International Association of Fire Fighters®

Mini-Drill #003

Response to a Hazardous Materials Incident
Dumpster Fire in Residential Area

Developed by

Hazardous Materials/Weapons of Mass Destruction
Training Department

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IAFF Mini-Drills

Facilitator Instructions

PURPOSE

The purpose of the IAFF Mini-Drill is to provide emergency responders with an opportunity to utilize their local jurisdictions' standard operating procedures/guidelines (SOPs/SOGs) documents to address the issues present during an incident involving hazardous materials.

Each drill consists of:

- Facilitator Guide
- Photograph(s) or diagram(s) from an actual incident
- Incident information for each stage of the response process[1]
- Resource documents (e.g., Material Safety Data Sheet (MSDS) for the materials involved in a product release)

The length of each drill will vary by the incident and student involvement, and is intended to last between 1½ to 2 hours.

PROCEDURE

The Facilitator should:

1. Read through the Facilitator Guide prior to delivery with the students and note the points where the incident photograph, incident information and resource documents should be used. These areas are indicated by boxes and bold type.

2. Be familiar with local jurisdictional SOPs/SOGs that address the type of incident, and adapt them to the situation presented.

3. Have a working knowledge of the definitions presented in the chemical and physical properties of hazardous materials.

4. Guide the discussion and make sure that it stays focused on the issues presented in the drill.

1 The systematic response process Analyze, Plan, Implement and Evaluate (APIE) correlates with the competencies outlined in NFPA® 472, Standard for Competence of Responders to Hazardous Materials/ Weapons of Mass Destruction Incidents, 2008 Edition.

Facilitator Guide

Topic: Response to a Hazardous Material Incident

Time Required: 1½ to 2 Hours

Materials:

- Local jurisdiction's Standard Operating Procedures/ Guidelines (SOPs/SOGs)
- Chalk or white board or large paper pad
- Chalk/markers
- References:
  - 2008 Emergency Response Guide (ERG)
  - NIOSH Pocket Guide to Chemical Hazards
  - MSDS for material(s) involved
- Incident information handouts—Analyze, Plan, Implement and Evaluate with photographs of incident

Motivation: During an emergency, the decisions and actions of the initial responders are critical to the successful outcome of an incident. This includes the rapid assessment of the situation, identification of the materials involved and establishing an Incident Action Plan (IAP). Personnel must be familiar with their jurisdiction's SOPs/ SOGs and implement them effectively based upon the situation present.

Objective: Given photographs of, and information about, an emergency incident and references (e.g., ERG, NIOSH Pocket Guide and MSDS), students will demonstrate the necessary actions to identify the hazardous material(s) involved, conduct a hazard and risk analysis and identify the incident priorities. Students will use local jurisdictional SOPs/SOGs to establish an incident management system, based upon the National Incident Management System (NIMS) principles.

Enabling Objectives:

1. Identify locations where hazardous materials may be present and how the locations relate to the type and quantity of materials present.
    - Residential
    - Commercial fixed sites
    - Transportation routes
    - Non-structural/outside locations

2. Use the MSDS to identify the following chemical and physical properties and how they relate to the release of a hazardous material.
    - Physical state
    - Vapor pressure
    - Boiling point
    - Vapor density
    - Specific gravity
    - Solubility
    - Flammability
        - Flash point
        - Ignition temperature
        - Flammable range
    - Toxicity
        - Routes of entry
    - Incompatibilities

3. Identify clues for recognizing hazardous materials.
    - Dispatch information
    - Occupancy and location
    - Container shape and size
    - Placards, labels and markings
    - Shipping papers and facility documents

4. Identify considerations when developing an IAP for an emergency response.

   - Incident priorities
   - Personal Protective Equipment (PPE)
   - Resources available
     - Personnel
     - Equipment
     - References
   - Incident Command System
     - Single command
     - Unified command
   - Accidental versus intentional

5. Identify benchmarks when evaluating effectiveness of emergency response actions.

   - Incident priorities
     - Successful completion
     - Deficiencies
   - Scene security
   - Termination activities

Overview:

- Hazardous materials locations
- Chemical and physical properties of hazardous materials
- Recognition of hazardous materials
- IAP
- Evaluation of emergency response actions

Introduction

Discuss the following with students.

Emergency responders must be able to quickly respond to emergency incidents, rapidly assess the conditions present and determine the incident priorities. When hazardous materials are involved, they must be able to perform a hazard and risk analysis and determine the appropriate strategy and tactics to produce a more favorable outcome.

Using the APIE process[1] will help responders during the decision-making process:

1. Analyze the problem.
2. Plan the response.
3. Implement the plan.
4. Evaluate the progress.

1 The APIE process is a simple response tool which provides a set of actions to implement for all emergency response situations—Analyze the Problem, Plan the Response, Implement the Plan and Evaluate the Progress. APIE is broad enough to be used for all types of response situations including fire, medical and HazMat/WMD incidents. The process is based on the tasks/competencies outlined in NFPA® 472, Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents, 2008 Edition.

Analyze the Problem

- Start with knowledge of area, pre-plans and previous experience
- Identify locations with hazardous materials
    - Residential
        - Normally do not have a large quantity
        - Small amounts of many substances
        - Materials involved in a fire produce hazardous gases
    - Commercial fixed sites
        - Manufacturing
        - Nature of site—chemical, industrial
        - Large quantity, small variety
    - Laboratory/research
        - Small quantity, large variety
        - Synergistic effect—what happens when mixed with other materials
        - Stability of materials, e.g., picric acid with presence of crystallization
    - Transportation routes
        - Highway—location, quantity
        - Rail—location, quantity
        - Air—location, quantity
    - Other non-structural/outside locations
        - Pipeline—location, quantity and type of material
        - Landfills
        - Dumpster—challenge with:
            - Identification of discarded materials
            - No separation of potentially reactive materials
- Chemical and physical properties

- Physical state—solid, liquid or gas
- Vapor pressure
- Boiling point
- Vapor density
- Specific gravity
- Solubility
- Flammability
  - Flash point
  - Ignition temperature
  - Flammable range
- Toxicity
  - Routes of entry
    - Inhale
    - Absorb
    - Ingest
    - Inject
  - Acute versus chronic effects

Notes for Facilitator

Provide students with the photograph of the incident (Handout 1).

Review the information on the handout entitled Analyze the Problem (Handout 2) with students.

Discuss the considerations for analyzing the problem:

- Types of materials that could be present in a dumpster
- Level of PPE which should be used
- Effects of extinguishing—suitability of extinguishing agents and runoff

Plan the Response

- Consider the following:
  - Dispatch information
    - Leak or fire
    - Name of product, if known
    - Injuries, victims entrapped
    - Location
    - Exposures
    - Actions being taken at scene
  - Occupancy and location
    - Type of facility and chemicals involved
    - Pre-plans available
  - Container shape and size
    - Transportation
    - Storage
  - Placards, labels and markings
    - DOT placards and labels
    - NFPA 704 Marking System
    - Military Marking System
  - Shipping papers and facility documents
    - Shipping papers
    - MSDS

Notes for Facilitator

Review the information on the handout entitled Plan the Response (Handout 3).

Discuss the considerations for planning the response.

- Life safety
- Incident stabilization
- Property conservation

Discuss PPE required on this incident.

Discuss the possible properties of an industrial strength drain cleaner and its effects on the situation. Responses should include:

- Challenges to product identification
- Acid or base
- Incompatibilities with other materials

Implement the Plan

- Establish Incident Command System (ICS)
    - Scene control—establish zones
    - Incident Commander (IC) and command post identified
    - Single command versus unified command
    - Accidental release versus intentional release
- Develop an Incident Action Plan (IAP)
    - Identify incident priorities
        - Life safety
        - Incident stabilization
        - Property conservation
    - Resources and personnel available
        - References
        - Training of personnel
        - PPE requirements
        - Resources available
        - Decontamination requirements

Notes for Facilitator

Review the information on the handout entitled Implement the Plan (Handout 4).

Give students the MSDS for chemical involved (Handout 5).

Discuss the considerations for implementing the response.

- Compatibility with other materials in dumpster
- Exposure to products of combustion
- Extinguishing agents
- Runoff from hoselines
- Contamination of structural firefighter PPE
- Need for additional resources

Ask students to draw the ICS for this incident on chalkboard, white board or large paper pad.

Evaluate Progress

- Evaluate the status of the Incident Action Plan
  - Identify benchmarks to assist in identifying progress
  - Incident priorities
    - Life safety—rescue, treatment and transport of patients
    - Incident stabilization—scene stabilizing versus incident escalating
    - Property conservation—includes the environment
  - Identify any deficiencies in the IAP and determine cause(s)
    - Termination activities
    - Debriefing
    - Post-incident analysis
    - Critique

Notes for Facilitator

Review the information on the handout entitled Evaluate Progress (Handout 6).

Discuss the considerations for evaluating the progress.

- What level of PPE is necessary for this situation?
- Will fire fighter structural PPE become contaminated?
- What other agencies should be contacted?
- What is the appropriate material to neutralize this spill?

Review

- Hazardous materials locations
- Chemical and physical properties of hazardous materials
- Recognition of hazardous materials
- Development of an IAP
- Evaluation of emergency response actions

Mini-Drill #003

Response to a Hazardous Materials Incident
Dumpster Fire in Residential Area

Handout #1

OBJECTIVE:

Given photographs of, and information about, an emergency incident and references (e.g., ERG, NIOSH Pocket Guide and MSDS), demonstrate the necessary actions to identify the hazardous material(s) involved, conduct a hazard and risk analysis and identify the incident priorities. Use local jurisdictional SOPs/SOGs to establish an incident management system, based upon the National Incident Management System (NIMS) principles.

Handout #2

ANALYZE THE PROBLEM

A 911 call is received at 1100 hours reporting a dumpster fire in an apartment complex. The normal assignment is dispatched.

The first due unit reports a fully involved dumpster fire with a heavy smoke condition as they approach the scene. There are vehicles parked within 6 feet of the dumpster, including a van that is partially obscured by the smoke.

There are two apartment buildings within 50 feet of the dumpster. They are of Type V construction (i.e., wood frame).

Handout #3

PLAN THE RESPONSE

The first arriving engine company confirms a fully involved dumpster fire with vehicle exposures and two apartment buildings in close proximity.

The engine company knocks down the majority of the fire in the dumpster with a 1¾-inch preconnected hose line.

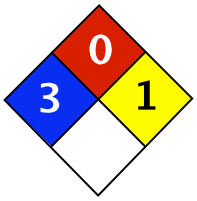
After the fire is controlled, a maintenance person approaches and says to the fire fighters, “I wonder if the chemical I put in there caused that fire!” The engine company officer immediately questions him as to what he disposed of in the dumpster. The maintenance person replies, “It was an industrial strength drain cleaner.”

Handout #4

IMPLEMENT THE PLAN

Using information from the maintenance person as well as the name, sodium hydroxide, and corrosive labels visible on several five-gallon plastic pails, fire fighters identify the material as sodium hydroxide.

Handout #5



Health	3
Fire	0
Reactivity	2
Personal Protection	J

Material Safety Data Sheet
Sodium hydroxide MSDS

Section 1: Chemical Product and Company Identification

Product Name: Sodium hydroxide

Catalog Codes: SLS3298, SLS1081, SLS2503, SLS3925, SLS1705

CAS#: 1310-73-2

RTECS: WB4900000

TSCA: TSCA 8(b) inventory: Sodium hydroxide

CI#: Not available.

Synonym: Caustic Soda

Chemical Name: Sodium Hydroxide

Chemical Formula: NaOH

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:
1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Sodium hydroxide	1310-73-2	100

Toxicological Data on Ingredients: Sodium hydroxide LD50: Not available. LC50: Not available.

Section 3: Hazards Identification

Potential Acute Health Effects:
Very hazardous in case of skin contact (corrosive, irritant, permeator), of eye contact (irritant, corrosive), of ingestion, of inhalation. The amount of tissue damage depends on length of contact. Eye contact can result in corneal damage or blindness. Skin contact can produce inflammation and blistering. Inhalation of dust will produce irritation to gastro-intestinal or respiratory tract, characterized by burning, sneezing and coughing. Severe over-exposure can produce lung damage, choking, unconsciousness or death. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Not available.
MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells.
TERATOGENIC EFFECTS: Not available.
DEVELOPMENTAL TOXICITY: Not available.

The substance may be toxic to mucous membranes, upper respiratory tract, skin, eyes.
Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction, or dermatitis. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.

Skin Contact:
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: metals

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available.
Risks of explosion of the product in presence of static discharge: Not available.
Slightly explosive in presence of heat.

Fire Fighting Media and Instructions: Not available

Special Remarks on Fire Hazards:
sodium hydroxide + zinc metal dust causes ignition of the latter.

Under proper conditions of temperature, pressure and state of division, it can ignite or react violently with acetaldehyde, ally alcohol, allyl chloride, benzene-1,4-diol, chlorine trifluoride, 1,2 dichlorethylene, nitroethane, nitromethane, nitroparaffins, nitropropane, cinnamaldehyde, 2,2-dichloro-3,3-dimethylbutane.
Sodium hydroxide in contact with water may generate enough heat to ignite adjacent combustible materials.
Phosphorous boiled with NaOH yields mixed phosphines which may ignite spontanously in air.
sodium hydroxide and cinnamaldehyde + heat may cause ignition.
Reaction with certain metals releases flammable and explosive hydrogen gas.

Special Remarks on Explosion Hazards:
Sodium hydroxide reacts to form explosive products with ammonia + silver nitrate.
Benzene extract of allyl benzenesulfonate prepared from allyl alcohol, and benzene sulfonyl chloride in presence of aquesous sodium hydroxide, under vacuum distillation, residue darkened and exploded.
Sodium Hydroxde + impure tetrahydrofuran, which can contain peroxides, can cause serious explosions.
Dry mixtures of sodium hydroxide and sodium tetrahydroborate liberate hydrogen explosively at 230-270 deg. C.
Sodium Hydroxide reacts with sodium salt of trichlorophenol + methyl alcohol + trichlorobenzene + heat to cause an explosion.

Section 6: Accidental Release Measures

Small Spill:
Use appropriate tools to put the spilled solid in a convenient waste disposal container. If necessary: Neutralize the residue with a dilute solution of acetic acid.

Large Spill:
Corrosive solid.
Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Neutralize the residue with a dilute solution of acetic acid. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep container dry. Do not breathe dust. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If you feel unwell, seek medical attention and show the label when possible. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, reducing agents, metals, acids, alkalis, moisture.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area. Hygroscopic. Deliquescent.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection:
Splash goggles. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Vapor and dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
STEL: 2 (mg/m3) from ACGIH (TLV) [United States]

TWA: 2 CEIL: 2 (mg/m3) from OSHA (PEL) [United States]
CEIL: 2 (mg/m3) from NIOSHConsult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Deliquescent solid.)

Odor: Odorless.

Taste: Not available.

Molecular Weight: 40 g/mole

Color: White.

pH (1% soln/water): 13.5 [Basic.]

Boiling Point: 1388°C (2530.4°F)

Melting Point: 323°C (613.4°F)

Critical Temperature: Not available.

Specific Gravity: 2.13 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water.

Solubility: Easily soluble in cold water.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Incompatible materials, moisture, moist air

Incompatibility with various substances:
Highly reactive with metals.
Reactive with oxidizing agents, reducing agents, acids, alkalis, moisture.

Corrosivity: Not available.

Special Remarks on Reactivity:
Hygroscopic. Much heat is evolved when solid material is dissolved in water. Therefore cold water and caution must be used for this process.
Sodium hydroxide solution and octanol + diborane during a work-up of a reaction mixture of oxime and diborane in tetrahyrofuran is very exothermic, a mild explosion being noted on one occassion.

Reactive with water, acids (mineral, non-oxidizing, e.g. hydrochloric, hydrofluoric acid, muriatic acid, phosphoric), acids (mineral, oxidizing e.g. chromic acid, hypochlorous acid, nitric acid, sulfuric acid), acids (organic e.g. acetic acid, benzoic acid, formic acid, methanoic acid, oxalic acid), aldehydes (e.g. acetaldehyde, acrolein, chloral hydrate, foraldehyde), carbamates (e.g. carbanolate, carbofuran), esters (e.g. butyl acetate, ethyl acetate, propyl formate), halogenated organics (dibromoethane, hexachlorobenzene, methyl chloride, trichloroethylene), isocyanates (e.g. methyl isocyanate), ketones (acetone, acetophenone, MEK, MIBK), acid chlorides, strong bases, strong oxidizing agents, strong reducing agents, flammable liquids, powdered metals and metals (i.e aluminum, tin, zinc, hafnium, raney nickel), metals (alkali and alkaline e.g. cesium, potassium, sodium), metal compounds (toxic e.g. berylium, lead acetate, nickel carbonyl, tetraethyl lead), mitrides (e.g. potassium nitride, sodium nitride), nitriles (e.g. acetonitrile, methyl cyanide), nitro compounds (organic e.g. nitrobenzene, nitromethane), acetic anhydride, chlorohydrin, chlorosulfonic acid, ethylene cyanohydrin, glyoxal, hydrosulfuric acid, oleum, propiolactone, acylonitrile, phorosous pentoxide, chloroethanol, chloroform-methanol, tetrahydroborate, cyanogen azide, 1,2,4,5 tetrachlorobenzene, cinnamaldehyde.
Reacts with formaldehyde hydroxide to yield formic acid, and hydrogen.

Special Remarks on Corrosivity: Very caustic to aluminum and other metals in presence of moisture.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion.

Toxicity to Animals:
LD50: Not available.
LC50: Not available.

Chronic Effects on Humans:
MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells.
May cause damage to the following organs: mucous membranes, upper respiratory tract, skin, eyes.

Other Toxic Effects on Humans:
Extremely hazardous in case of inhalation (lung corrosive).
Very hazardous in case of skin contact (corrosive, irritant, permeator), of eye contact (corrosive), of ingestion, .

Special Remarks on Toxicity to Animals:
Lowest Published Lethal Dose:
LDL [Rabbit] - Route: Oral; Dose: 500 mg/kg

Special Remarks on Chronic Effects on Humans: May affect genetic material. Investigation as a mutagen (cytogenetic analysis)

Special Remarks on other Toxic Effects on Humans:

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The product itself and its products of degradation are not toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: Class 8: Corrosive material

Identification: : Sodium hydroxide, solid UNNA: 1823 PG: II

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:
Illinois toxic substances disclosure to employee act: Sodium hydroxide
Illinois chemical safety act: Sodium hydroxide
New York release reporting list: Sodium hydroxide
Rhode Island RTK hazardous substances: Sodium hydroxide
Pennsylvania RTK: Sodium hydroxide
Minnesota: Sodium hydroxide
Massachusetts RTK: Sodium hydroxide
New Jersey: Sodium hydroxide
Louisiana spill reporting: Sodium hydroxide
California Director's List of Hazardous Substances: Sodium hydroxide
TSCA 8(b) inventory: Sodium hydroxide
CERCLA: Hazardous substances.: Sodium hydroxide: 1000 lbs. (453.6 kg)

Other Regulations:
OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).
EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): CLASS E: Corrosive solid.

DSCL (EEC):
R35- Causes severe burns.
S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S37/39- Wear suitable gloves and eye/face protection.
S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

HMIS (U.S.A.):

Health Hazard: 3

Fire Hazard: 0

Reactivity: 2

Personal Protection: j

National Fire Protection Association (U.S.A.):

Health: 3

Flammability: 0

Reactivity: 1

Specific hazard:

Protective Equipment:
Gloves.
Synthetic apron.
Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.
Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

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Handout #6

EVALUATE THE PROGRESS

Fire fighters build a dirt berm to contain the runoff from the dumpster.

A hazardous materials response team is called to respond. They use chemical protective clothing (CPC) as they begin to neutralize the material with sodium bicarbonate and citric acid.

The City Environmental Division, the Health Department and a private cleanup contractor respond to the scene.