

**SKILL VERIFICATION**

**TASKBOOK**

**HAZ MAT TECHNICIAN**

**MEETING THE REQUIREMENTS OF**  
**NFPA 472 (2013 EDITION)**

**THROUGH**

**OKLAHOMA STATE UNIVERSITY**  
**FIRE SERVICE TRAINING**

Task Book Assigned to: \_\_\_\_\_

Initiation Date: \_\_\_\_\_ By: \_\_\_\_\_

Certification Expiration Date: \_\_\_\_\_

## Instructions

This book will be used to document competency in the skills related to this level of certification. The tasks are taken directly from NFPA 472: STANDARD FOR COMPETENCE OF RESPONDERS TO HAZARDOUS MATERIALS/WEAPONS OF MASS DESTRUCTION INCIDENTS and those competencies should be reviewed. An assigned Certified Evaluator and/or Certified Proctors for OSU-FST are the only individuals allowed to sign off on tasks. A signature and date documents complete and successful completion of the task per the NFPA Standard.

## Final Evaluators Sign Off

I verify that all tasks have been performed by:

---

At the Haz Mat Technician level

---

Evaluator's Signature and Date

---

Evaluator's Printed Name and Contact Number

## Skill Requirements

See Individual Skills for Requirements



# Skill Sheet 8-1

**Objective 8:** Perform maintenance and testing on monitoring equipment, test strips, and reagents. *[NFPA<sup>®</sup> 472, 7.2.1.3.6]*

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

## Directions

For this skills evaluation checklist, students will perform routine maintenance and testing on various types of monitoring equipment, test strips, and reagents. Always follow manufacturer's recommendations and local standard operating procedures (SOPs) when performing all procedures.

**Note:** This skill should be repeated to evaluate the student's ability to perform this skill with all equipment to be maintained and tested.

## Resources

- Monitoring equipment, test strips, and reagents
- Manufacturer's operator's manual
- Local standard operating procedures (SOPs)
- Appropriate personal protective equipment (PPE)
- Equipment maintenance log/forms
- Writing implement
- Maintenance equipment such as calibration gases or other necessary items

### Criteria & Evaluation Comments

---

Criteria (determined by the AHJ)

*After the candidate has completed the skill sheet, write comments below.*

Evaluator/Candidate Comments

Pass

Fail

---

Evaluator Signature

Date

---

Student Signature

Date

### Skills Evaluation Checklist

**Objective 8:** Perform maintenance and testing on monitoring equipment, test strips, and reagents.

Task Steps		Yes	No
1.	Identify the device or item that requires testing or maintenance.		
2.	Perform testing and/or maintenance as identified in the manufacturer's instructions and AHJ SOPs.		
3.	Properly document any maintenance or testing performed.		

## Skill Sheet 8-2

**Objective 8:** Demonstrate the use of a multi-gas meter (carbon monoxide, oxygen, combustible gases, multi gas and others) to identify hazards.  
*[NFPA<sup>®</sup> 472, 7.2.1.3.5(1, 3-4)]*

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

### Directions

For this skills evaluation checklist, students will demonstrate the use a multi-gas meter in order to identify hazards. These instruments may detect carbon monoxide, oxygen, combustible gases, and others as determined by the AHJ. Always follow manufacturer's recommendations and local standard operating procedures (SOPs) when performing all procedures.

### Resources

- Multi-gas meter
- Manufacturer's operator's manual
- Local standard operating procedures (SOPs)
- Appropriate personal protective equipment (PPE)
- Product, container, or area to be tested, as identified by instructor
- Cleaning supplies recommended by manufacturer

### Criteria & Evaluation Comments

---

Criteria (determined by the AHJ)

*After the candidate has completed the skill sheet, write comments below.*

Evaluator/Candidate Comments

Pass

Fail

---

Evaluator Signature

Date

---

Student Signature

Date

## Skills Evaluation Checklist

**Objective 8:** Demonstrate the use of a multi-gas meter (carbon monoxide, oxygen, combustible gases, multi gas and others) to identify hazards.

**NOTE:** Specific procedures will vary depending on the equipment used. Refer to the manufacturer's instructions for complete directions.

Task Steps		Yes	No
1.	Select the monitor and identify the gases it will detect.		
2.	Perform a bump test to ensure the meter is functioning properly.		
3.	Perform a "fresh air" calibration of the monitor prior to entry.		
4.	Properly monitor the area as per AHJ requirements.		
5.	Report significant readings (as determined by the AHJ) to the entry team leader.		
6.	When monitoring is complete, turn off the instrument.		
7.	Clean the monitor as per the manufacturer's instructions.		

## Skill Sheet 8-3

**Objective 9:** Demonstrate the use of pH meters to identify hazards.  
*[NFPA<sup>®</sup> 472, 7.2.1.3.5(6)]*

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

### Directions

For this skills evaluation checklist, students will demonstrate the proper use of pH meters to identify hazards. Always follow manufacturer's recommendations and local standard operating procedures (SOPs) when performing all procedures.

### Resources

- pH meter
- Manufacturer's operator's manual
- Local standard operating procedures (SOPs)
- Appropriate personal protective equipment (PPE)
- Test solution with known pH
- Liquid to be tested, as identified by instructor
- Cleaning supplies recommended by manufacturer

Not Used By The OK-Regional  
Response System

**Criteria & Evaluation Comments**

---

Criteria (determined by the AHJ)

*After the candidate has completed the skill sheet, write comments below.*

Evaluator/Candidate Comments

Pass

Fail

---

Evaluator Signature

Date

---

Student Signature

Date

**Not Used By The OK-Regional  
Response System**

## Skills Evaluation Checklist

**Objective 9:** Demonstrate the use of pH meters to identify hazards.

Task Steps		Yes	No
1.	Turn on the pH meter.		
2.	Remove the protective cap from the electrode.		
3.	Calibrate the pH meter in a test solution with a known pH as per manufacturer's instructions.		
4.	Once calibrated, rinse and dry the electrode.		
5.	Place the electrode in the liquid to be tested and make note of the reading.		
6.	Report significant readings (as determined by the AHJ) to the entry team leader.		
7.	Remove the electrode from the liquid and clean as per manufacturer's instructions.		
8.	Replace the protective cap on the electrode.		
9.	Turn off the meter.		

Not Used By The OK-Regional  
Response System

## Skill Sheet 8-4

**Objective 10:** Demonstrate the use of colorimetric tubes to identify hazards.  
*[NFPA<sup>®</sup> 472, 7.2.1.3.5(2)]*

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

### Directions

For this skills evaluation checklist, students will demonstrate the use of colorimetric tubes to identify hazards. Always follow manufacturer's recommendations and local standard operating procedures (SOPs) when performing all procedures.

**NOTE:** Specific procedures will vary depending on the equipment used. Refer to the manufacturer's instructions for complete directions.

### Resources

- Colorimetric indicator tube kit
- Manufacturer's operator's manual
- Local standard operating procedures (SOPs)
- Appropriate personal protective equipment (PPE)
- Product, container, or area to be tested, as identified by instructor

### Criteria & Evaluation Comments

---

Criteria (determined by the AHJ)

*After the candidate has completed the skill sheet, write comments below.*

Evaluator/Candidate Comments

Pass

Fail

---

Evaluator Signature

Date

---

Student Signature

Date

## Skills Evaluation Checklist

**Objective 10:** Demonstrate the use of colorimetric tubes to identify hazards.

**NOTE:** Specific procedures will vary depending on the equipment used. Refer to the manufacturer's instructions for complete directions.

Task Steps		Yes	No
1.	Use the manufacturer's instruction manual to select the proper colorimetric tube for sampling.		
2.	Using the selected tube, perform a one minute "field test" on the hand pump. With an unbroken tube in the pump, the bellows should be compressed completely. The pump should remain compressed for one minute.		
3.	Reset the counter.		
4.	Properly break the tip off of the tube(s) using the provided tube cutter found on the pump.		
5.	Insert the tube into the hand pump in the proper direction. The arrow on the tube should point toward the pump.		
6.	Hold the tip of the tube 1-2 inches (25 to 50 mm) away from the product or container opening, taking care not to aspirate any liquid.		
7.	Pump the appropriate number of strokes based on the manufacturer's instructions.		
8.	Remove the tube from the pump and compare it to the picture in the manufacturer's instructions to ensure proper color change.		
9.	Dispose of tube per AHJ SOPs.		
10.	Clear the bellows by pumping it at least three times in clean air without a tube.		

## Skill Sheet 8-5

**Objective 11:** Demonstrate the use of pH paper to identify hazards.  
*[NFPA<sup>®</sup> 472, 7.2.1.3.5(9)]*

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

### Directions

For this skills evaluation checklist, students will use pH paper to identify hazards. Always follow manufacturer's recommendations and local standard operating procedures (SOPs) when performing all procedures.

### Resources

- pH paper
- Manufacturer's instructions
- Local standard operating procedures (SOPs)
- Appropriate personal protective equipment (PPE)
- Liquid product to be tested, as identified by instructor

### Criteria & Evaluation Comments

---

Criteria (determined by the AHJ)

*After the candidate has completed the skill sheet, write comments below.*

Evaluator/Candidate Comments

Pass

Fail

---

Evaluator Signature

Date

---

Student Signature

Date

## Skills Evaluation Checklist

**Objective 11:** Demonstrate the use of pH paper to identify hazards.

Task Steps		Yes	No
1.	Remove a 3-4 inch (75 to 100 mm) piece of pH paper from the roll or remove a strip from the container.		
2.	Approach the product from uphill and upwind. Make certain that responders do not come in direct contact with the spilled product.		
3.	When approaching the product, determine the presence of corrosive vapors by waving wetted test paper in atmosphere.		
4.	If vapors do not exist, take sample of liquid product using a pipette without personally coming into contact with the material. <b>Note:</b> If necessary, attach strip to long rod or pole to ensure that user does not come into contact with material.		
5.	Compare results to pH paper chart to determine if the product is an acid, a base, or neutral. <b>Note:</b> Confirmation of a corrosive atmosphere will eliminate the use of electronic meters for further testing.		
6.	Dispose of contaminated test paper accordingly.		
7.	Advance to decontamination line for decontamination.		

## Skill Sheet 8-6

**Objective 12:** Demonstrate the use of reagent test strips to identify hazards.  
*[NFPA® 472, 7.2.1.3.5(10)]*

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

### Directions

For this skills evaluation checklist, students will demonstrate proper use of reagent test strips to identify hazards. Always follow manufacturer's recommendations and local standard operating procedures (SOPs) when performing all procedures.

### Resources

- Reagent test strips
- Manufacturer's instructions
- Local standard operating procedures (SOPs)
- Appropriate personal protective equipment (PPE)
- Product to be tested, as identified by instructor

### Criteria & Evaluation Comments

---

Criteria (determined by the AHJ)

*After the candidate has completed the skill sheet, write comments below.*

Evaluator/Candidate Comments

Pass

Fail

---

Evaluator Signature

Date

---

Student Signature

Date

## Skills Evaluation Checklist

**Objective 12:** Demonstrate the use of reagent test strips to identify hazards.

Task Steps		Yes	No
1.	Select the appropriate test strips for the product present.		
2.	Ensure that the test strips are not out of date.		
3.	Remove one strip from the container.		
4.	Approach the product from uphill and upwind. Make certain that responders do not come in direct contact with the spilled product.		
5.	Use a syringe or pipette to gain a sample and apply it to the test strip.		
6.	Identify any changes to the strip and compare them with the provided chart.		
7.	Report significant findings (as determined by the AHJ) to the entry team leader.		
8.	Dispose of contaminated test paper accordingly.		

# Skill Sheet 8-7

**Objective 13:** Demonstrate the use of radiation detection instruments to identify hazards. *[NFPA<sup>®</sup> 472, 7.2.1.3.5(8)]*

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

## Directions

For this skills evaluation checklist, students will correctly demonstrate the use of radiation detection instruments to identify hazards. Always follow manufacturer's recommendations and local standard operating procedures (SOPs) when performing all procedures.

## Resources

- Radiation detection instrument(s)
- Manufacturer's operator's manual
- Local standard operating procedures (SOPs)
- Appropriate personal protective equipment (PPE)
- Radiation test source

### Criteria & Evaluation Comments

---

Criteria (determined by the AHJ)

*After the candidate has completed the skill sheet, write comments below.*

Evaluator/Candidate Comments

Pass

Fail

---

Evaluator Signature

Date

---

Student Signature

Date

## Skills Evaluation Checklist

**Objective 13:** Demonstrate the use of radiation detection instruments to identify hazards.

**NOTE:** Specific procedures will vary depending on the equipment used. Refer to the manufacturer's instructions for complete directions.

Task Steps		Yes	No
1.	Select the appropriate monitor for the potential hazard(s).		
2.	Ensure that the monitor has been maintained and appropriately calibrated according to AHJ SOPs and manufacturer's instructions.		
3.	Turn on the meter and acquire background radiation levels.		
4.	Approach the product from uphill and upwind. Consider the rising or sinking of particular materials in the atmosphere. Test the atmosphere at various levels for appropriate readings.		
5.	Determine the presence of alpha, beta, and gamma radiation.		
6.	Compare radiation values to AHJ SOPs.		
7.	Report significant findings (as determined by the AHJ) to the entry team leader.		
8.	Return the device to service as per manufacturer's instructions.		

## Skill Sheet 8-8

**Objective 14:** Demonstrate the use of passive dosimeters to identify hazards.  
*[NFPA<sup>®</sup> 472, 7.2.1.3.5(5)]*

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

### Directions

For this skills evaluation checklist, students will demonstrate proper use of passive dosimeters. Always follow manufacturer's recommendations and local standard operating procedures (SOPs) when performing all procedures.

### Resources

- Passive dosimeter(s)
- Manufacturer's instructions
- Local standard operating procedures (SOPs)
- Appropriate personal protective equipment (PPE)
- Sample documentation forms

### Criteria & Evaluation Comments

---

Criteria (determined by the AHJ)

*After the candidate has completed the skill sheet, write comments below.*

Evaluator/Candidate Comments

Pass

Fail

---

Evaluator Signature

Date

---

Student Signature

Date

## Skills Evaluation Checklist

**Objective 14:** Demonstrate the use of passive dosimeters to identify hazards.

Task Steps		Yes	No
1.	Ensure the dosimeter is issued to the correct person.		
2.	Ensure the dosimeter has not passed its expiration date.		
3.	Don the dosimeter as per manufacturer's instructions.		
4.	Follow manufacturer's instructions and AHJ procedures regarding dosimeter analysis.		
5.	Document results as per AHJ procedures.		

## Skill Sheet 8-9

**Objective 15:** Demonstrate the use of photoionization and flame ionization detectors to identify hazards. *[NFPA<sup>®</sup> 472, 7.2.1.3.5(7)]*

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

### Directions

For this skills evaluation checklist, students will properly demonstrate the use of both photoionization and flame ionization detectors to identify hazards. Always follow manufacturer's recommendations and local standard operating procedures (SOPs) when performing all procedures.

### Resources

- Photoionization detector(s)
- Flame ionization detector(s)
- Manufacturer's operator's manual
- Local standard operating procedures (SOPs)
- Appropriate personal protective equipment (PPE)
- Product, container, or area to be tested, as identified by instructor

### Criteria & Evaluation Comments

---

Criteria (determined by the AHJ)

*After the candidate has completed the skill sheet, write comments below.*

Evaluator/Candidate Comments

Pass

Fail

---

Evaluator Signature

Date

---

Student Signature

Date

## Skills Evaluation Checklist

**Objective 15:** Demonstrate the use of photoionization and flame ionization detectors to identify hazards.

**NOTE:** Specific procedures will vary depending on the equipment used. Refer to the manufacturer's instructions for complete directions.

Task Steps		Yes	No
1.	Turn the device on and perform a "fresh air" calibration.		
2.	Operate the device as per manufacturer's instructions and AHJ procedures.		
3.	Identify conversion factors and apply them as necessary.		
4.	Report significant findings (as determined by the AHJ) to the entry team leader.		
5.	When monitoring is complete, turn off the device.		
6.	Return the device to service as per the manufacturer's instructions.		

# Skill Sheet 8-10

**Objective 16:** Demonstrate the use of WMD detectors (chemical and biological) to identify hazards. *[NFPA<sup>®</sup> 472, 7.2.1.3.5(11)]*

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

## Directions

For this skills evaluation checklist, students will demonstrate proper use of WMD detectors. Always follow manufacturer's recommendations and local standard operating procedures (SOPs) when performing all procedures.

## Resources

- WMD detectors (chemical and biological)
- Manufacturer's operator's manual
- Local standard operating procedures (SOPs)
- Appropriate personal protective equipment (PPE)
- Product, container, or area to be tested, as identified by instructor
- Cleaning supplies recommended by manufacturer

### Criteria & Evaluation Comments

---

Criteria (determined by the AHJ)

*After the candidate has completed the skill sheet, write comments below.*

Evaluator/Candidate Comments

Pass

Fail

---

Evaluator Signature

Date

---

Student Signature

Date

## Skills Evaluation Checklist

**Objective 16:** Demonstrate the use of WMD detectors (chemical and biological) to identify hazards.

**NOTE:** Specific procedures will vary depending on the equipment used. Refer to the manufacturer's instructions for complete directions.

Task Steps		Yes	No
1.	Select the correct device for the potential hazard(s).		
2.	Turn on the device.		
3.	Ensure the device is functioning properly and is free of contaminants. The device may require a "warm up" period.		
4.	Operate the device as per manufacturer's instructions and AHJ procedures.		
5.	Report significant readings (as determined by the AHJ) to the entry team leader.		
6.	When monitoring is complete, turn off the device.		
7.	Clean the monitor as per the manufacturer's instructions.		

# Skill Sheet 8-11

**Objective 17:** Collect samples of a hazardous material solid, liquid, or gas.  
*[NFPA<sup>®</sup> 472, 7.2.1.5]*

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

## Directions

For this skills evaluation checklist, students will collect samples of a hazardous material solid, liquid, or gas. Always follow manufacturer's recommendations and local standard operating procedures (SOPs) when performing all procedures.

**Note:** This skill should be repeated to evaluate the student's ability to perform this skill on solid, liquid, and gas samples.

## Resources

- Equipment for sampling solids, such as stainless steel spoons, scoops, scalpels, and spatulas
- Equipment for sampling liquids, such as pipettes, syringes, and tubing
- Equipment for sampling gases, such as a gas sampling bag
- Appropriate personal protective equipment (PPE)
- Materials to be sampled, as identified by instructor
- Sample records forms
- Chain-of-custody documentation and materials

### Criteria & Evaluation Comments

---

Criteria (determined by the AHJ)

*After the candidate has completed the skill sheet, write comments below.*

Evaluator/Candidate Comments

Pass

Fail

---

Evaluator Signature

Date

---

Student Signature

Date

## Skills Evaluation Checklist

**Objective 17:** Collect samples of a hazardous material solid, liquid, or gas.

Task Steps		Yes	No
1.	Approach the product from uphill and upwind if possible.		
2.	Ensure any materials and equipment used for collection are certified "clean" and kept sealed until used.		
3.	Collect the sample from an upwind position, avoiding contamination of the sample. Place the sample in the appropriate container as per AHJ SOPs.  <b>Solid</b> - Select and use the appropriate equipment such as stainless steel spoons, scoops, scalpels, and spatulas in accordance with AHJ SOPs.  <b>Liquid</b> - Select and use the appropriate equipment such as pipettes, syringes, and tubing in accordance with AHJ SOPs.  <b>Gas</b> - Select and use the appropriate equipment such as a gas sampling bag in accordance with AHJ SOPs.		
4.	Record the type of container from which the sample is being drawn, including container markings and any reactions or other relevant information.		
5.	Follow all chain-of-custody procedures established by the AHJ.		
6.	Once the sample is properly collected, take it to a safe testing location on the edge of the hot zone but not in the warm zone.		

# Skill Sheet 9-1

**Objective 8:** Don, work in, and doff self-contained breathing apparatus (SCBA).  
*[NFPA 472, 7.4.2(3)]*

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

## Directions

For this skills evaluation checklist, students will don SCBA. You should inform students of any time requirements for this skill.

The steps given in these skill sheets are general procedures for donning an SCBA. The specific SCBA manufacturer's recommendations for donning and use of the SCBA should always be followed. Some department SOPs only allow seat-mounted SCBA or the facepiece to be donned upon arrival at the scene after the apparatus has stopped. Local procedures must be followed to ensure the safety of the firefighter. Specific steps for donning may vary by department according to local policy.

## Resources

- Appropriate personal protective clothing
- SCBA
- PASS device

### Criteria & Evaluation Comments

---

Criteria (determined by the AHJ)

*After the candidate has completed the skill sheet, write comments below.*

Evaluator/Candidate Comments

Pass

Fail

---

Evaluator Signature

Date

---

Student Signature

Date

## Skills Evaluation Checklist

**Objective 7:** Don, work in, and doff self-contained breathing apparatus (SCBA).

Task Steps		Yes	No
1.	Position the SCBA with the valve end of the cylinder in the correct position, according to the donning method used. All harness straps are fully extended and untangled.		
2.	Open cylinder valve fully; listen for activation of: a. Integrated PASS Alarm (if equipped) b. Low Air Alarm		
3.	Check cylinder and regulator pressure gauges. Pressure readings within 100 psi (700 kPa) OR needles on both pressure gauges indicate same pressure.		
4.	Don the SCBA in a safe manner.		
5.	Fasten chest strap, buckle waist strap, and adjust shoulder straps.		
6.	Don facepiece over the head and securely tighten the straps, pulling the straps straight backwards, not out to the side.		
7.	After straps are tightened, test the facepiece for a proper seal and operation of the exhalation valve. <b>Note:</b> Not all facepieces are designed for a seal check without the regulator being attached and activated.		
8.	Don hood, ensure it covers all exposed skin.		
9.	Connect air supply to facepiece.		
10.	Activate external PASS device, if not equipped with integrated device.		
11.	Don helmet, with chin strap secure and adjusted, and gloves.		
12.	Perform assigned duties.		
13.	Doff SCBA, following donning steps in reverse order.		
14.	Close cylinder valve completely.		
15.	Bleed air from system.		
16.	Check air cylinder pressure and replace cylinder as per AHJ policies.		
17.	Return all straps, valves, and components back to ready state.		

## Skill Sheet 9-2

**Objective 8:** Don, work in, and doff liquid splash-protective clothing.  
*[NFPA 472, 7.4.2(4), 7.4.3(2)]*

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

### Directions

For this skills evaluation checklist, students will don, work in, and doff liquid splash-protective clothing. Always follow manufacturer's recommendations and local standard operating procedures (SOPs) when performing all procedures.

**Note:** Because responders are required to work in PPE for this skill, responders must work with a buddy. At least two responders are required for this skill.

### Resources

- Proper PPE for operation, including
  - Nonencapsulating Level B PPE
  - Work boots
  - SCBA
  - Inner protective gloves
  - Outer protective gloves
- Hard hat
- At least two responders

### Criteria & Evaluation Comments

---

Criteria (determined by the AHJ)

*After the candidate has completed the skill sheet, write comments below.*

Evaluator/Candidate Comments

Pass

Fail

---

Evaluator Signature

Date

---

Student Signature

Date

## Skills Evaluation Checklist

**Objective 8:** Don, work in, and doff liquid splash-protective clothing.

Task Steps		Yes	No
1.	Perform a visual inspection of PPE for damage or defects.		
2.	Don nonencapsulating Level B PPE and secure closures.		
3.	Don work boots.		
4.	Pull suit leg opening over the top of the work boots.		
5.	Inspect and properly don the SCBA.		
6.	Don SCBA facepiece and ensure a proper fit and seal.		
7.	Pull suit hood up completely so that facepiece straps and skin are not exposed.		
8.	Don hard hat (if required by AHJ).		
9.	Don inner protective gloves.		
10.	Don outer protective gloves.		
11.	Attach SCBA regulator to facepiece and ensure proper operation.		
12.	Record beginning air pressure and perform a radio check.		
13.	Perform incident control tasks as assigned, including: <ul style="list-style-type: none"> <li>a. Close valves that are open</li> <li>b. Replace missing plugs</li> <li>c. Tighten loose plugs</li> </ul>		
14.	Undergo technical decontamination as per AHJ SOPs.		
15.	Ensure medical monitoring is performed as per AHJ SOPs.		
16.	To doff, remove PPE in reverse order of donning.		

## Skill Sheet 9-3

**Objective 9:** Don, work in, and doff vapor-protective clothing.  
*[NFPA 472, 7.4.2(4), 7.4.3(2)]*

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

### Directions

For this skills evaluation checklist, students will don, work in, and doff vapor-protective clothing. Always follow manufacturer's recommendations and local standard operating procedures (SOPs) when performing all procedures.

**Note:** Because responders are required to work in PPE for this skill, responders must work with a buddy. At least two responders are required for this skill.

### Resources

- Proper PPE for the operation, including
  - Vapor-protective suit
  - SCBA
  - Chemical boots
- Hard hat
- At least two responders

### Criteria & Evaluation Comments

---

Criteria (determined by the AHJ)

*After the candidate has completed the skill sheet, write comments below.*

Evaluator/Candidate Comments

Pass

Fail

---

Evaluator Signature

Date

---

Student Signature

Date

## Skills Evaluation Checklist

**Objective 9:** Don, work in, and doff vapor-protective clothing.

Task Steps		Yes	No
1.	Perform a visual inspection of PPE for damage or defects.		
2.	Ensure the suit is the correct size.		
3.	Ensure zipper is in good working order.		
4.	Inspect and properly don the SCBA.		
5.	Remove shoes, belts, and any objects that could damage suit.		
6.	While seated, place both legs into suit. Stand and attach belt if available.		
7.	Place feet into chemical boots.		
8.	Turn on air supply, don SCBA facepiece, check seal and breathe normally to ensure SCBA operates properly.		
9.	Don hard hat (if required by AHJ).		
10.	Record beginning air pressure and perform a radio check.		
11.	With assistance, place arms and head inside the suit, close the zipper, and shut closure.		
12.	Perform incident control tasks as assigned, including: <ul style="list-style-type: none"> <li>a. Close valves that are open</li> <li>b. Replace missing plugs</li> <li>c. Tighten loose plugs</li> </ul>		
13.	Undergo technical decontamination as per AHJ SOPs.		
14.	To doff, remove PPE in reverse order of donning.		
15.	Ensure medical monitoring is performed as per AHJ SOPs.		

# Skill Sheet 9-4

**Objective 12:** Inspect, test, and maintain PPE.

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

## Directions

For this skills evaluation checklist, students will inspect PPE after use, test PPE, and maintain PPE. Always follow manufacturer's recommendations and local standard operating procedures (SOPs) when performing all procedures.

## Resources

- Personal protective equipment (PPE)
- Manufacturer's instructions
- PPE maintenance log/forms
- Writing implement
- Compressed air source
- Tubing
- Pressure gauge
- Replacement components, as needed:  
O-rings, face seals, rubber cuffs, valves  
and passthroughs
- Zipper lubricant, per manufacturer's  
instructions
- Water
- Mild detergent

### Criteria & Evaluation Comments

---

Criteria (determined by the AHJ)

*After the candidate has completed the skill sheet, write comments below.*

Evaluator/Candidate Comments

Pass

Fail

---

Evaluator Signature

Date

---

Student Signature

Date

## Skills Evaluation Checklist

**Objective 12:** Inspect, test, and maintain PPE.

Task Steps		Yes	No
<b>Inspection</b>			
1.	Visually inspect both the interior and exterior of the suit looking for damage. Pay special attention to the boots, gloves, seams, and visors.		
2.	Visually inspect the suit for any changes to the suit material. Changes can include brittleness, stiffness, swelling, stickiness or others that indicate chemical degradation or aging.		
3.	Check to ensure the zipper functions correctly.		
4.	Check the function of all valves and passthroughs.		
5.	Document all findings during the inspection as per AHJ requirements and remove any suits with defects or malfunctions from service.		
<b>Testing (Pressure Test)</b>			
1.	Place the suit on a clean, smooth surface.		
2.	Follow manufacturer's instructions for exhaust valve.		
3.	Insert the face seal plate or facepiece and plug assembly as per manufacturer's instructions.		
4.	Close the zipper.		
5.	Connect the pressure gauge and tubing.		
6.	Check and record pressure.		
<b>Maintenance</b>			
1.	Replace O-rings, face seals, rubber cuffs, valves and passthroughs, and any other components in accordance with manufacturer's guidelines.		
2.	Lubricate the zipper with each use or cleaning as per the manufacturer's instructions.		
3.	Hand wash the suit in warm water using a mild detergent.		
4.	Hang the suit and allow to air dry or use fans to speed the drying process.		



# Skill Sheet 10-1

**Objective 11:** Perform mass decontamination operations involving ambulatory and nonambulatory victims. *[NFPA<sup>®</sup> 472, 7.4.5(3)]*

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

## Directions

For this skills evaluation checklist, students will perform mass decontamination. Always follow local standard operating procedures (SOPs) when performing all procedures.

## Resources

- Appropriate personal protective equipment (PPE)
- Fire apparatus
- A charged hoseline with fog pattern nozzle
- "Victims," both ambulatory and nonambulatory
- A secure container with lid to collect contaminated clothing
- Bags and tags for personal property or evidence
- Detection device appropriate to detect contaminant
- Backboard or litter
- Sponges, brushes
- Towels
- Disposable garments

---

**Criteria & Evaluation Comments**

---

Criteria (determined by the AHJ)

*After the candidate has completed the skill sheet, write comments below.*

Evaluator/Candidate Comments

Pass

Fail

---

Evaluator Signature

Date

---

Student Signature

Date

## Skills Evaluation Checklist

**Objective 11:** Perform mass decontamination operations involving ambulatory and nonambulatory victims.

Task Steps		Yes	No
<b>Ambulatory Victims</b>			
1.	Ensure that all responders are wearing appropriate PPE for performing mass decontamination operations.		
2.	Prepare fire apparatus for use during mass decontamination.		
3.	Set fire nozzle to fog pattern.		
4.	Instruct all victims to go through mass decontamination. <b>Note:</b> Nonambulatory victims should be carried or moved through the decontamination process according to AHJ SOPs.		
5.	Instruct victims to remove contaminated clothing, ensuring that victims do not come into further contact with any contaminants.		
6.	Instruct victims to keep arms raised as they proceed slowly through the wash area.		
7.	Monitor for additional contamination using the appropriate detection device. <b>Note:</b> If contamination is found, instruct victim to go through wash again, as appropriate.		
8.	Instruct victims to move to a clean area to dry off.		
9.	Send victims for medical treatment.		
10.	Inform EMS personnel of contaminant involved and its hazards, if known.		
11.	Document activity log.		

<b>Nonambulatory Victims</b>			
1.	Ensure that all responders are wearing appropriate PPE for performing mass decontamination operations.		
2.	Establish mass decontamination corridor for nonambulatory decontamination according to the AHJ's SOPs.		
3.	Establish an initial triage point to evaluate and direct persons.		
4.	Perform lifesaving intervention.		
5.	Transfer the victim to the nonambulatory wash area of the decontamination station on an appropriate backboard/litter device.		
6.	Remove all clothing, jewelry, and personal belongings, and place in appropriate containers. Decontaminate as required, and safeguard. Use plastic bags with labels for identification.		
7.	Carefully undress nonambulatory persons, and avoid spreading the contamination when undressing. Do not touch the outside of the clothing to the skin. If biological agents are suspected, a fine water mist can be applied to trap the agent in the clothing and prevent the spread of contamination.		
8.	Completely wash the victim's entire body using handheld hoses, sponges, and/or brushes and then rinse.		
9.	Clean the victim's genital area, armpits, folds in the skin, and nails with special attention. If conscious, instruct the victim to close his/her mouth and eyes during wash and rinse procedures.		
10.	Transfer the victim from the wash and rinse stations to a drying station after completing the decontamination process. Ensure that the victim is completely dry.		
11.	Monitor for additional contamination using the appropriate detection device. <b>Note:</b> If contamination is detected, repeat decontamination wash and/or change decontamination method as appropriate.		
12.	Have on-scene medical personnel reevaluate the victim's injuries.		

## Skill Sheet 10-2

**Objective 8:** Perform technical decontamination operations in support of entry operations. *[NFPA<sup>®</sup> 472, 7.4.5(1)]*

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

### Directions

For this skills evaluation checklist, students will perform technical decontamination operations in support of entry operations. Always follow local standard operating procedures (SOPs) when performing all procedures.

### Resources

- Appropriate personal protective equipment (PPE)
- Tarps, salvage covers, or plastic sheeting
- Traffic cones, other means of marking corridor entrance
- Catch bins or wading pools
- Buckets, drums, or plastic containers for each drop station
- Large, heavy-duty trash bags
- Brushes, scrubbing utensils
- Portable sprayers
- Pumps
- Soap
- Hoses/water supply, hoseline attachments
- Appropriate monitoring/detection devices
- Tents
- Portable showers
- Bags and tags for personal property or evidence

---

**Criteria & Evaluation Comments**

---

Criteria (determined by the AHJ)

*After the candidate has completed the skill sheet, write comments below.*

Evaluator/Candidate Comments

Pass

Fail

---

Evaluator Signature

Date

---

Student Signature

Date

## Skills Evaluation Checklist

**Objective 8:** Perform technical decontamination operations in support of entry operations.

Task Steps		Yes	No
1.	Ensure that all responders are wearing appropriate PPE for establishing the decon corridor and performing technical decontamination operations.		
2.	Set up the decontamination corridor uphill and upwind from the hot zone, away from remote drains or waterways.		
3.	Mark entry and exit of decontamination corridor so that they are clearly identified.		
4.	Set up ground cover (tarp or salvage cover) for secondary contamination and runoff containment.		
5.	Establish a tool-drop station in the hot zone at the entry to the decontamination corridor. <b>Note:</b> The number of stations in the decon corridor will vary depending on the needs of the incident and local SOPs. Law enforcement personnel may need a separate decontamination station for tactical equipment.		
6.	Establish a gross decontamination station after the tool-drop station in the decontamination corridor.		
7.	Establish a secondary decontamination station including appropriate cleaning solution(s) as set forth by the haz mat technician, SOPs, or allied professional.		
8.	Establish a PPE removal station with waste disposal containers for contaminated PPE.		
9.	Establish a respiratory protection removal station. <b>Note:</b> Steps 8 and 9 may need to be reversed, depending on the PPE worn.		
10.	Establish an undergarment removal station with waste disposal containers for contaminated clothing.		
11.	Establish shower and clothing change station.		
12.	Establish a medical evaluation area.		
13.	Perform technical decontamination operations for persons according to assigned tasks and the AHJ's SOPs.		

## Skill Sheet 10-3

**Objective 9:** Perform technical decontamination operations involving ambulatory and nonambulatory victims. *[NFPA<sup>®</sup> 472, 7.4.5(2)]*

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

### Directions

For this skills evaluation checklist, students will perform technical decontamination on both ambulatory and nonambulatory victims. Always local standard operating procedures (SOPs) when performing all procedures.

### Resources

- Appropriate personal protective equipment (PPE)
- Tarps, salvage covers, or plastic sheeting
- Traffic cones, other means of marking corridor entrance
- Catch bins or wading pools
- Buckets, drums, or plastic containers for each drop station
- Brushes, scrubbing utensils
- Large, heavy-duty trash bags
- Portable sprayers
- Pumps
- Soap
- Hoses/water supply, hoseline attachments
- Appropriate monitoring/detection devices
- Tents
- Portable showers
- Bags and tags for personal property or evidence
- Towels
- Clean garments for victims to wear after showering
- Carts or skids
- Backboard or litter

---

**Criteria & Evaluation Comments**

---

Criteria (determined by the AHJ)

*After the candidate has completed the skill sheet, write comments below.*

Evaluator/Candidate Comments

Pass

Fail

---

Evaluator Signature

Date

---

Student Signature

Date

## Skills Evaluation Checklist

**Objective 9:** Perform technical decontamination operations involving ambulatory and nonambulatory victims.

Task Steps		Yes	No
<b>Ambulatory Victims</b>			
1.	Ensure that all responders are wearing appropriate PPE for performing technical decontamination operations.		
2.	Establish technical decontamination corridor for ambulatory decontamination according to the AHJ's SOPs. <b>Note:</b> Ensure that a privacy tent or station is provided for showering.		
3.	Establish an initial triage point to evacuate and direct persons.		
4.	Perform lifesaving intervention.		
5.	Instruct victim to remove potentially contaminated clothing and jewelry, ensuring he/she does not come in further contact with contaminants.		
6.	Instruct victim to undergo gross decontamination.		
7.	Instruct victim to undergo secondary decontamination wash.		
8.	Instruct victim to enter the privacy station, remove undergarments, and shower and wash thoroughly from the top down. <b>Note:</b> Do NOT ask members of the public to remove their clothes to shower unless complete privacy is provided.		
9.	Provide a clean garment for victim to wear after showering.		
10.	Monitor for additional contamination using the appropriate detection device. <b>Note:</b> If contamination is detected, repeat the decontamination sequence and/or change the decontamination method, as appropriate.		
11.	Proceed to the medical evaluation station.		

<b>Nonambulatory Victims</b>			
1.	Ensure that all responders are wearing appropriate PPE for performing technical decontamination operations.		
2.	Establish technical decontamination corridor for nonambulatory decontamination according to the AHJ's SOPs.		
3.	Establish an initial triage point to evaluate and direct persons.		
4.	Perform lifesaving intervention.		
5.	Transfer the victim to the nonambulatory wash area of the decontamination station on an appropriate backboard/litter device.		
6.	Remove all clothing, jewelry, and personal belongings, and place in appropriate containers. Decontaminate as required, and safeguard. Use plastic bags with labels for identification.		
7.	Carefully undress nonambulatory persons, and avoid spreading the contamination when undressing. Do not touch the outside of the clothing to the skin. If biological agents are suspected, a fine water mist can be applied to trap the agent in the clothing and prevent the spread of contamination.		
8.	Completely wash the victim's entire body using handheld hoses, sponges, and/or brushes and then rinse.		
9.	Clean the victim's genital area, armpits, folds in the skin, and nails with special attention. If conscious, instruct the victim to close his/her mouth and eyes during wash and rinse procedures.		
10.	Transfer the victim from the wash and rinse stations to a drying station after completing the decontamination process. Ensure that the victim is completely dry.		
11.	Monitor for additional contamination using the appropriate detection device. <b>Note:</b> If contamination is detected, repeat decontamination wash and/or change decontamination method, as appropriate.		
12.	Have on-scene medical personnel reevaluate the victim's injuries.		

# Skill Sheet 12-1

**Objective 9:** Control a leak using a dome cover clamp.  
[NFPA 472, 7.4.3(8)]

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

## Directions

For this skills evaluation checklist, students will control a leak using a dome cover clamp. . Always follow manufacturer's recommendations and local standard operating procedures (SOPs) when performing all procedures.

## Resources

- Appropriate personal protective equipment (PPE)
- Dome cover clamp
- Cargo tanker with dome cover, or suitable training prop

---

**Criteria & Evaluation Comments**

---

Criteria (determined by the AHJ)

*After the candidate has completed the skill sheet, write comments below.*

Evaluator/Candidate Comments

Pass

Fail

---

Evaluator Signature

Date

---

Student Signature

Date

## Skills Evaluation Checklist

**Objective 9:** Control a leak using a dome cover clamp.

Task Steps		Yes	No
<b>Determine the product and its hazards.</b>			
1.	Wearing the appropriate PPE, approach the location from uphill and upwind.		
2.	Observe any conditions that would indicate reactivity with the container or other products.		
3.	If product is flammable, ensure vapor suppression activities are in place and effectively controlling vapors to action levels established by the AHJ.		
4.	Avoid direct contact with the hazardous material to the extent possible.		
5.	If more than one dome lid is leaking, identify the order of installation that places the responders in the safest position.		
6.	Press on the dome lid's closure device to ensure that it is completely latched.		
7.	Slide the dome cover clamp around/onto the outer dome ring. Position the dome clamp legs evenly on the dome.		
8.	Position the clamp so that the adjustable screw leg is positioned over the center of the dome lid's closure device.		
9.	If the dome clamp is equipped with adjustable length legs, tighten the legs against the outer edge of the dome ring and tighten set screws.		
10.	Tighten the dome clamp center screw until the leak stops or the dome closure device is pressed firmly against the top of the lid.		
11.	Check to ensure that the flow of leaking product has stopped. Readjust the clamp if necessary.		

## Skill Sheet 12-2

**Objective 10:** Contain a leak from a fusible plug using an A-kit.  
[NFPA<sup>®</sup> 472, 7.4.3(1)]

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

### Directions

For this skills evaluation checklist, students will contain a leak from a fusible plug using an A-kit. Always follow manufacturer's recommendations and local standard operating procedures (SOPs) when performing all procedures.

### Resources

- Appropriate personal protective equipment (PPE)
- Aqua ammonia (ammonium hydroxide) squeeze bottle or suitable leak detection equipment
- Chlorine Institute Emergency Kit "A" (A-Kit)
- Chlorine Training Cylinder

---

**Criteria & Evaluation Comments**

---

Criteria (determined by the AHJ)

*After the candidate has completed the skill sheet, write comments below.*

Evaluator/Candidate Comments

Pass

Fail

---

Evaluator Signature

Date

---

Student Signature

Date

## Skills Evaluation Checklist

**Objective 10:** Contain a leak from a fusible plug using an A-kit.

**NOTE:** If more than one cylinder is present, attempt to locate the leaking cylinder by looking for vapors or by using an aqua ammonia (ammonium hydroxide) squeeze bottle to create a visible reaction (vapor cloud) prior to removing the cylinder's protective housing.

If the cylinder is connected to piping/process unit, close the valves that connect the cylinder to the process and turn off the process after consulting with the process owner/operator.

Task Steps		Yes	No
1.	Wearing appropriate PPE, approach the location from uphill and upwind.		
2.	Observe any conditions that would indicate reactivity with the cylinder or other products.		
3.	Remove valve protective housing from cylinder if in place.		
4.	Attempt to position cylinder so that valve is in the uppermost position.		
5.	Ensure that the gasket sealing surface of the fusible plug is clean.		
6.	Loosen the set screw in the clamping device and place the device over the leaking valve.		
7.	Place the gasket between the leaking fusible plug and the clamping device block.		
8.	Tighten the set screw until the leak stops.		
9.	Check for leakage using appropriate detection methods.		

# Skill Sheet 12-3

**Objective 11:** Contain a leak from a fusible plug using a B-kit.  
[NFPA<sup>®</sup> 472, 7.4.3(1)]

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

## Directions

For this skills evaluation checklist, students will contain a leak from a fusible plug using a B-kit. . Always follow manufacturer's recommendations and local standard operating procedures (SOPs) when performing all procedures.

## Resources

- Appropriate personal protective equipment (PPE)
- Aqua ammonia (ammonium hydroxide) squeeze bottle or suitable leak detection equipment
- Chlorine Institute Emergency Kit "B" (B-Kit)
- Chlorine One Ton Training Cylinder (or Cylinder End)

---

**Criteria & Evaluation Comments**

---

Criteria (determined by the AHJ)

*After the candidate has completed the skill sheet, write comments below.*

Evaluator/Candidate Comments

Pass

Fail

---

Evaluator Signature

Date

---

Student Signature

Date

## Skills Evaluation Checklist

**Objective 11:** Contain a leak from a fusible plug using a B-kit.

**NOTE:** If more than one container is present, attempt to locate the leaking container by looking for vapors or by using an aqua ammonia (ammonium hydroxide) squeeze bottle to create a visible reaction (vapor cloud) prior to removing the container's protective housing.

If the container is connected to piping/process unit, close the valves that connect the container to the process and turn off the process after consulting with the process owner/operator.

Task Steps		Yes	No
1.	Wearing appropriate PPE, approach the location from uphill and upwind.		
2.	Observe any conditions that would indicate reactivity with the container or other products.		
3.	Remove valve protective housing from container if in place.		
4.	Attempt to position container so that valve is in the uppermost position.		
5.	Fit yoke with stud over head of fusible plug.		
6.	Place gasket against face of fusible plug.		
7.	Tighten stud using wrench until the leak stops.		
8.	Check for leakage using appropriate detection methods.		

# Skill Sheet 12-4

**Objective 12:** Control a chlorine leak from fusible plug threads using an A-kit.  
[NFPA<sup>®</sup> 472, 7.4.3(1)]

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

## Directions

For this skills evaluation checklist, students will control a chlorine leak from fusible plug threads using an A-kit. . Always follow manufacturer's recommendations and local standard operating procedures (SOPs) when performing all procedures.

## Resources

- Appropriate personal protective equipment (PPE)
- Aqua ammonia (ammonium hydroxide) squeeze bottle or suitable leak detection equipment
- Chlorine Institute Emergency Kit "A" (A-Kit)
- Chlorine Training Cylinder

---

**Criteria & Evaluation Comments**

---

Criteria (determined by the AHJ)

*After the candidate has completed the skill sheet, write comments below.*

Evaluator/Candidate Comments

Pass

Fail

---

Evaluator Signature

Date

---

Student Signature

Date

## Skills Evaluation Checklist

**Objective 11:** Control a chlorine leak from fusible plug threads using an A-kit.

**NOTE:** If more than one cylinder is present, attempt to locate the leaking cylinder by looking for vapors or by using an aqua ammonia (ammonium hydroxide) squeeze bottle to create a visible reaction (vapor cloud) prior to removing the cylinder's protective housing.

If the cylinder is connected to piping/process unit, close the valves that connect the cylinder to the process and turn off the process after consulting with the process owner/operator.

Task Steps		Yes	No
1.	Wearing appropriate PPE, approach the location from uphill and upwind.		
2.	Observe any conditions that would indicate reactivity with the cylinder or other products.		
3.	Remove valve protective housing from cylinder if in place.		
4.	Attempt to position cylinder so that valve is in the uppermost position.		
5.	Use wrench to slowly tighten fusible plug.		
6.	If the leak is not controlled by applying pressure to the fusible plug, it will be necessary to clamp off the plug assembly.		
7.	Using a hacksaw, saw the fusible plug off flush with the valve body.		
8.	File the area until it is smooth.		
9.	Place a gasket between the leaking fusible plug and the clamping device block.		
10.	Tighten the set screw until the leak stops.		
11.	Check for leakage using appropriate detection methods.		

## Skill Sheet 12-5

**Objective 13:** Control a leak from fusible plug threads using a B-kit.  
[NFPA<sup>®</sup> 472, 7.4.3(1)]

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

### Directions

For this skills evaluation checklist, students will control a leak from fusible plug threads using a B-kit. Always follow manufacturer's recommendations and local standard operating procedures (SOPs) when performing all procedures.

### Resources

- Appropriate personal protective equipment (PPE)
- Aqua ammonia (ammonium hydroxide) squeeze bottle or suitable leak detection equipment
- Chlorine Institute Emergency Kit "B" (B-Kit)
- Chlorine One Ton Training Cylinder (or Cylinder End)

---

**Criteria & Evaluation Comments**

---

Criteria (determined by the AHJ)

*After the candidate has completed the skill sheet, write comments below.*

Evaluator/Candidate Comments

Pass

Fail

---

Evaluator Signature

Date

---

Student Signature

Date

## Skills Evaluation Checklist

**Objective 15:** Control a leak from fusible plug threads using a B-kit.

**NOTE:** If more than one container is present, attempt to locate the leaking container by looking for vapors or by using an aqua ammonia (ammonium hydroxide) squeeze bottle to create a visible reaction (vapor cloud) prior to removing the container's protective housing.

If the container is connected to piping/process unit, close the valves that connect the container to the process and turn off the process after consulting with the process owner/operator.

Task Steps		Yes	No
1.	Wearing appropriate PPE, approach the location from uphill and upwind.		
2.	Observe any conditions that would indicate reactivity with the container or other products.		
3.	Remove valve protective housing from container if in place.		
4.	Attempt to position container so that valve is in the uppermost position.		
5.	Use a scraper to remove loose or uneven paint (if present).		
6.	Place gasket on hood.		
7.	Fit yoke with stud over head of fusible plug.		
8.	Place hood with gasket over yoke and stud so that stud extends out of the top of the hood.		
9.	Place gasket over stud and screw cap nut onto stud.		
10.	Using a wrench, tighten cap nut firmly enough that leak stops.		
11.	Check for leakage using appropriate detection methods.		

## Skill Sheet 12-6

**Objective 14:** Control a chlorine leak from a cylinder sidewall using an A-kit.  
[NFPA<sup>®</sup> 472, 7.4.3(1)]

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

### Directions

For this skills evaluation checklist, students will control a chlorine leak from a cylinder sidewall using an A-kit. Always follow manufacturer's recommendations and local standard operating procedures (SOPs) when performing all procedures.

### Resources

- Appropriate personal protective equipment (PPE)
- Aqua ammonia (ammonium hydroxide) squeeze bottle or suitable leak detection equipment
- Chlorine Institute Emergency Kit "A" (A-Kit)
- Chlorine Training Cylinder

---

**Criteria & Evaluation Comments**

---

Criteria (determined by the AHJ)

*After the candidate has completed the skill sheet, write comments below.*

Evaluator/Candidate Comments

Pass

Fail

---

Evaluator Signature

Date

---

Student Signature

Date

## Skills Evaluation Checklist

**Objective 14:** Control a chlorine leak from a cylinder sidewall using an A-kit.

**NOTE:** If more than one cylinder is present, attempt to locate the leaking cylinder by looking for vapors or by using an aqua ammonia (ammonium hydroxide) squeeze bottle to create a visible reaction (vapor cloud) prior to removing the cylinder's protective housing.

If the cylinder is connected to piping/process unit, close the valves that connect the cylinder to the process and turn off the process after consulting with the process owner/operator.

Task Steps		Yes	No
1.	Wearing appropriate PPE, approach the location from uphill and upwind.		
2.	Observe any conditions that would indicate reactivity with the cylinder or other products.		
3.	Attempt to position cylinder so that the leak is in the uppermost position. Ensure that the cylinder wall around the leak is sound before proceeding with the repair.		
4.	Adjust screw cap in yoke until point of screw extends only slightly below the yoke.		
5.	Slip one end of the chain around the cylinder and pull it through until it reaches the approximate area of the leak, ensuring the chain is straight and not twisted.		
6.	Hook free ends of the chain to the ears on each side of the yoke, keeping chain as short as possible.		
7.	Use a scraper to remove loose or uneven paint (if present).		
8.	Slide the screw, yoke assembly, and patch over the leak.		
9.	Tighten cap screw to control leak.		
10.	Stop tightening the cap screw immediately if there is evidence that the cylinder wall is weakening.		
11.	Check for leakage using appropriate detection methods.		

## Skill Sheet 12-7

**Objective 15:** Control a leak from a cylinder sidewall using a B-kit.  
[NFPA<sup>®</sup> 472, 7.4.3(1)]

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

### Directions

For this skills evaluation checklist, students will control a leak from a cylinder sidewall using a B-kit.

### Resources

- Appropriate personal protective equipment (PPE)
- Aqua ammonia (ammonium hydroxide) squeeze bottle or suitable leak detection equipment
- Chlorine Institute Emergency Kit "B" (B-Kit)
- Chlorine One Ton Training Cylinder

---

**Criteria & Evaluation Comments**

---

Criteria (determined by the AHJ)

*After the candidate has completed the skill sheet, write comments below.*

Evaluator/Candidate Comments

Pass

Fail

---

Evaluator Signature

Date

---

Student Signature

Date

## Skills Evaluation Checklist

**Objective 15:** Control a leak from a cylinder sidewall using a B-kit.

**NOTE:** If more than one container is present, attempt to locate the leaking container by looking for vapors or by using an aqua ammonia (ammonium hydroxide) squeeze bottle to create a visible reaction (vapor cloud) prior to removing the container's protective housing.

If the container is connected to piping/process unit, close the valves that connect the container to the process and turn off the process after consulting with the process owner/operator.

Task Steps		Yes	No
1.	Wearing appropriate PPE, approach the location from uphill and upwind.		
2.	Observe any conditions that would indicate reactivity with the container or other products.		
3.	Attempt to position container so that the leak is in the uppermost position. Ensure that the container wall around the leak is sound before proceeding with the repair.		
4.	Adjust cap screw in yoke until the point of the screw extends only slightly below the yoke.		
5.	If the container is not on a rack or rails, place the container on planks or dig a trench under the container so the chain can be passed. Or place the chains on the ground and roll the container to a position where the chains can be linked together. Ensure the chain is straight and not twisted.		
6.	Center the cap screw and yoke in the patch depression.		
7.	Hook free ends of the chain to the ears on each side of the yoke, keeping the chain as short as possible.		
8.	Use a scraper to remove loose or uneven paint (if present).		
9.	Place the gasket and patch over leak.		
10.	Tighten cap screw to control the leak.		
11.	Stop tightening the cap screw immediately if there is evidence that the container wall is weakening.		
12.	Check for leakage using appropriate detection methods.		

# Skill Sheet 12-8

**Objective 15:** Control a chlorine leak from a valve blowout using an A-kit.  
[NFPA<sup>®</sup> 472, 7.4.3(1)]

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

## Directions

For this skills evaluation checklist, students will control a chlorine leak from a valve blowout using an A-kit. Always follow manufacturer's recommendations and local standard operating procedures (SOPs) when performing all procedures.

## Resources

- Appropriate personal protective equipment (PPE)
- Aqua ammonia (ammonium hydroxide) squeeze bottle or suitable leak detection equipment
- Chlorine Institute Emergency Kit "A" (A-Kit)
- Chlorine Training Cylinder

---

**Criteria & Evaluation Comments**

---

Criteria (determined by the AHJ)

*After the candidate has completed the skill sheet, write comments below.*

Evaluator/Candidate Comments

Pass

Fail

---

Evaluator Signature

Date

---

Student Signature

Date

## Skills Evaluation Checklist

**Objective 15:** Control a chlorine leak from a valve blowout using an A-kit.

**NOTE:** If more than one cylinder is present, attempt to locate the leaking cylinder by looking for vapors or by using an aqua ammonia (ammonium hydroxide) squeeze bottle to create a visible reaction (vapor cloud) prior to removing the cylinder's protective housing.

If the cylinder is connected to piping/process unit, close the valves that connect the cylinder to the process and turn off the process after consulting with the process owner/operator.

Task Steps		Yes	No
1.	Wearing appropriate PPE, approach the location from uphill and upwind.		
2.	Observe any conditions that would indicate reactivity with the cylinder or other products.		
3.	Remove valve protective housing from cylinder if in place.		
4.	Attempt to position cylinder so that valve is in the uppermost position and immediately drive large drift pin into valve opening.		
<b>Applying the "A" Kit Hood Device Assembly</b>			
5.	Position base assembly, checking to ensure stability of segments.		
6.	Secure ramp by hooking base segments together.		
7.	Carefully roll the cylinder up the ramp and center on the base assembly ensuring the drift pin is not dislodged and is never in line with any team member.		
8.	Use a scraper to remove loose or uneven paint on shoulder of cylinder (if present).		
9.	Place gasket on hood and ensure hood valve is in the open position.		
10.	Place the yoke in position on top of the hood. a. Ensure the chains are straight and not twisted and hook the chains over the yoke. b. Limit the amount of slack in the chain as much as possible.		
11.	Hand tighten the cap screws using equal and even force. Do not overtighten.		

---

12.	Close the hood vent valve slowly checking for leaks.		
13.	If the hood vent valve assembly still leaks, open the hood vent valve and tighten the cap screws until the leak is controlled. Avoid over tightening the cap screws because it may damage the gasket.		
14.	Check the foot ring at the bottom of the cylinder to ensure the chains are not breaking the ring.		
15.	Check for leakage using appropriate detection methods.		

# Skill Sheet 12-9

**Objective 17:** Control a leak from a valve blowout using a B-kit.  
[NFPA<sup>®</sup> 472, 7.4.3(1)]

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

## Directions

For this skills evaluation checklist, students will control a leak from a valve blowout using a B-kit. Always follow manufacturer's recommendations and local standard operating procedures (SOPs) when performing all procedures.

## Resources

- Appropriate personal protective equipment (PPE)
- Aqua ammonia (ammonium hydroxide) squeeze bottle or suitable leak detection equipment
- Chlorine Institute Emergency Kit "B" (B-Kit)
- Chlorine One Ton Training Cylinder (or Cylinder End)

---

**Criteria & Evaluation Comments**

---

Criteria (determined by the AHJ)

*After the candidate has completed the skill sheet, write comments below.*

Evaluator/Candidate Comments

Pass

Fail

---

Evaluator Signature

Date

---

Student Signature

Date

## Skills Evaluation Checklist

**Objective 17:** Control a leak from a valve blowout using a B-kit.

**NOTE:** If more than one container is present, attempt to locate the leaking container by looking for vapors or by using an aqua ammonia (ammonium hydroxide) squeeze bottle to create a visible reaction (vapor cloud) prior to removing the container's protective housing.

If the cylinder is connected to piping/process unit, close the valves that connect the container to the process and turn off the process after consulting with the process owner/operator.

Task Steps		Yes	No
1.	Wearing appropriate PPE, approach the location from uphill and upwind.		
2.	Observe any conditions that would indicate reactivity with the container or other products.		
3.	Remove valve protective housing from container if in place.		
4.	Attempt to position container so that leaking valve is in the uppermost position and immediately drive large drift pin into valve opening.		
5.	Check for leakage using appropriate detection methods.		

## Skill Sheet 12-10

**Objective 18:** Control a chlorine leak from a valve gland using a C-kit.  
[NFPA<sup>®</sup> 472, 7.4.3(1)]

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

### Directions

For this skills evaluation checklist, students will control a chlorine leak from a valve gland using a C-kit. Always follow manufacturer's recommendations and local standard operating procedures (SOPs) when performing all procedures.

### Resources

- Appropriate personal protective equipment (PPE)
- Chlorine Institute Emergency Kit "C" ("C" Kit)
- Tank car training dome
- Suitable leak detection equipment

---

**Criteria & Evaluation Comments**

---

Criteria (determined by the AHJ)

*After the candidate has completed the skill sheet, write comments below.*

Evaluator/Candidate Comments

Pass

Fail

---

Evaluator Signature

Date

---

Student Signature

Date

## Skills Evaluation Checklist

**Objective 18:** Control a chlorine leak from a valve gland using a C-kit.

Task Steps		Yes	No
1.	Wearing appropriate PPE, approach the location from uphill and upwind.		
2.	Observe any conditions that would indicate reactivity with the container or other products.		
3.	Remove seal and open dome lid.		
4.	Close valve by hand or use handwheel spanner device with wrench bar adapter.		
5.	Using wrench, firmly tighten the packing nut without over tightening.		
6.	Test for leaks.		
7.	If leak persists, apply C-Kit hood device assembly.		

# Skill Sheet 12-11

**Objective 19:** Control a chlorine leak from valve inlet threads using an A-kit.  
[NFPA<sup>®</sup> 472, 7.4.3(1)]

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

## Directions

For this skills evaluation checklist, students will control a chlorine leak from valve inlet threads using an A-kit. Always follow manufacturer's recommendations and local standard operating procedures (SOPs) when performing all procedures.

## Resources

- Appropriate personal protective equipment (PPE)
- Aqua ammonia (ammonium hydroxide) squeeze bottle or suitable leak detection equipment
- Chlorine Institute Emergency Kit "A" (A-Kit)
- Chlorine Training Cylinder

---

**Criteria & Evaluation Comments**

---

Criteria (determined by the AHJ)

*After the candidate has completed the skill sheet, write comments below.*

Evaluator/Candidate Comments

Pass

Fail

---

Evaluator Signature

Date

---

Student Signature

Date

## Skills Evaluation Checklist

**Objective 19:** Control a chlorine leak from valve inlet threads using an A-kit.

**NOTE:** If more than one cylinder is present, attempt to locate the leaking cylinder by looking for vapors or by using an aqua ammonia (ammonium hydroxide) squeeze bottle to create a visible reaction (vapor cloud) prior to removing the cylinder's protective housing.

If the cylinder is connected to piping/process unit, close the valves that connect the cylinder to the process and turn off the process after consulting with the process owner/operator.

Task Steps		Yes	No
1.	Wearing appropriate PPE, approach the location from uphill and upwind.		
2.	Observe any conditions that would indicate reactivity with the cylinder or other products.		
3.	Remove valve protective housing from cylinder if in place.		
4.	Attempt to position cylinder so that valve is in the uppermost position.		
5.	Using a wrench, slowly tighten the valve into the cylinder using steady, even pressure.		
6.	If leak persists, apply hood device assembly as detailed in <b>Skill Sheet 11-8</b> .		

# Skill Sheet 12-12

**Objective 20:** Control a leak from valve inlet threads using a B-kit.  
[NFPA<sup>®</sup> 472, 7.4.3(1)]

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

## Directions

For this skills evaluation checklist, students will control a leak from valve inlet threads using a B-kit. Always follow manufacturer's recommendations and local standard operating procedures (SOPs) when performing all procedures.

## Resources

- Appropriate personal protective equipment (PPE)
- Aqua ammonia (ammonium hydroxide) squeeze bottle or suitable leak detection equipment
- Chlorine Institute Emergency Kit "B" (B-Kit)
- Chlorine One Ton Training Cylinder (or Cylinder End)

---

**Criteria & Evaluation Comments**

---

Criteria (determined by the AHJ)

*After the candidate has completed the skill sheet, write comments below.*

Evaluator/Candidate Comments

Pass

Fail

---

Evaluator Signature

Date

---

Student Signature

Date

## Skills Evaluation Checklist

**Objective 20:** Control a leak from valve inlet threads using a B-kit.

**NOTE:** If more than one container is present, attempt to locate the leaking container by looking for vapors or by using an aqua ammonia (ammonium hydroxide) squeeze bottle to create a visible reaction (vapor cloud) prior to removing the container's protective housing.

If the container is connected to piping/process unit, close the valves that connect the container to the process and turn off the process after consulting with the process owner/operator.

Task Steps		Yes	No
1.	Wearing appropriate PPE, approach the location from uphill and upwind.		
2.	Observe any conditions that would indicate reactivity with the container or other products.		
3.	Remove valve protective housing from container if in place.		
4.	Attempt to position container so that valve is in the uppermost position.		
5.	Using a wrench, slowly tighten the valve into the container using steady, even pressure.		
6.	Check for leakage using appropriate detection methods.		
7.	If leak persists, apply hood device assembly.		
<b>Applying the "B" Kit Hood Assembly Device</b>			
8.	Remove outlet cap from vent valve on hood and open valve.		
9.	Loosen adjusting screws and retract jack screws sufficiently to allow insertion of adjustable bar assembly behind the chime of the container.		
10.	Place adjustable bar assembly in vertical position to make adjustments.		
11.	Use a scraper to remove loose or uneven paint (if present).		
12.	Inspect and place the gasket on the hood and then the hood and gasket over the leaking valve. For containers with a ridge between the valves, use the molded gasket with the depression placed over the ridge.		

---

13.	Adjust lower jack screw to center one cap screw over the hood and adjust the upper jack screw so that the adjustable bar assembly fits tightly inside the chime. Use a wrench to tighten the adjusting screws.		
14.	Use a wrench to tighten the cap screw, forcing the hood and gasket against the head of the container. Tighten just enough to stop the leak.		
15.	Close vent valve slowly and check for leaks.		
16.	If the leak persists, open the vent valve and use a wrench to further tighten the cap screw until the leak is controlled.		

## Skill Sheet 12-13

**Objective 21:** Control a chlorine leak from a valve seat using an A-kit.  
[NFPA<sup>®</sup> 472, 7.4.3(1)]

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

### Directions

For this skills evaluation checklist, students will control a chlorine leak from a valve set using an A-kit. Always follow manufacturer's recommendations and local standard operating procedures (SOPs) when performing all procedures.

### Resources

- Appropriate personal protective equipment (PPE)
- Aqua ammonia (ammonium hydroxide) squeeze bottle or suitable leak detection equipment
- Chlorine Institute Emergency Kit "A" (A-Kit)
- Chlorine Training Cylinder

---

**Criteria & Evaluation Comments**

---

Criteria (determined by the AHJ)

*After the candidate has completed the skill sheet, write comments below.*

Evaluator/Candidate Comments

Pass

Fail

---

Evaluator Signature

Date

---

Student Signature

Date

## Skills Evaluation Checklist

**Objective 21:** Control a chlorine leak from a valve seat using an A-kit.

**NOTE:** If more than one cylinder is present, attempt to locate the leaking cylinder by looking for vapors or by using an aqua ammonia (ammonium hydroxide) squeeze bottle to create a visible reaction (vapor cloud) prior to removing the cylinder's protective housing.

If the cylinder is connected to piping/process unit, close the valves that connect the cylinder to the process and turn off the process after consulting with the process owner/operator.

Task Steps		Yes	No
1.	Wearing appropriate PPE, approach the location from uphill and upwind.		
2.	Observe any conditions that would indicate reactivity with the cylinder or other products.		
3.	Remove valve protective housing from cylinder if in place.		
4.	Attempt to position cylinder so that valve is in the uppermost position.		
5.	If the cylinder is disconnected from a process and can be reconnected, reconnect and gently open and close the valve stem to dislodge foreign matter from the seat using the valve handle or a wrench.		
6.	If the cylinder is not connected to a process or cannot be reconnected, apply an outlet cap and gasket screw and tighten with wrench.		
7.	If leak persists, apply hood device assembly as detailed in <b>Skill Sheet 11-8</b> .		

## Skill Sheet 12-14

**Objective 22:** Control a leak from a valve seat using a B-kit.  
[NFPA<sup>®</sup> 472, 7.4.3(1)]

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

### Directions

For this skills evaluation checklist, students will control a leak from a valve set using a B-kit. Always follow manufacturer's recommendations and local standard operating procedures (SOPs) when performing all procedures.

### Resources

- Appropriate personal protective equipment (PPE)
- Aqua ammonia (ammonium hydroxide) squeeze bottle or suitable leak detection equipment
- Chlorine Institute Emergency Kit "B" (B-Kit)
- Chlorine One Ton Training Cylinder (or Cylinder End)

---

**Criteria & Evaluation Comments**

---

Criteria (determined by the AHJ)

*After the candidate has completed the skill sheet, write comments below.*

Evaluator/Candidate Comments

Pass

Fail

---

Evaluator Signature

Date

---

Student Signature

Date

## Skills Evaluation Checklist

**Objective 22:** Control a leak from a valve seat using a B-kit.

**NOTE:** If more than one container is present, attempt to locate the leaking container by looking for vapors or by using an aqua ammonia (ammonium hydroxide) squeeze bottle to create a visible reaction (vapor cloud) prior to removing the container's protective housing.

If the container is connected to piping/process unit, close the valves that connect the container to the process and turn off the process after consulting with the process owner/operator.

Task Steps		Yes	No
1.	Wearing appropriate PPE, approach the location from uphill and upwind.		
2.	Observe any conditions that would indicate reactivity with the container or other products.		
3.	Remove valve protective housing from container if in place.		
4.	Attempt to position container so that valve is in the uppermost position.		
5.	If the container is disconnected from a process and can be reconnected, reconnect and gently open and close the valve stem to dislodge foreign matter from the seat using the valve handle or a wrench.		
6.	If the container is not connected to a process or cannot be reconnected, apply an outlet cap and gasket screw.		
7.	Check for leakage using appropriate detection methods.		
8.	If leak persists, apply hood device assembly as detailed in <b>Skill Sheet 11-12</b> .		

## Skill Sheet 12-15

**Objective 23:** Control a chlorine leak from a valve stem blowout using an A-kit.  
[NFPA<sup>®</sup> 472, 7.4.3(1)]

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

### Directions

For this skills evaluation checklist, students will control a chlorine leak from a valve stem blowout using an A-kit. Always follow manufacturer's recommendations and local standard operating procedures (SOPs) when performing all procedures.

### Resources

- Appropriate personal protective equipment (PPE)
- Aqua ammonia (ammonium hydroxide) squeeze bottle or suitable leak detection equipment
- Chlorine Institute Emergency Kit "A" (A-Kit)
- Chlorine Training Cylinder

---

**Criteria & Evaluation Comments**

---

Criteria (determined by the AHJ)

*After the candidate has completed the skill sheet, write comments below.*

Evaluator/Candidate Comments

Pass

Fail

---

Evaluator Signature

Date

---

Student Signature

Date

## Skills Evaluation Checklist

**Objective 23:** Control a chlorine leak from a valve stem blowout using an A-kit.

**NOTE:** If more than one cylinder is present, attempt to locate the leaking cylinder by looking for vapors or by using an aqua ammonia (ammonium hydroxide) squeeze bottle to create a visible reaction (vapor cloud) prior to removing the cylinder's protective housing.

If the cylinder is connected to piping/process unit, close the valves that connect the cylinder to the process and turn off the process after consulting with the process owner/operator.

Task Steps		Yes	No
1.	Wearing appropriate PPE, approach the location from uphill and upwind.		
2.	Observe any conditions that would indicate reactivity with the cylinder or other products.		
3.	Remove valve protective housing from cylinder if in place.		
4.	Attempt to position cylinder so that valve is in the uppermost position and immediately drive small drift pin into valve body.		
5.	Apply hood device assembly as detailed in <b>Skill Sheet 11-8</b> .		

# Skill Sheet 12-16

**Objective 24:** Control a leak from a valve stem blowout using a B-kit.  
[NFPA<sup>®</sup> 472, 7.4.3(1)]

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

## Directions

For this skills evaluation checklist, students will control a leak from a valve stem blowout using a B-kit.

## Resources

- Appropriate personal protective equipment (PPE)
- Aqua ammonia (ammonium hydroxide) squeeze bottle or suitable leak detection equipment
- Chlorine Institute Emergency Kit "B" (B-Kit)
- Chlorine One Ton Training Cylinder (or Cylinder End)

---

**Criteria & Evaluation Comments**

---

Criteria (determined by the AHJ)

*After the candidate has completed the skill sheet, write comments below.*

Evaluator/Candidate Comments

Pass

Fail

---

Evaluator Signature

Date

---

Student Signature

Date

## Skills Evaluation Checklist

**Objective 24:** Control a leak from a valve stem blowout using a B-kit.

**NOTE:** If more than one container is present, attempt to locate the leaking container by looking for vapors or by using an aqua ammonia (ammonium hydroxide) squeeze bottle to create a visible reaction (vapor cloud) prior to removing the container's protective housing.

If the container is connected to piping/process unit, close the valves that connect the container to the process and turn off the process after consulting with the process owner/operator.

Task Steps		Yes	No
1.	Wearing appropriate PPE, approach the location from uphill and upwind.		
2.	Observe any conditions that would indicate reactivity with the container or other products.		
3.	Remove valve protective housing from container if in place.		
4.	Attempt to position container so that valve is in the uppermost position and immediately drive small drift pin into valve body.		
5.	Check for leakage using appropriate detection methods.		

# Skill Sheet 12-17

**Objective 25:** Contain a drum leak from a bung.  
[NFPA<sup>®</sup> 472, 7.4.3(3)]

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

## Directions

For this skills evaluation checklist, students will contain a drum leak from a bung. Always follow local standard operating procedures (SOPs) when performing all procedures.

## Resources

- Appropriate personal protective equipment (PPE)
- Appropriate tool
- Appropriate monitoring equipment
- Drum with bung

### Criteria & Evaluation Comments

---

Criteria (determined by the AHJ)

*After the candidate has completed the skill sheet, write comments below.*

Evaluator/Candidate Comments

Pass

Fail

---

Evaluator Signature

Date

---

Student Signature

Date

## Skills Evaluation Checklist

**Objective 25:** Contain a drum leak from a bung.

Task Steps		Yes	No
1.	Determine the product and its hazards.		
2.	Wearing the appropriate PPE, approach the location from uphill and upwind.		
3.	Observe any conditions that would indicate reactivity with the container or other products.		
4.	If product is flammable, ensure vapor suppression activities are in place and effectively controlling vapors below the action levels established by the AHJ.		
5.	Avoid direct contact with the hazardous material to the extent possible.		
6.	Determine the location of the leak.		
7.	Attempt to reduce (or stop) the leak by uprighting the drum or positioning the leak at the highest point.		
8.	Using the proper tool, tighten the bung.		
9.	Check the drum to ensure the leak has stopped.		
10.	Overpack the drum using one of the methods listed in <b>Skill Sheets 11-21, 11-22, or 11-23.</b>		

# Skill Sheet 12-18

**Objective 26:** Control a drum leak from a chime.  
[NFPA<sup>®</sup> 472, 7.4.3(3)]

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

## Directions

For this skills evaluation checklist, students will contain a drum leak from a chime. Always follow local standard operating procedures (SOPs) when performing all procedures.

## Resources

- Appropriate personal protective equipment (PPE)
- Appropriate tools
- Plugging or patching materials
- Drum with chime

---

**Criteria & Evaluation Comments**

---

Criteria (determined by the AHJ)

*After the candidate has completed the skill sheet, write comments below.*

Evaluator/Candidate Comments

Pass

Fail

---

Evaluator Signature

Date

---

Student Signature

Date

## Skills Evaluation Checklist

**Objective 26:** Control a drum leak from a chime.

Task Steps		Yes	No
1.	Determine the product and its hazards.		
2.	Wearing the appropriate PPE, approach the location from uphill and upwind.		
3.	Observe any conditions that would indicate reactivity with the container or other products.		
4.	If product is flammable, ensure vapor suppression activities are in place and effectively controlling vapors below the action levels established by the AHJ.		
5.	Avoid direct contact with the hazardous material to the extent possible.		
6.	Determine the location of the leak.		
7.	Select and use plugging or patching material that is compatible with the hazardous material.		
8.	Check the drum to ensure the leak has stopped.		

# Skill Sheet 12-19

**Objective 27:** Control a drum leak from a forklift puncture.  
[NFPA<sup>®</sup> 472, 7.4.3(3)]

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

## Directions

For this skills evaluation checklist, students will contain a drum leak from a forklift puncture. Always follow local standard operating procedures (SOPs) when performing all procedures.

## Resources

- Appropriate personal protective equipment (PPE)
- Appropriate tools
- Wedges and/or other plugging and patching materials
- Drum

### Criteria & Evaluation Comments

---

Criteria (determined by the AHJ)

*After the candidate has completed the skill sheet, write comments below.*

Evaluator/Candidate Comments

Pass

Fail

---

Evaluator Signature

Date

---

Student Signature

Date

## Skills Evaluation Checklist

**Objective 27:** Control a drum leak from a forklift puncture.

Task Steps		Yes	No
1.	Determine the product and its hazards.		
2.	Wearing the appropriate PPE, approach the location from uphill and upwind.		
3.	Observe any conditions that would indicate reactivity with the container or other products.		
4.	If product is flammable, ensure vapor suppression activities are in place and effectively controlling vapors below the action levels established by the AHJ.		
5.	Avoid direct contact with the hazardous material to the extent possible.		
6.	Determine the location of the leak.		
7.	Attempt to reduce (or stop) the leak by uprighting the drum or positioning the leak at the highest point.		
8.	Use the proper tools and equipment to completely stop the leak.		
9.	Overpack the drum using one of the methods listed in <b>Skill Sheets 11-21, 11-22, or 11-23.</b>		

# Skill Sheet 12-20

**Objective 28:** Control a drum leak from a nail puncture.  
[NFPA<sup>®</sup> 472, 7.4.3(3)]

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

## Directions

For this skills evaluation checklist, students will contain a drum leak from a nail puncture. Always follow local standard operating procedures (SOPs) when performing all procedures.

## Resources

- Appropriate personal protective equipment (PPE)
- Appropriate tools
- Wooden wedges and/or other plugging and patching materials
- Drum

---

**Criteria & Evaluation Comments**

---

Criteria (determined by the AHJ)

*After the candidate has completed the skill sheet, write comments below.*

Evaluator/Candidate Comments

Pass

Fail

---

Evaluator Signature

Date

---

Student Signature

Date

## Skills Evaluation Checklist

**Objective 28:** Control a drum leak from a nail puncture.

Task Steps		Yes	No
1.	Determine the product and its hazards.		
2.	Wearing the appropriate PPE, approach the location from uphill and upwind.		
3.	Observe any conditions that would indicate reactivity with the container or other products.		
4.	If product is flammable, ensure vapor suppression activities are in place and effectively controlling vapors below the action levels established by the AHJ.		
5.	Avoid direct contact with the hazardous material to the extent possible.		
6.	Determine the location of the leak.		
7.	Attempt to reduce (or stop) the leak by uprighting the drum or positioning the leak at the highest point.		
8.	Using appropriate equipment and materials, completely stop the leak by inserting a plug or applying a patch.		

# Skill Sheet 12-21

**Objective 29:** Overpack a drum using the slide-in method.  
[NFPA<sup>®</sup> 472, 7.4.3(4)]

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

## Directions

For this skills evaluation checklist, students will overpack a drum using a slide-in method. Always follow local standard operating procedures (SOPs) when performing all procedures.

## Resources

- Appropriate personal protective equipment (PPE)
- Drum
- Overpack drum
- Drum handling equipment
- Board or piece of pipe
- Labeling material

---

**Criteria & Evaluation Comments**

---

Criteria (determined by the AHJ)

*After the candidate has completed the skill sheet, write comments below.*

Evaluator/Candidate Comments

Pass

Fail

---

Evaluator Signature

Date

---

Student Signature

Date

## Skills Evaluation Checklist

**Objective 29:** Overpack a drum using the slide-in method.

Task Steps		Yes	No
1.	Wearing the appropriate PPE, approach the location from uphill and upwind.		
2.	Avoid direct contact with the hazardous material to the extent possible, including residue on the patched drum.		
3.	Avoid placing hands in pinch-point areas while maneuvering the drums.		
4.	Place the damaged drum on its side using safe lifting techniques.		
5.	Using a wooden wedge, roll the drum onto a board or piece of pipe.		
6.	With the damaged drum resting on the board or pipe, position the overpack drum so its open top slides under the damaged drum by several inches.		
7.	One team member holds the overpack drum in place while the other member grasps the top of the damaged drum and rolls/slides it on the pipe into the overpack drum.		
8.	Lift the overpack drum into an upright position using safe lifting techniques and attach the overpack drum lid.		
9.	Label the overpack drum with a description of its contents.		

## Skill Sheet 12-22

**Objective 30:** Overpack a drum using the rolling slide-in method.  
[NFPA<sup>®</sup> 472, 7.4.3(4)]

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

### Directions

For this skills evaluation checklist, students will rolling slide-in method. Always follow local standard operating procedures (SOPs) when performing all procedures.

### Resources

- Appropriate personal protective equipment (PPE)
- Patched drum
- Overpack drum
- Labeling material

---

**Criteria & Evaluation Comments**

---

Criteria (determined by the AHJ)

*After the candidate has completed the skill sheet, write comments below.*

Evaluator/Candidate Comments

Pass

Fail

---

Evaluator Signature

Date

---

Student Signature

Date

## Skills Evaluation Checklist

**Objective 30:** Overpack a drum using the rolling slide-in method.

Task Steps		Yes	No
1.	Wearing the appropriate PPE, approach the location from uphill and upwind.		
2.	Avoid direct contact with the hazardous material to the extent possible, including residue on the patched drum.		
3.	Avoid placing hands in pinch-point areas while maneuvering the drums.		
4.	Place the damaged drum on its side using safe lifting techniques.		
5.	With the damaged drum on its side, position the overpack drum at approximately 30 degrees to the base of the damaged drum.		
6.	Ensure that the area in front of the drums is clear of obstructions.		
7.	Roll both drums so that the damaged drum is inserted into the overpack drum.		
8.	Lift the overpack drum into an upright position using safe lifting techniques and attach the overpack drum lid.		
9.	Label the overpack drum with a description of its contents.		

## Skill Sheet 12-23

**Objective 31:** Overpack a drum using the slip-over method.  
[NFPA<sup>®</sup> 472, 7.4.3(4)]

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

### Directions

For this skills evaluation checklist, students will overpack a drum using the slip-over method. Always follow local standard operating procedures (SOPs) when performing all procedures.

### Resources

- Appropriate personal protective equipment (PPE)
- Patched drum
- Overpack drum
- Labeling material

---

**Criteria & Evaluation Comments**

---

Criteria (determined by the AHJ)

*After the candidate has completed the skill sheet, write comments below.*

Evaluator/Candidate Comments

Pass

Fail

---

Evaluator Signature

Date

---

Student Signature

Date

## Skills Evaluation Checklist

**Objective 31:** Overpack a drum using the slip-over method.

Task Steps		Yes	No
1.	Wearing the appropriate PPE, approach the location from uphill and upwind.		
2.	Avoid direct contact with the hazardous material to the extent possible, including residue on the patched drum.		
3.	Avoid placing hands in pinch-point areas while maneuvering the drums.		
4.	Stand the damaged drum using safe lifting techniques.		
5.	Turn overpack drum upside down and place over the damaged drum.		
6.	With the damaged drum inside the overpack drum, carefully lay the overpack drum on its side.		
7.	Lift the overpack drum into an upright position using safe lifting techniques and attach the overpack drum lid.		
8.	Label the overpack drum with a description of its contents.		

