned:

- Always:
 - use non-sparking tools
 - have a fire guard present when using tools to cut
 - have a working fire extinguisher within appropriate travel distance

Definitions

AUTOMOTIVE SALVAGE AND WRECKING FACILITY. Any premises used for the dismantling and/or wrecking of motor vehicles in connection with the sale of auto parts or scrap metal.

CERTIFICATE OF FITNESS. A written statement issued by the Fire Commissioner certifying that the person to whom it is issued has passed an examination as to his or her qualifications or is otherwise deemed qualified to perform one or more of the following duties, for which such certificate is required by this code or the rules: supervise a facility; conduct or supervise an operation; supervise the storage, handling and/or use of a material; or conduct or supervise emergency planning and preparedness activities.

CNG. Compressed Natural Gas.

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).

DISPENSING. The pouring or transferring by other means of any material from a container, tank or similar vessel, which would release dusts, fumes, mists, vapors or gases to the atmosphere, unless such release is prevented by a device, equipment or system designed for that purpose.

FIRE. A rapid, persistent chemical reaction that releases heat and light, especially the burning of a combustible substance in the presence of oxygen. For purposes of this code, a flame used in any lawful, properly operating device, equipment or system or other controlled setting shall not be considered a fire.

FLAMMABLE AND COMBUSTIBLE LIQUID STORAGE SYSTEM. A flammable or combustible liquid storage tank and all devices, equipment and systems associated with such tank, including the tank, piping, valves, fill connection, vent lines, pumps and any other auxiliary equipment, except liquid motor fuel storage and dispensing systems and flammable and combustible liquid storage systems at a bulk plant or terminal used for bulk transfer operations.

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).

FLAMMABLE LIQUID MOTOR FUEL. Gasoline or other flammable liquids used as fuel in the operation of motor vehicles, motorcycles, watercraft and aircraft.

FLAMMABLE MATERIAL. A material capable of being readily ignited from common sources of heat or at a temperature of 600°F (316°C) or less.

FLAMMABLE VAPORS OR FUMES. The concentration of flammable constituents in air that exceeds 25 percent of their lower flammable limit (LFL).

FLAMMABLE LIQUID MOTOR FUEL. Gasoline or other flammable liquids used as fuel in the operation of motor vehicles, motorcycles, watercraft and aircraft

FLASH POINT. 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. The flash point of a liquid shall be determined by appropriate test procedure and apparatus as specified in ASTM D 56, ASTM D 93 or ASTM D 3278.

FIRE EXTINGUISHING SYSTEM. An approved system of devices and equipment which detects a fire and discharges an approved fire extinguishing agent onto or in the area of a fire. This definition includes automatic systems and, where such systems are authorized by this code or the Building Code, manually activated systems.

FIRE GUARD. A person holding a Certificate of Fitness for such purposes, who is trained in and responsible for maintaining a fire watch and performing such fire safety duties as may be prescribed by the commissioner.

FIRE WATCH. A temporary measure intended to ensure continuous and systematic surveillance of a building or portion thereof by one or more qualified

individuals for the purposes of identifying and controlling fire hazards, detecting early signs of fire, raising an alarm of fire, and notifying the department.

GENERAL SUPERVISION. Except as otherwise provided in this code, supervision by the holder of any department certificate who is responsible for performing the duties set forth in FC section 113.2 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.

HIGH-PILED COMBUSTIBLE STORAGE. Storage of combustible materials in closely packed piles or combustible materials on pallets, in racks or on shelves where the top of storage is greater than 12 feet (3,658 mm) in height. High-piled combustible storage also includes certain high-hazard commodities, such as rubber tires, Group A plastics, flammable liquids, idle pallets and similar commodities, where the top of storage is greater than 6 feet (1,829 mm) in height.

HIGH-PILED STORAGE AREA. An area within a building, structure or premises that is designed or used for high-piled combustible storage.

HOT WORK. Cutting, welding, thermit welding, brazing, soldering, grinding, thermal spraying, thawing pipe, cadwelding, installation of torch-applied system, or any other similar operation or activity.

HOT WORK AREA. The area exposed to sparks, hot slag, radiant heat, or convective heat as a result of hot work.

HOT WORK EQUIPMENT. Electric or gas welding or cutting equipment used for hot work.

HOT WORK PROGRAM. A program, implemented by a responsible person designated by the owner of a building or structure in or on which hot work is being performed, to oversee and issue authorizations for such hot work for the purpose of preventing fire and fire spread.

HOT WORK PROGRAM AUTHORIZATIONS. Authorizations issued by the responsible person under a hot work program allowing welding or other hot work to be performed at the premises.

LIQUID MOTOR FUEL. Gasoline, diesel fuel or other flammable or combustible liquids used as fuel in the operation of motor vehicles, motorcycles, watercraft and aircraft.

LISTED. A material, device, equipment or system included on a list published by a nationally recognized testing laboratory or other approved organization. They perform product evaluations that maintain periodic inspection of production of such listed material, device, equipment or system, and whose listing indicates compliance with nationally recognized standards and designates suitable usage.

LOWER EXPLOSIVE LIMIT (LEL). See “Lower flammable limit.”

LOWER FLAMMABLE LIMIT (LFL). The minimum concentration of vapor in the air at which propagation of flame will occur in the presence of an ignition source. The LFL is sometimes referred to as LEL or lower explosive limit.

LPG. Liquefied Petroleum Gases.

MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA. The maximum amount of a hazardous material allowed to be stored or used within an indoor or an outdoor control area.

MOTOR VEHICLE. A vehicle or other means conveyance having more than 2 running wheels and using liquid motor fuel or flammable gas as fuel for generating motive power, except such vehicles as have a storage tank with a maximum capacity for less than 2 gallons (7.6 L) of liquid motor fuel or flammable gas that generates energy that is equivalent to the energy generated by 2 gallons (7.6 L) of gasoline.

NON-SPARKING PUNCHING TOOL. Tools specifically designed to puncture but eliminate the risk of sparks.

OPEN FIRES. The burning of materials wherein products of combustion are emitted directly into the ambient air without passing through a stack or chimney from an enclosed chamber. For the purpose of this definition, a chamber shall be regarded as enclosed when, during the time combustion occurs, only apertures, ducts, stacks, flues or chimneys necessary to provide combustion air and permit the escape of exhaust gas are open.

OPEN FLAME. A flame that is generated by any material or device in a sustained and controlled manner and that is not securely enclosed by noncombustible material, such as a candle that is unenclosed or enclosed in a globe or lantern, or a gas light lantern, for decorative and lighting purposes; flaming foods and beverages, and food warming. An open flame does not

include a flame generated in a sustained and controlled manner in the following devices, equipment and systems:

1. Any fireplace, furnace, grill, hot water heater, oven, stove or other similar stationary appliance and any outdoor stationary decorative gas appliance, which shall comply with the construction codes and applicable provisions of this code.
2. Lighted smoking paraphernalia, which shall comply with FC310.
3. Portable fueled devices, including any torch, which shall comply with FC313.

PERSONAL SUPERVISION. A method of supervision by the holder 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.

REPAIR GARAGE. A building, structure or portion thereof used for servicing or repairing motor vehicles or motorcycles.

RESPONSIBLE PERSON. A person trained in the fire safety hazards associated with hot work, and in the necessary and appropriate measures to minimize those hazards, who is designated by the owner of a premises to authorize the performance of hot work at the premises.

SAFETY DATA SHEET (SDS). A document prepared in accordance with the regulations of the United States Department of Labor, as set forth in 29 CFR Part 1910.1200 or a federally approved state OSHA plan which sets forth information concerning a hazardous material.

TANK, PROTECTED ABOVEGROUND. an atmospheric aboveground tank listed in accordance with UL 2085 or equivalent standard that is provided with integral secondary containment, protection from physical damage, and an insulation system intended to reduce the heat transferred to the primary tank when the tank is exposed to a high intensity liquid pool fire.

TRAVEL DISTANCE. The actual walking distance from any point to the nearest fire extinguisher fulfilling hazard requirements.

Class of Flammable and Combustible Liquids Reference Chart

As per the Fire Code, there are 3 classes of flammable liquids and 3 classes of combustible liquids defined as the following table.

		Flash point	Boiling point	Examples
Flammable liquids (Class I liquids)	Class IA	< 73°F	< 100°F	Gasoline , Acetaldehyde, Ethyl ether, formate, Pentane
	Class IB	< 73°F	≥ 100°F	Acetone, Ethanol, Methyl alcohol, Propyl alcohol
	Class IC	≥ 73°F but < 100°F	Not Applicable	Turpentine, Butyl alcohol, Hydrazine, Styrene, Xylene
Combustible liquids (Class II & III liquids)	Class II	≥ 100°F but < 140°F	Not Applicable	Kerosene, Diesel , WD-40 lubricant
	Class IIIA	≥ 140°F but < 200°F	Not Applicable	Butyric Acid, Creostoe Oil
	Class IIIB	≥ 200°F	Not Applicable	Formalin, Glycerine, Picric acid, Propylene glycol

PERSONAL SUPERVISION. Except as otherwise provided in this 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.

SAFETY DATA SHEET (SDS). A document prepared in accordance with the regulations of the United States Department of Labor, as set forth in 29 CFR Part 1910.1200 or a federally approved state OSHA plan which sets forth information concerning a hazardous material.

1. FDNY Permit Requirements

FDNY permits are required to manufacture, store, handle, use, sell of transport hazardous or combustible materials as well as to conduct any operation or to maintain a facility that requires a permit.

When permits are required, an FDNY inspection will be conducted to determine if the facility complies with all NYC Fire Codes and Rules. All applicable permit fees must be paid prior to any permit being issued. Once a permit is issued, it must be kept on the premises in a designated area and readily available for inspection by any representative of FDNY.

There are two types of permits issued by the FDNY: Site specific and City wide.

Auto salvage facilities require a **Site-specific permit**. This type of permit legally authorizes the permit holder to manufacture, store, handle, use or sell hazardous materials or combustible materials, or conduct an operation or maintain a facility at a specific premises or location.

Permits are valid for 1 year and are renewable upon inspection of premises.

2. Facility and Design Requirements

The following requirements are needed for an FDNY permit. If there are any issues with following facility or design requirements you must contact BFP Technology Management for possible variance.

Facility requirements

- Facility must be authorized by the certificate of occupancy for use as an automotive salvage and wrecking facility.
- Facilities must be licensed and maintained according to the requirements of New York State Department of Motor Vehicles and the New York City Department of Consumer and Worker Protection.

Design requirements

Automotive salvage and wrecking facilities must be designed as follows:

- Facility enclosure.
The facility must be enclosed on all sides by a solid, opaque fence or wall at least 8 feet (2438 mm) in height in accordance with the Building Code and the Zoning Resolution.
- Fire apparatus roads.
The facility must be accessible from fire apparatus roads with a minimum unobstructed width of 20 feet (6096 mm).

An outdoor area of the facility must be accessible by fire apparatus roads on all four sides with a distance between such roads of not greater than 50 feet (15 240 mm) by 100 feet (30 480 mm).

- Defueling area.

The defueling of motor vehicle fuel tanks must be done in an approved location that is protected throughout by a fire extinguishing system.

3. Equipment, Storage and Operation

Equipment

Non-sparking hand tools are made of metals such as brass, bronze, Monel metal (copper-nickel alloy), copper-aluminum alloys (aluminum bronze), or copper-beryllium alloys (beryllium bronze) such as hammers, flange wedges, striking wrenches are safe for punching tanks with hazardous, flammable or combustible vapors.



Not using the correct tools can be dangerous and may result in sparks and fires.

De-Fueling Equipment (Fuel Caddy, as seen below) is a portable tank with a pump and hose attached. Its primary purpose is to safely transfer fuel from the fuel tank; safely store the fuel during the repair process; and safely transfer the fuel back into the fuel tank after the repair is made. If fuel is not returned to the repaired vehicle, it must be disposed of in an appropriate manner.

This reclaimed fuel may not be sold to anyone.



Defueling equipment must be **listed** for defueling purposes and its capacity cannot exceed **65gal.**

Fuel Caddy's should be labeled for type of fuel it is used for and fuel should never be mixed.



Never use droplights with incandescent bulbs while de-fueling a motor vehicle because of a spark risk which can result in fire.

Lights with florescent, L.E.D., or fiber optic bulbs are recommended.

Cranes. Automotive salvage and wrecking facilities are provided with cranes so that vehicles can be easily moved and stacked.

Storage

A C-92 Certificate of Fitness is required for the general supervision of all Storage, Handling, and Use of Flammable or Combustible Liquids.

Storage areas must be protected against tampering or trespassers using approved control measures.

There should not be any storage in salvaged vehicles.

All vehicles must be fully emptied including airbags (unless made inert), fuel, and items sorted before crushing. The items below have special disposal requirements that must be followed:

Fuel

The fuel recovered by the defueler can be stored in the defueler until removed from the premises. This fuel cannot be used for **RESALE**.

The Certificate of Fitness holder also may pump volatile flammable liquid into, an approved storage tank complying with the requirements of Chapter 57 of the NYC Fire Code.

Air Cushion restraint system (Airbags)

There is no storage of airbags, all must be removed daily and stored throughout the day in a spark free, dedicated metal container. If the airbag is on the recall list, then you must call the manufacturer. All other airbags must be disposed of according to DOT regulations.

CNG

No storage or unloading within NYC of CNG allowed, whole tank must be disposed. You must call a licensed contractor for disposal.

Lithium-ion batteries

Do not throw old batteries in the trash. **It is ILLEGAL and dangerous.** There are special procedures for the disposal of lithium-ion batteries.

Visit www.nyc.gov/batteries for locations and information

Salvage yard Operation and Supervision

Torch Operation

Torch operations must be conducted by a G-60 Certificate of Fitness holder with an F-60 fire watch Certificate of Fitness holder present. Torch work can only be done with only certified individuals.

The torch operator or a person designated as a fire watch shall search the torch operation area immediately after operations to determine that no sparks or molten metal remain in the area. Additionally, another search shall be conducted ½ hour thereafter. A record of such searches shall be maintained in a logbook at the premises and made available for inspection by any representative of the department.

Torch operations:

- must always be conducted at least 35 feet from all combustible waste, materials, and motor vehicles unless area is protected by noncombustible shields or covers. This protection must prevent sparks and molten metal from flying around.
- cannot be conducted in any location where there are any hazardous gases or vapors. Fuel tanks of motor vehicles shall be emptied of fuel and purged of all flammable vapors before any torch operations are commenced.
- areas must be protected by a 1 inch (in diameter) charged hose line, connected to an approved source of water. At least four portable fire extinguishers with a minimum 2-A rating each may be provided instead of charged hose line.
- torch & cylinder valves must be completely closed/ shut and lines must be purged after the last job or if not in use for a period of more than one (1) hour.

Compressed gas containers **when in use:**

- must be properly supported
- placed a safe distance from torch operations.

Compressed gas containers, **when not in use:**

- reserve containers, must be properly supported
- stored in a location remote from torch operations.
 - The valves of these containers must remain closed and protected from mechanical damage by the placement of protective caps.

Hot work tips:

- Always check for cylinder leaks with a soapy water solution.
- Torch operation requires 4 extinguishers with a minimum of 2A rating, or a charged one (1) inch hose line.
- Always use a flint striker to ignite a torch tip
- All flammable gas and oxygen cylinders must be stored at least 25 feet apart unless properly affixed to an approved cart.
- Fire watch must check 30 minutes after torch use to ensure that there is nothing burning.
- Acetylene, propane, natural gas and butane are all commonly used gases for torch work. Never use methane gas for torch use.

Empty containers must always be treated the same as full containers.

Air Compressor

All operations of air compressor must be done by a person holding an A-35 Certificate of Fitness. The information below is general maintenance recommendations for air compressors. Please refer to A-35 Certificate of Fitness Study material and manufacturer's instructions.

The entire system must be visually inspected before the air compressor is started. This visual inspection should make sure that the following components are installed correctly and in good working order. You should always refer to the manufacturer's manual to determine the safe operating temperatures and instructions.

You should remain in the area for a few minutes after the air compressor has been started. This is to make sure that the compression unit is operating safely including at operating at a safe speed. Do not run the compressor at speeds above its recommended operating range. The operating range is indicated in the manufacturer's manual. Always remember that compressed air can be dangerous. Keep in mind that any dust or debris that is blown off your clothing by an air compressor can drive it under your skin resulting in death.

Component	Replace/Test	
Cooling System	Tested every 6 months	The water supply control valves should always be open when the air compressor is in operation.
Air Intake Filter	replaced every 6 months or when damaged	The air intake filter should be inspected and cleaned weekly.
Lubrication Oil	replaced every 6 months	The level of the lubricating oil (lube oil) should be checked weekly using the dipstick. The lube oil is designed to lubricate the moving parts on the air compressor. The oil used must be of the grade specified by the compressor manufacturer.
Automatic Low-level Oil Indicator Switch	tested every 3 months	This is tested by manually draining the oil from the air compressor when it is running. The indicator switch will shut down the air compressor within a few minutes if it is working correctly. When testing the compressor in this way, do not run the air compressor for a long period of time. If the switch is defective, it should be repaired or replaced. The air compressor should be refilled with oil before it is used again.
The Air Receiver	tested at a minimum of every 5 years by a qualified technician.	Water builds up in the moisture separator assembly and the air receiver must be drained daily; however, there is one exception. Do not drain moisture from the air compressor when the ambient temperature drops below 40 degrees Fahrenheit. This is done by opening the drain valve and draining off the excess water. All safety valves should be manually operated every week. This is to ensure that they will function correctly in case of an emergency.

<p>Hose Connections</p>	<p>checked regularly</p>	<p>make sure that they are tight. Never twist, bend or curl an air hose to stop the air hose. You should not patch a leaking hose with duct tape. You can replace the hose, or you can repair the leak by cutting out the bad section and joining the hose back together with a connector and clamps.</p>
<p>Belts</p>	<p>Replaced if frayed or visibly damaged</p>	<p>make sure that the air compressor is running at the correct speed. First turn off the compressor and disconnect the power supply. If the belts are covered by a protective guard, remove the guard. If the belts are. To test the belt tension, firmly press down on the belt. If the belt moves more than one the inch, the flywheel may need to be adjusted. Make the adjustments as needed. If the adjustment does not work replace the belts with the belts as specified by the manufacturer.</p>
<p>Electrical Connections</p>		<p>All electrical connections, fuses, and cables must be visually inspected by the Certificate of Fitness holder. A qualified electrician must be notified if there is evidence of any defective parts. The electrician must pay close attention to the motor starter. The motor starter protects the compressor against thermal overload. Thermal overload is caused by excessive electrical currents</p>
<p>Pressure Switch</p>		<p>Check to make sure the pressure switch is working correctly. The pressure switch is a pressure regulating device.</p>

		<p>It shuts down the air compressor when pressure in the air receiver reaches a certain preset level. Then it restarts the compressor when the pressure falls below a certain level. The shut down and restart levels depend on the size of the compressor and the demand for compressed air. The pressure switch prevents the air pressure inside the tank from reaching dangerous levels. Dangerously high-pressure levels may cause the tank to rupture or explode.</p> <p>The steps to test the pressure switch are as follows:</p> <ol style="list-style-type: none"> 1. Start the air compressor. Allow the pressure in the air receiver to build up to normal operating levels. Pay close attention to the pressure gauge. 2. When the gauge indicates that the pressure is above normal operating levels the pressure switch should shut down the compressor automatically. If the compressor does not shut down automatically the pressure switch may be adjusted. If the adjustment does not correct the problem, the switch is defective. A defective pressure switch must be replaced before the compressor may be restarted.
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Some air compressors are designed to operate continuously. They have a different pressure switch device. This device does not shut down the entire air compressor. Rather it allows the compressor to run but prevents the compressor from

<p>compressing air. The testing procedures should check that air is no longer compressed when the preset level is reached. The air compressor must have a warning label indicating the level of pressure which is considered dangerous. This should be clear in the air compressor manual as well.</p>	
<p>Pressure Relief Valve</p>	<p>test the pressure relief valve to ensure it is working safely and efficiently. The pressure relief valve acts as a backup safety device to the pressure switch. It is designed to automatically open when the pressure in the receiver reaches dangerous levels. The pressure relief valve is tested by running the air compressor with the pressure switch fully open. When the pressure switch is fully open it <u>cannot</u> shut down the compressor.</p>
	<p><u>The valves should be set no less than 15 psi or 10 percent (whichever is greater) above the operating pressure of the compressor but never higher than the maximum allowable working pressure of the air receiver.</u> If the pressure relief valve does not open it may be defective. The valve may also be defective if it opens before the receiver reaches normal operating pressure. Defective relief valves must be replaced before the compressor is restarted. The Certificate of Fitness holder must also check to make sure that the pressure relief valve is of the correct size. The pressure relief valves must meet the manufacturer's specifications. These specifications are outlined in the air compressor maintenance manual.</p>

Operating Temperature		<p>The air compressor must be tested to make sure that it is running within normal operating temperature ranges. Guidelines for acceptable operating temperatures are specified in the maintenance manual. This test reduces the likelihood of the air compressor overheating. Overheating may cause irreparable damage to the compressor. An overheating air compressor is a potential fire hazard. If an overheating problem is discovered the water-cooling mechanisms must be checked. The cooling mechanism is tested to make sure that an adequate water supply is reaching the air compressor. Any blockages, leaks or other defects must be repaired, or defective parts replaced.</p>
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Defueling

Defueling must always be conducted by a person holding a P-53 Certificate of Fitness in an approved location that is protected throughout by a fire extinguishing system.

There are different procedures used to defuel motor vehicles depending on the location as well as the type of equipment available. Salvage yards usually use a non-parking punch tool to punch a hole in the tank for fuel to drain.

As soon as possible after receiving vehicle all waste oil and liquids including crankcase oil and other flammable or combustible liquids must be removed from motor vehicles and stored outdoors, in tanks complying with the requirements of NYC Fire Code Chapter 57, or, when approved, portable containers.

All of the fuel recovered by the defueler must be transferred to a storage tank that comply with NYC Fire Code requirements.

Defueling equipment cannot be used to fuel motor vehicles.

Defueling should always be conducted in a well-ventilated area to avoid the possible accumulation of flammable vapors.

Defueling areas and suppression system that covers defueling area must be approved by Department of Buildings and the FDNY Technology Management Unit. If you have any questions on defueling area requirements, contact 311.

4. Housekeeping

Vegetation.

The storage location must be kept free from vegetation and other combustible waste. Rubbish and other combustible waste shall not be allowed to accumulate within 15 feet of a flammable or combustible liquid storage location. Brush, grass, vines, weeds and other vegetation capable of being ignited that is located within 15 feet of a flammable or combustible liquid storage location must be regularly mowed or pruned and the clippings removed from the premises.

Access Roads.

Fire apparatus access roads must always be kept clear and unobstructed to provide access for fire department vehicles.

Safety Plan and Personal Protection

Safety Plan

It is recommended that salvage yards have a safety plan in place and provide training to employees on how to handle hazardous materials and

emergency situations. This plan should include the location of on-site eye wash stations, fire extinguishers and first aid kits.

The safety plan must also include emergency operation procedures which includes the availability of a crane operator in a reasonable amount of time in the event the crane is needed to move stacked cars during an emergency.

Salvage yard safety plan should be periodically reassessed for any changes in conditions, including new equipment that could cause occupational hazards.

In Case of a Spill

The Certificate of Fitness holder should pour an absorbent material on a fuel spill. An absorbent material is commonly used to contain and soak up fuel spills. The area should then be cleaned. If a large spill (more than 5 gallons) or leak occurs it must be reported to the New York State (NYS) Spill Hotline (1-800-457-7362) **within 2 hours of discovery**, except spills which meet **ALL of the following criteria**:

1. The quantity is known to be less than 5 gallons; and
2. The spill is contained and under the control of the spiller; and
3. The spill has not and will not reach the State's water or any land; and
4. The spill is cleaned up within 2 hours of discovery.

A spill is considered to have not impacted land if it occurs on a paved surface such as asphalt or concrete. **A spill in a dirt or gravel parking lot is considered to have impacted land and is reportable.**

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>)

Personal Protection Equipment (PPE)

Common personal protective equipment for a salvage yard includes steel toe shoes with slip resistant soles, a hard hat, heavy duty gloves and goggles or shatter resistant glasses. Depending on your task, you may also need a face mask or flame retardant gloves or even an apron.

For specific requirements for PPE, refer to OSHA standards 29 CFR.

Employees should be trained on:

- When PPE is necessary;
- What PPE is necessary;
- How to properly put on and take off, adjust, and wear PPE;
- The limitations of the PPE; and,
- The proper care, maintenance and disposal of PPE.

Emergency Eyewash and shower

An emergency eye wash and shower should be available in the auto salvage facility. The emergency eye wash and shower provide on-the-spot decontamination. They allow workers to flush away hazardous substances that can cause injury. Emergency showers can also be used effectively in extinguishing clothing fires or for flushing contaminants off clothing.

When used properly, safety showers and eyewashes improve the medical prognosis and reduce the risk of long-term tissue damage. If delayed or cut short, however, first aid treatment (shower/eyewash) may be less effective, and the full extent of the injury can become problematic.

Emergency showers. Emergency showers are designed to provide a large amount of water at once; enough to encompass the entire body.

Emergency eyewash stations. Emergency eyewash stations are designed to for a controlled flow of water to flush both eyes simultaneously. Eyewash stations are designed to provide an uninterrupted, 15-minute supply of water.

Facewash stations. Similar to the eyewash station, an eye/facewash station, is designed to irrigate both the eyes and face simultaneously.

Some important factors of the Emergency Eyewash and shower are:

- Initiation: all emergency shower stations should be able to be operated by one hand and one action. Once water flow has been started it should continue, leaving both hands free.
- Location: Location should be clearly marked, well lighted, and easily accessible, i.e., no obstacles, doorways, or turns.
- Training: Routine drills are advised. At a minimum, employees should know the location and proper use of eyewashes and showers.

Exposure

$$\text{Risk} = \text{Toxicity} \times \text{Exposure}$$

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 chemicals over an extended period of time. Chemicals 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 chemicals 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 chemicals. As long as the chemicals 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 chemical. It may also result from exposure to residue on equipment, protective clothing or treated surfaces after chemical application. It is also easy to transfer chemical residues from one part of the body to another. When this occurs, the applicator increases the potential for chemical poisoning. The hazard from skin absorption increases when workers are mixing chemicals because they are handling concentrated chemicals 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 chemicals or repairing contaminated equipment.
- If your clothes become contaminated, change **IMMEDIATELY**. Wash all affected areas of the skin.
- **ALWAYS** change clothes as part of the clean-up after chemical use.
- **ALWAYS** wash and shower after using chemicals.
- **ALWAYS** wear clean clothes at the start of each day during chemical application.
- **ALWAYS** wear eye protection when you measure or mix chemicals.
- **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:



Chemicals can be ingested by accident, through carelessness, or intentionally. The most frequent cases of accidental oral exposure are when chemicals have been taken from their original labeled container and put into an unlabeled bottle or a food container. Workers handling chemicals or application equipment can also consume excessive levels of chemicals 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 chemicals in their original labeled containers.
- **NEVER** use your mouth to clear a hose or nozzle, or to siphon a chemical.
- **ALWAYS** wash hands after handling chemicals, before eating, drinking, smoking, or using the toilet.
- **NEVER** leave chemicals open or unattended.
- **ALWAYS** avoid splashes or dusts when mixing chemicals.
- **ALWAYS** label the measuring containers used for chemicals.
- **NEVER** put chemicals 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 chemicals by inhalation of powders, airborne droplets or vapors. Many chemicals give off a vapor when exposed to air. 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 an embalming room. Proper ventilation can greatly reduce vapor levels.

To protect yourself from respiratory exposure:

- **ALWAYS** wear an appropriate and properly fitting respirator:
 - o If it is required on the label;
 - o If chemicals are used or mixed in poorly ventilated areas;
 - o If there is a possibility of inhaling spray droplets, vapor, or powder.
- **ALWAYS** ensure that ventilation is activated in embalming rooms.

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.

Safety data sheet (SDS)

Safety data sheets must be maintained on the premises and readily available.

The safety data sheet (SDS) 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 SDS may list appropriate and inappropriate extinguishing agents. The Certificate of Fitness holder must refer to the SDS when questions arise about how to handle, use, or store hazardous chemicals or materials.

An example of a Safety Data Sheet can be found in the Appendix of this study material.

Common Hazards Auto Salvage

Salvage yards can be an unsafe environment for your workers if you fail to take the proper precautions. There are countless risks you will need to account for, including the following:

Excessive fires.

When a salvage yard has more than two (2) fires in a 1-year (12 months) period, it proves that the owner of the salvage yard has not maintained safety requirements. Excessive fire puts the salvage yard and owner at risk of violations as well as cancellation of any FDNY permits and other approvals.

Chemical hazards.

A variety of harmful chemical and cleaning products can be found in salvage yards. To protect workers, it's important to require personal protective equipment (PPE) including gloves and steel cap boots. These chemicals can also cause an explosion.

5. Signage

Hazard identification signs

The **NFPA 704 signage** must be posted.

NFPA 704 Hazard Diamond Sign

There is a requirement for consistent signage with *storage, handling and use* of hazardous materials 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.

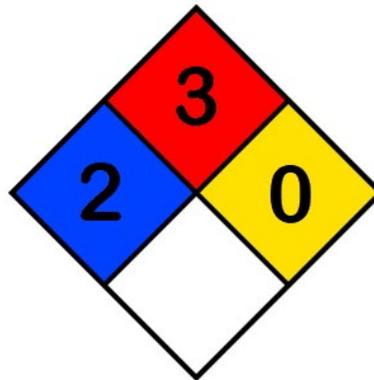
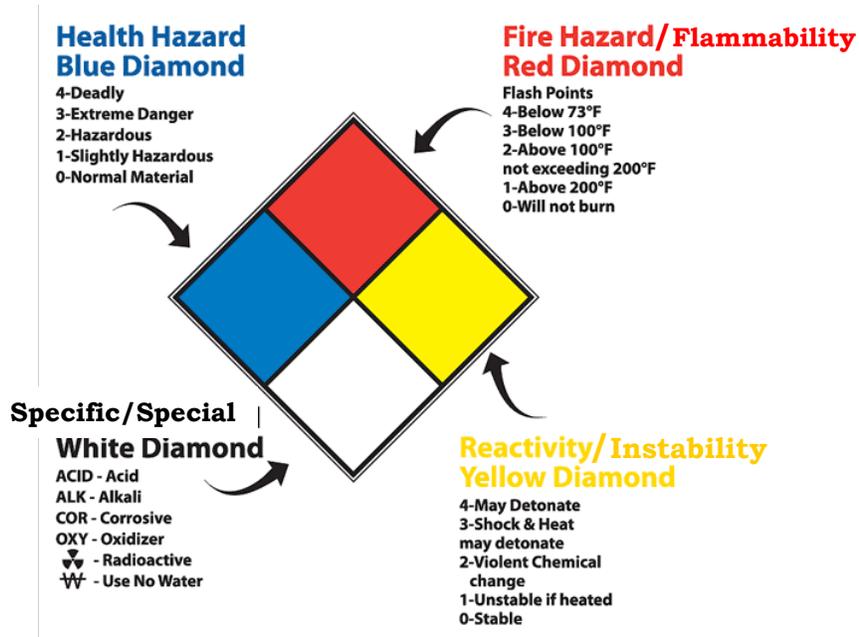
The diamond-shaped sign is required by the FC to be conspicuously displayed at the entrance to locations where hazardous materials are stored, handled and used, and on stationary containers and aboveground tanks that contain hazardous materials **in quantities requiring a permit**.

Note: The signage requirement also applies to locations where hazardous materials are dispensed.

The numbering system that is used to for 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 lowest hazard 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 easily. 1,2, and 3s represent increasing levels of hazard in all categories, such as the "2" that is present in the "health" quadrant of the example. This

indicates that the material is a moderate hazard and not necessarily deadly upon exposure.

NFPA 704 HAZARD DIAMOND SIGN EXPLANATION



Sign with Hazards Indicated

(Ethanol, Gasoline)

Warning Signs



Warning signs must be made of durable material. Signs warning of the hazard of flammable liquids must have red, black or white lettering on a contrasting background and must read: DANGER—FLAMMABLE LIQUIDS.

It is unlawful to smoke in an auto salvage yard. “No-Smoking” signs must be posted conspicuously at approved locations throughout the facility including where hazardous materials are stored, handled or used



6. Lithium-Ion Safety

If you own a lithium-ion powered device or plan to buy one, the FDNY has important safety tips. These tips apply to all devices powered by lithium-ion batteries, including phones, tablets, laptops, e-cigarettes, toys, high-tech luggage, and even robotic vacuum cleaners.

Immediately stop using or charging battery and call 911 if you notice:

- **Fire or Smoke**
- **Overheating**
- **Change in color or shape**
- **Odd noises**
- **Leaking**
- **Strange smell**

ALWAYS:

- purchase and use devices certified by a Nationally Recognized Testing

Laboratory (NRTL). 

- follow the manufacturer’s instructions for:
 - charging and storage.
 - correct battery, cord, and power adapter
 - **keep exit path clear at all times.**
 - plug directly into a wall electrical outlet for charging.
 - keep batteries and devices at room temperature.
 - store and/or charge batteries away from anything flammable.
 - keep away from heat sources.
- bring batteries to a **NYC Battery Recycling Center**. Visit nyc.gov/batteries for more information.

NEVER

- use aftermarket batteries or chargers.
- use damaged or altered batteries
- plug into a power strip or overload an outlet.
- overcharge or leave battery charging overnight (while unattended).
- charge a battery or device under your pillow, on your bed, or near a couch.
- leave e-bikes or e-scooters unattended while charging.
- block your primary way in or out of a room/space with e-bikes, e-scooters, wheelchairs, etc.
- place batteries in Trash or Recycling bin. **It is ILLEGAL**. Visit nyc.gov/batteries for disposal locations and information.

**In the event of a Fire,
Leave and CLOSE the door.**



Call 911 once you are in a safe location.

Charging Lithium Ion

Lithium-ion batteries do not have to be fully charged; partial charge is the most suitable.

When **charging more than five (5)** personal mobility devices or their removable batteries, it must be in a **dedicated room with ventilation** and a self-closing door.

For a total battery capacity of 20 kilowatt-hours (kWh), a 2-foot separation between charging batteries is required. For a total battery capacity up to 50 kWh, a 3-foot separation is needed.

Chargers must only be used with a compatible battery pack. The original equipment manufacturer (OEM) charger interplays with the battery pack using the battery management system (BMS). The wrong battery/charger combination may not work safely. For example, the 100% cutoff to prevent overcharging, which damages batteries, may not work which can easily create hazardous conditions such as fires, explosions and/or injuries.

Always check with the manufacturer or retailer of the personal mobility device, an authorized repair shop or a testing laboratory such as UL to see if replacement is recommended or listed and safe for use with that device. Using unauthorized parts, including batteries and/or chargers, may cause damage and possibly void your warranty.

Extinguishing Lithium-ion

Water may not prevent a battery from burning and spreading. Battery cells are known to explode and quickly spread to another battery. It can spread to another devices.



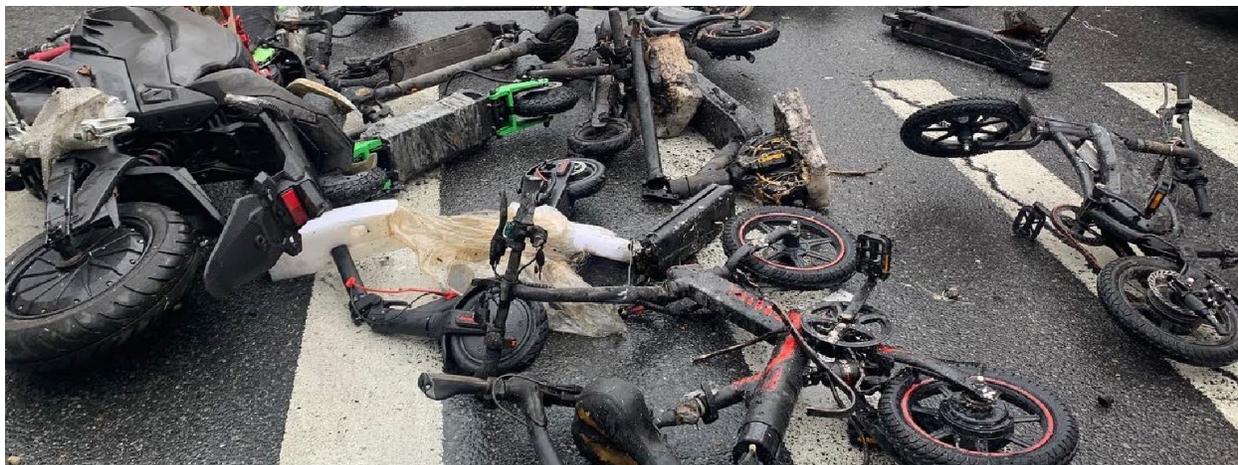
Fire Extinguishers
do not work
on
lithium-ion batteries fires.

Unexpected Re-ignition.

Reignition is common. Lithium-Ion Batteries are known to unexpectedly re-ignite (without warning) minutes, hours and even days after all visible fire has been put out.

Lithium-ion batteries can enter an uncontrollable, self-heating state. This can result in the release of gas, cause fire and possible explosion.

These batteries may continue to generate heat even when there is no visible sign of fire. Once heat reaches a certain level fire may reignite on the battery and surrounding area.



7. Fire Extinguishers

In areas where flammable or combustible liquids are stored, handled and used, including dispensing, in quantities requiring a permit, the portable fire extinguishers (PFE) must be provided in accordance with the table below

Type of Hazard	Basic Minimum Extinguisher Rating	Maximum Travel Distance ^d to Extinguishers (feet)
Light (Low) ^a	5-B	30
	10-B	50
Ordinary (Moderate) ^b	10-B	30
	20-B	50
*Extra (High) ^c	40-B	30
	80-B	50

- a. Light(low) hazard occupancies consist of fire hazards having normally expected quantities of Class A combustible furnishings, and/or the total quantity of Class B flammable typically expected to be present is less than 1 gal in any room or area.
- b. Ordinary(moderate) hazard occupancies consist of fire hazards having normally expected quantities of Class A combustible furnishings, and/or the total quantity of Class B flammable typically expected to be present is between 1 gal to 5 gal in any room or area.
- c. Extra(high) hazard occupancies consist of fire hazards having normally expected quantities of Class A combustible furnishings, and/or the total quantity of Class B flammable typically expected to be present is more than 5 gal in any room or area.
- d. The travel distance is intended to be the actual walking distance along a normal path of travel to the extinguisher.

Location

Fire extinguishers must be located in conspicuous locations where they will be readily accessible and immediately available for use. These locations must be along normal paths of travel. Fire extinguishers having a gross weight 40 pounds or less must be installed so that the top of the extinguisher is not more than 5 ft above the floor. Hand-held fire extinguishers having a gross weight exceeding 40 pounds must be installed so that their tops are not more than 3.5 feet above the floor. The clearance between the floor and the bottom of installed hand-held extinguishers must not be less than 4 inches. In other words, **no fire extinguisher is allowed to be on the floor.**



Acceptable

- For a fire extinguisher having 40 pounds or less, its top must not be more than 5 ft above the floor.
- The fire extinguishers must be easily accessible.



Unacceptable

- Fire extinguisher must be unobstructed.
- The bottom of the fire extinguisher must be at least 4 in above the floor.
- The fire extinguisher must be properly

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.

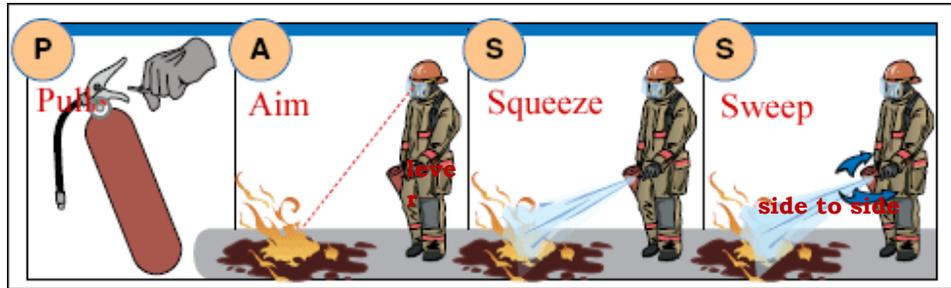
Typical Symbols Painted on Fire Extinguishers

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.

	Suitable for Class B and Class C fires but not Class A
	Suitable for Class A fires but not Class B or Class C
	Suitable for Class A and Class B fires but not Class C

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.

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.



In case of any fire, call 911.

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.

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. The FDNY only recognizes the FDNY standard PFE tags and will issue violations to business that have PFE installed without a proper tag.

FDNY may change the color of the fire extinguishers 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 counterfeit, contact FDNY immediately by e-mail: Tags.Decal@fdny.nyc.gov



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

8. LITHIUM-ION BATTERY SAFETY

Lithium-ion safety

Lithium-ion batteries are rechargeable batteries found in electric bikes, scooters, cars, laptops, tablets, phones, and many other common household devices.

Lithium-ion battery fires have caused deaths, serious injuries, and devastating damage to property around the city. It's important to follow rules for safe storage, charging, and disposal for these types of batteries.

If you own a lithium-ion powered device or plan to buy one, the FDNY has important safety tips that you should follow. These tips apply to all devices powered by lithium-ion batteries, including phones, tablets, laptops, e-cigarettes, toys, high-tech luggage, and even robotic vacuum cleaners.

Immediately stop using or charging battery and call 911 if you notice:

- Fire or Smoke
- Overheating
- Change in color or shape
- Odd noises
- Leaking
- Strange smell

ALWAYS:

- purchase and use devices certified by a Nationally Recognized Testing Laboratory (NRTL). 
- follow the manufacturer's instructions for:
 - charging and storage.
 - correct battery, cord, and power adapter
- **keep exit path clear at all times.**
- plug directly into a wall electrical outlet for charging.
- keep batteries and devices at room temperature.
- store and/or charge batteries away from anything flammable.
- keep away from heat sources.
- bring batteries to a **NYC Battery Recycling Center**. Visit nyc.gov/batteries for more information.

NEVER:

- use aftermarket batteries or chargers.
- use damaged or altered batteries
- plug into a power strip or overload an outlet.
- overcharge or leave battery charging overnight.
- charge a battery or device under your pillow, on your bed, or near a couch.
- leave e-bikes or e-scooters unattended while charging.
- block your primary way in or out of a room/space with e-bikes, e-scooters, wheelchairs, etc.
- place batteries in Trash or Recycling bin. **It is ILLEGAL.** Visit nyc.gov/batteries for disposal locations and information.

**In the event of a Fire,
Leave and CLOSE the door.**



Call 911 once you are in a safe location.

Charging Lithium Ion

Lithium-ion batteries do not have to be fully charged; partial charge is the most suitable.

When **charging more than five (5)** personal mobility devices or their removable batteries, it must be in a **dedicated room with ventilation** and a self-closing door.

For a total battery capacity of 20 kilowatt-hours (kWh), a 2-foot separation between charging batteries is required. For a total battery capacity up to 50 kWh, a 3-foot separation is needed.

Chargers must only be used with a compatible battery pack. The original equipment manufacturer (OEM) charger interplays with the battery pack using the battery management system (BMS). The wrong battery/charger combination may not work safely. For example, the 100% cutoff to prevent overcharging, which damages batteries, may not work which can easily create hazardous conditions such as fires, explosions and/or injuries.

Always check with the manufacturer or retailer of the personal mobility device, an authorized repair shop or a testing laboratory such as Underwrites Laboratories (UL) to see if replacement is recommended or listed and safe for use with that device. Using unauthorized parts, including batteries and/or chargers, may cause damage, fire and possibly void your warranty.

Extinguishing Lithium-ion

Water may not prevent a battery from burning and spreading. Battery cells are known to explode and quickly spread to another battery. It can spread to another devices.



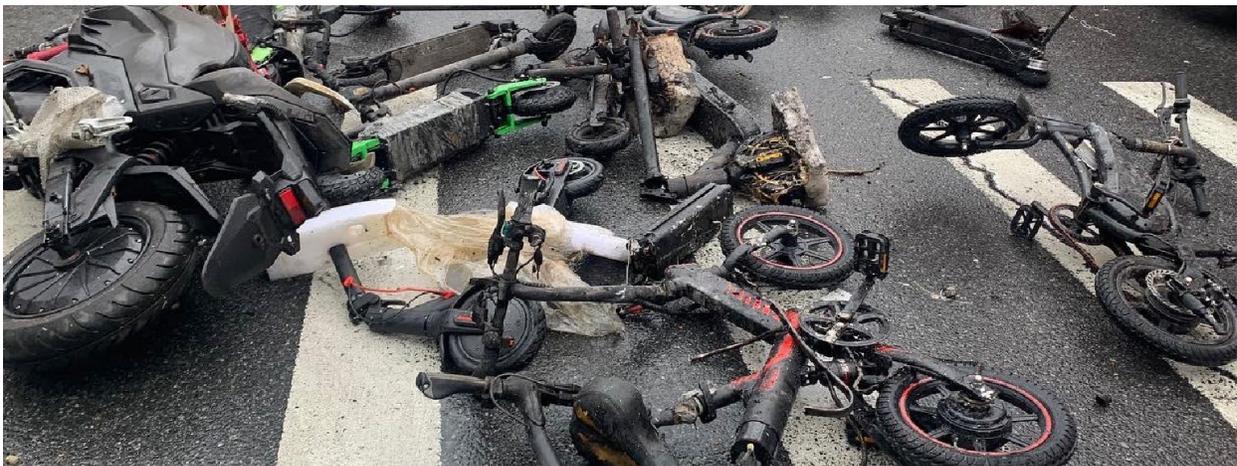
Fire Extinguishers
do not work
on lithium-ion batteries
fires.

Unexpected Re-ignition.

Reignition is common. Lithium-Ion Batteries are known to unexpectedly re-ignite (without warning) minutes, hours and even days after all visible fire has been put out.

Lithium-ion batteries can enter an uncontrollable, self-heating state. This can result in the release of gas, cause fire and possible explosion.

These batteries may continue to generate heat even when there is no visible sign of fire. Once heat reaches a certain level fire may reignite on the battery and surrounding area.



Appendix

Safety Data Sheet: Gasoline

SECTION 1 IDENTIFICATION

Product Name: Gasoline

Synonyms: Unleaded Gasoline, Regular Gasoline, Motor Fuel, 85 Octane Gasoline, 87 Octane Gasoline

SDS #: F1

Product Use: Motor Fuel

Restrictions on Use: Use only as directed

Manufacturer:

Oil Company
P.O. Box 12345
Lake City, TN 77899

Telephone: General Information: (101) 234-5678 **Fax:** (108) 425-0427

Contact person: Jeremi Web

Emergency Telephone: 800-123-4500 (CHEMTREC) or (307) 987-6543

SDS Date of Preparation: January 23, 2015

SECTION 2: HAZARDS IDENTIFICATION

Classification:

Physical	Health
Flammable Liquid Category 2	Aspiration Toxicity Category 1 Skin Irritation Category 2 Specific Target Organ Toxicity Single Exposure Category 3 (Nervous System) Carcinogen Category 1A Germ Cell Mutagenicity Category 1B

Label Elements:

Danger!



Hazard Phrases:

Highly flammable liquid and vapor.

May be fatal if swallowed and enters airways. Causes skin irritation.

May cause drowsiness or dizziness. May cause cancer.

May cause genetic defects.

Precautionary Phrases:

Prevention

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood Keep away from heat, sparks, open flames, and hot surfaces. No smoking. Keep container tightly closed.

Ground and bond container and receiving equipment

Use explosion-proof electrical, ventilating and lighting equipment. Use only non-sparking tools.

Take precautionary measures against static discharge. Avoid breathing vapors.

Wash thoroughly after handling.

Use only outdoors or in a well-ventilated area.

Wear protective gloves, skin protection and eye protection.

Response

IF SWALLOWED: Immediately call a POISON CENTER or doctor. Do NOT induce vomiting.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. If skin irritation occurs: Get medical attention.

Take off contaminated clothing and wash it before reuse.

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell.

IF exposed or concerned: Get medical attention.

In case of fire: Use water fog, carbon dioxide, dry chemical and foam to extinguish.

Storage and Disposal

Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up.

Dispose of contents and container in accordance with local and national regulations.

SECTION 3 COMPOSITION / INFORMATION ON

Chemical name	CAS No.	Concentration
Gasoline	8006-61-9	95-100%
Naphthalene	91-20-3	0-3%
Benzene	71-43-2	0-0.5%

SECTION 4 EMERGENCY and FIRST AID PROCEDURES

Eye Contact: Immediately flush eyes with water for several minutes. Get medical attention if irritation persists.

Skin Contact: Remove contaminated clothing and flush skin with water for several minutes. Wash thoroughly with soap and water. Get medical attention if irritation develops or persists. Launder clothing before reuse. Discard contaminated shoes.

Inhalation: Remove to fresh air. If breathing is difficult have qualified personnel administer oxygen. If breathing has stopped, administer artificial respiration. Get medical attention.

Ingestion: Do not induce vomiting. Rinse mouth with water. Never give anything by mouth to an unconsciousness person. If vomiting occurs spontaneously, keep head below hips to prevent aspiration into the lungs. Get immediate medical attention.

Most important symptoms/effects, acute and delayed: May cause eye irritation. Causes skin irritation with redness and drying. Inhalation may cause respiratory irritation and central nervous system effects. Harmful or fatal if swallowed. Aspiration during swallowing or vomiting may cause lung damage. May cause cancer. May cause genetic defects.

Indication of immediate medical attention and special treatment, if necessary:
Immediate medical attention is required for ingestion.

SECTION 5 FIRE and EXPLOSION HAZARD DATA

Suitable extinguishing media: Use water fog, foam, carbon dioxide, or dry chemical. Do not use a steady stream of water. Product may float on the surface of water and create a floating fire hazard.

Specific hazards arising from the chemical: This product is highly flammable and forms explosive mixtures with air. Vapors are heavier than air and will travel along surfaces to remote ignition sources and flash back. Closed containers may explode if exposed to extreme heat. Combustion may produce carbon oxides and other products of incomplete combustion.

Special protective equipment and precautions for fire-fighters: Firefighters should wear full emergency equipment and a NIOSH approved positive pressure self-contained breathing apparatus. Cool fire exposed container with water. Do not allow run-off from firefighting to enter drains or water courses.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures: Wear appropriate protective equipment. Eliminate ignitions sources and ventilate the area with explosion proof equipment. Wash thoroughly after handling.

Environmental hazards: Avoid release into the environment. Report spill as required by local and federal regulations.

Methods and materials for containment and cleaning up: Contain with an inert absorbent and place into a closable container for disposal. Use non-sparking tools and equipment. If spill has not ignited, use water spray to disperse the vapors and protect personnel attempting to stop leak. Prevent entry in storm sewers and waterways. Runoff can cause a fire or explosion hazard in sewers.

SECTION 7 HANDLING and STORAGE

Precautions for safe handling: Avoid contact with eyes, skin and clothing. Avoid breathing vapors. Wash thoroughly after handling. Use only with adequate ventilation. Wash thoroughly with soap and water after handling. Keep containers closed when not in use. Keep product away from heat, sparks, flames and all other sources of ignition. Do not permit smoking in use or storage areas. Use with non-sparking tools and explosion proof equipment. Electrically bond and ground containers for transfer

Do not cut, drill, grind or weld on or near containers, even empty containers. Empty containers retain product residues can be hazardous. Follow all SDS precautions when handling empty containers.

Improper filling of portable gasoline containers creates a fire hazard. Only dispense gasoline into an approved and properly labeled gasoline container. Always place portable containers on the ground while filling. Ensure pump nozzle is in contact with the container while filling. Do not use the nozzle's lock open device. Do not fill portable containers that are inside a vehicle or trailer/truck bed.

Do not use as a cleaner or solvent. Use only as a motor fuel. Do not siphon by mouth. Refer to OSHA 1910.1028 for requirements for handling and use of benzene.

Conditions for safe storage, including any incompatibilities: S Store in accordance with regulations for the storage of flammable liquids. Store in a dry, well ventilated area away from heat, direct sunlight and all sources of ignition. Store away from oxidizers and other incompatible materials. Protect containers from physical damage.

SECTION 8 EXPOSURE CONTROLS and PERSONAL

Exposure Guidelines:

<u>INGREDIENTS</u>	<u>EXPOSURE LIMITS</u>
Gasoline	300 ppm TWA , 500 ppm STEL ACGIH TLV
Naphthalene	10 ppm TWA OSHA PEL 10 ppm, skin TWA ACGIH TLV
Benzene	1 ppm TWA, 5 ppm STEL OSHA PEL 0.5 ppm TWA, 2.5 ppm STEL ACGIH TLV

29 CFR 1910.1028 is the OSHA regulation on Occupational Exposure to Benzene. Assure compliance with these regulations.

Appropriate engineering controls: Use with local exhaust ventilation to maintain exposures below the occupational exposure limits. Use explosion proof equipment where required

Respiratory protection: If exposures are exceeded, use a NIOSH approved organic vapor respirator appropriate for the form and concentration of the contaminants should be used. Selection of respiratory protection depends on the contaminant type, form and concentration. Select in accordance with OSHA 1910.134 and good Industrial Hygiene practice.

Skin protection: Impervious gloves such as viton recommended to prevent skin contact.

Eye protection: Wear chemical safety goggles to avoid eye contact.

Other: Impervious coveralls, apron and boots is required to prevent skin contact and contamination of personal clothing. A safety shower and eye wash should be available in the immediate work area.

SECTION 9 PHYSICAL and CHEMICAL PROPERTIES

Appearance (physical state, color, etc.): Colored or clear liquid

Odor: Aromatic hydrocarbon odor.

Odor threshold: 0.3 ppm (gasoline)	pH: Not applicable
Melting point/Pourpoint: -76°F (-60°C)	Boiling Point: 230° F (110°C)
Flash point: -45°F (-42.8°C)	Evaporation rate: Not available
Flammability (solid, gas): Not applicable	
Flammable limits: LEL: 1.4%	UEL: 7.6%
Vapor pressure: 7-15 psia	Vapor density: >1
Relative density: 0.65-0.75	Solubility: Insoluble in water
Partition coefficient: n-ctanol/water: Not available	Auto-ignition temperature: >530°F (>276.6°C)
Decomposition temperature: Not available	Viscosity: Not applicable

SECTION 10 STABILITY and REACTIVITY

Reactivity: This product is not expected to be reactive.

Chemical stability: The product is stable.

Possibility of hazardous reactions: None known.

Conditions to avoid: Keep away from heat and all sources of ignition.

Incompatible materials: Avoid oxidizing agents, acids, alkalies and halogens.

Hazardous decomposition products: Thermal decomposition may yield carbon oxides and other products of incomplete combustion.

SECTION 11 TOXICOLOGICAL INFORMATION

Health Hazards:

Inhalation: Vapors may cause respiratory irritation and central nervous system effect including headache, dizziness, headaches, giddiness, euphoria, vertigo, blurred vision, nausea, numbness, drowsiness, anesthesia, and coma. Gasoline vapors are heavier than air and may cause asphyxiation in enclosed or poorly ventilated area. Overexposure to benzene by inhalation may cause exhilaration, nervous excitation, and/or giddiness, followed by a period of depression, drowsiness, or fatigue, tightness of the chest, unconsciousness, tremors or death.

Skin Contact: Skin contact may cause irritation, redness and defatting of the skin.

Eye Contact: Eye contact may cause mild irritation with redness, tearing and pain.

Ingestion: Swallowing may cause gastrointestinal irritation, nausea, vomiting, diarrhea, vertigo, drowsiness, mental confusion, staggering gait, slurred speech, convulsions, unconsciousness and death due to circulatory failure. Aspiration during swallowing or vomiting may cause lung damage.

Chronic Effects of Overexposure: Prolonged occupational overexposure may cause dermatitis. Reports have associated repeated and prolonged overexposure to petroleum distillates with adverse liver, kidney and bone marrow effects and with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the product may be harmful or fatal. Repetitive direct skin application of kerosene over a two year period resulted in skin cancer in laboratory animals. Petroleum hydrocarbons of similar

composition and boiling ranges have been known to product kidney damage and tumors in male rats following prolonged inhalation exposures. Benzene has been shown to cause damage to the blood forming system with anemia, leukopenia and thrombocytopenia by all routes of exposure.

Mutagenicity: Benzene did not induce in vitro mutation in bacteria using standard AMES test conditions. Mammalian cell gene mutation tests carried out in various human, mouse and Chinese hamster cells resulted in mixed results.

Benzene is an in vivo mutagen in mammals, especially when chromosomal aberrations and micronuclei are induced. It has been reported that benzene exposure in humans induces genotoxic effects in lymphocytes in vivo.

Reproductive Toxicity: In a reproductive study, rats were administered 250 and 1000 mg/kg of petroleum distillates for at least 70 days prior to mating and during the 14 day mating cycle. The absence of adverse effects on in-life parameters (such as body weight, feed consumption, and clinical observations), a dosage level of 1000 mg/kg/day was considered to be the no-observed-adverse-effect level (NOAEL) for reproductive and systemic toxicity.

Carcinogenicity: Gasoline is listed by IARC as “Possibly Carcinogenic to Humans”, Group 2B and as a “Confirmed Animal Carcinogen with Unknown Relevance to Humans: A3 by ACGIH. Benzene is listed by IARC as “Carcinogenic to Humans” Group 1, by NTP as “Known to Be a Human Carcinogen” and as a “Confirmed Human Carcinogen”, A1 by ACGIH. Naphthalene is listed by IARC as “Possibly Carcinogenic to Humans”, Group 2B, as “Reasonably Anticipated to be a Human Carcinogen” and as a “Confirmed Animal Carcinogen with Unknown Relevance to Humans”, A3 by ACGIH.

Acute Toxicity Values: Acute Toxicity Estimate: Oral 14492 mg/kg

Gasoline: Oral rat LD50 >5000 mg/kg, Inhalation rat LC50 >5.61 mg/L/4 hr, Dermal rabbit LD50 >2000 mg/kg Naphthalene: Oral rat LD50 533 mg/kg, Inhalation rat LC0 0.4 mg/L (highest attainable concentration), Dermal rat LC50

>2500 mg/kg

Benzene: Oral rat LD50 >2000 mg/kg, Inhalation rat LC50 41.69 mg/L/4 hr, Dermal rabbit LD50 > 8260 mg/kg

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity:

Gasoline: 96 hr LL50 Pimephales promelas 8.2 mg/kg, 48 hr EL50 4.5 mg/L, 72 hr EL50 Pseudokirchnerella subcapitata

3.1 mg/L

Naphthalene: 96 hr LC50 Pimephales promelas 6.08 mg/L, 48 hr EC50 daphnia magna 2.16 mg/L Benzene: 96 hr LC50 Oncorhynchus mykiss 5.3 mg/L, 48 hr EC50 daphnia magna 10 mg/L, 72 hr EC50 Pseudokirchnerella subcapitata 32 mg/L

Persistence and degradability: Gasoline is inherently biodegradable.

Bioaccumulative potential: The bioaccumulation potentials of the major components of gasoline range from low to high. Some higher molecular weight components may be taken up by fish and domestic animals and bioconcentrated if they persist in environment.

Mobility in soil: Gasoline is expected to possess low to moderate mobility in soil.

Other adverse effects: None known.

SECTION 13: DISPOSAL INFORMATION

Waste Disposal Method: Dispose in accordance with all local, state and federal regulations.

SECTION 14: TRANSPORTATION INFORMATION

	UN Number	Proper shipping name	Hazard Class	Packing Group	Environmental Hazard
DOT	UN1203	Gasoline	3	PG II	No
TDG	UN1203	Gasoline	3	PG II	No
IMDG	UN1203	Gasoline	3	PG II	No
IATA	UN1203	Gasoline	3	PG II	No

Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code):
Not applicable.

Special precautions: None known.

SECTION 15: REGULATORY INFORMATION

Safety, health, and environmental regulations specific for the product in question.

CERCLA Hazardous Substances (Section 103)/RQ: This product has a Reportable Quantity (RQ) of 3,333 lbs. (based on the RQ for Naphthalene of 100 lbs). Releases above the RQ must be reported to the National Response Center. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

EPA SARA 311 Hazard Classification: Acute Health, Chronic Health, Fire Hazard

SARA 313: This product contains the following chemicals subject to Annual Release Reporting Requirements Under SARA Title III, Section 313 (40 CFR 372):

Benzene	71-43-2	0-0.5%
Naphthalene	91-20-3	0-3%

CALIFORNIA PROPOSITION 65: This product contains chemicals known to the State of California to cause cancer or reproductive toxicity.

WHMIS CLASSIFICATION: Class B, Division 2 (Flammable Liquid), Class D, Division 2A (Very Toxic Material Causing Other Toxic Effects)

This product has been classified in accordance with the hazard criteria in the CPR and the MSDS contains all the information required by the CPR.

Australia AICS: All of the components are listed on the Australian Inventory of Chemical Substances.

Canada DSL: All of the components are listed on the Canadian

Domestic Substances List. **China:** All the components are listed on

Inventory of Existing Chemical Substances in China. **European EINECS:**

All of the ingredients are listed on the EINECS inventory.

Korea: All the components are listed on the Korean Existing Chemical List.

New Zealand: All the components are listed on the New Zealand Inventory of Chemicals.

Philippines: All the components are listed on the Philippine Inventory of Chemical and Chemical Substances inventory.

US EPA Toxic Substances Control Act: All of the components of this product are listed on the TSCA inventory.

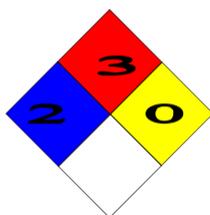
SECTION 16: OTHER INFORMATION

SDS Revision History: Converted to GHS format – all Sections revised

Date of current revision: January 9, 2015

Date of previous revision: December 2002

**National Fire
Protection
Association**



Health: 2*
Flammability : 3
Instability: 0
Specific Hazard:

(U.S.A)

Disclaimer: This product material safety data sheet provides health and safety information. The product should be used in applications consistent with this product literature. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to ensure safe workplace operations.

This material safety data sheet is provided in good faith and meets the requirements of the hazardous communication provisions of SARA TITLE III and 29 CFR 1910.1200(g) of the OSHA regulations. The above information is based on review of available information *** believes is reliable and is supplied for informational purposes only. *** does not guarantee its completeness or accuracy. Since conditions of use are outside the control of ***, *** disclaims all warranties, express or implied, and any liability for damage or injury which results from the use of the above data. Nothing herein is intended to permit infringement of valid patents and licenses.