

Refrigerant Recovery, Recycling, and Handling

Student/intern information:

Name _____ Date _____ Class _____

Vehicle used for this activity:

Year _____ Make _____ Model _____

Odometer _____ VIN _____

Learning Objective/Task (General Electrical Systems)	2007 NATEF Reference Number	2007 NATEF Priority Level
• Maintain and verify correct operation of certified equipment.	6E1	P-1
• Identify and recover A/C system refrigerant.	6E2	P-1
• Recycle or properly dispose of refrigerant.	6E3	P-1
• Handle, label, and store refrigerant.	6E4	P-1
• Test recycled refrigerant for non-condensable gases.	6E5	P-1

Time off _____

Time on _____

Total time _____

Recommended Resource Materials

- CDX Automotive program
- CDX eTextbook
- Technical service bulletins, shop manuals, and any other information applicable to the specific vehicle or components
- Class notes

Materials Required

- Vehicle manufacturer's workshop manual including HVAC information
- MSDS for refrigerants
- Specialized HVAC tools including refrigerant recovery, vacuum pump, recharging station, and thermometer
- Automotive hand tools
- Refrigerant

Some Safety Issues to Consider

- You will be required to handle refrigerant. Use extreme caution: refrigerant is pressurized and very cold. Always wear eye protection and appropriate clothing when working with refrigerant. Never inhale refrigerant.
- Do not release refrigerant to the atmosphere; always use a recycling system to reclaim refrigerant.
- Comply with personal and environmental safety practices associated with clothing; eye protection; hand tools; power equipment; proper ventilation; and the handling, storage, and disposal of chemicals/materials in accordance with federal, state, and local regulations.
- Always wear the correct protective eyewear and clothing and use the appropriate safety equipment, as well as fender covers, seat protectors, and floor mat protectors.
- Make sure you understand and observe all legislative and personal safety procedures when carrying out practical assignments. If you are unsure of what these are, ask your supervisor/instructor.

Performance Standard

0—No exposure: No information or practice provided during the program; complete training required

1—Exposure only: General information provided with no practice time; close supervision needed; additional training required

2—Limited practice: Has practiced job during training program; additional training required to develop skill

3—Moderately skilled: Has performed job independently during training program; limited additional training may be required

4—Skilled: Can perform job independently with no additional training

▶ TASK Maintain and verify correct operation of certified equipment.

6E1

1. Research how to maintain and verify correct operation of certified equipment and list the findings below:

Time off _____
Time on _____
Total time _____

2. Check your documented procedures with your supervisor/instructor.

Supervisor/instructor's initials: _____

3. Using the appropriate information, maintain and verify correct operation of certified equipment.

4. List any issues found with the operation of certified equipment:

5. Determine and list any necessary corrective action(s):

6. Return certified equipment to beginning condition and return any tools that you may have used to their proper locations.

7. Discuss the findings with the instructor.

Performance Rating

2007 NATEF Reference Number: 6E1

0

1

2

3

4

Supervisor/instructor signature _____ Date _____

▶ TASK Identify and recover A/C system refrigerant.

6E2

1. Research how to identify and recover A/C system refrigerant in an appropriate service information for the vehicle you are working on and list below:

- a. How to identify A/C refrigerant type:

Time off _____
Time on _____
Total time _____

b. List the procedure for recovering refrigerant:

2. Check your documented procedures with your supervisor/instructor.

Supervisor/instructor's initials: _____

3. Ask your supervisor/instructor for a vehicle or simulator to identify and recover refrigerant.

4. Using the appropriate service information, identify and recover refrigerant.

5. List the results of identifying and recovering refrigerant:

a. The type of refrigerant:

b. The amount of refrigerant recovered:

c. The amount of oil removed from the system:

6. Return the vehicle to beginning condition and return any tools that you may have used to their proper locations.

7. Discuss the findings with the instructor.

Performance Rating

2007 NATEF Reference Number: 6E2

0

1

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3

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Supervisor/instructor signature _____ Date _____

▶ TASK Recycle or properly dispose of refrigerant.

6E3

1. Research how to recycle or properly dispose of refrigerant in an appropriate service information for the vehicle you are working on, and list the procedure below:

2. Check your documented procedures with your supervisor/instructor.

Supervisor/instructor's initials: _____

3. Recycle or properly dispose of refrigerant.

4. List the steps you undertook to recycle or properly dispose of refrigerant:

5. Discuss the findings with the instructor.

Performance Rating

2007 NATEF Reference Number: 6E3

0

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2

3

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Supervisor/instructor signature _____ Date _____

▶ TASK Handle, label, and store refrigerant.

6E4

1. Research how to handle, label, and store refrigerant in appropriate service information and MSDS for the types of refrigerant in your workshop and list them below:

- a. Handling requirements:

- b. PPE required when handling refrigerant:

- c. How is refrigerant labelled:

Time off _____

Time on _____

Total time _____

Time off _____

Time on _____

Total time _____

d. How is refrigerant to be stored:

2. Check your documented procedures with your supervisor/instructor.

Supervisor/instructor's initials: _____

3. Handle, label, and store refrigerant according to manufacturer's and workshop requirements.

4. Ensure refrigerant is returned to storage area.

5. Discuss the findings with the instructor.

Performance Rating

2007 NATEF Reference Number: 6E4

0

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3

4

Supervisor/instructor signature _____ Date _____

► TASK Test recycled refrigerant for non-condensable gases.

6E5

1. Research how to test recycled refrigerant for non-condensable gases in an appropriate service information and list the procedure below:

Time off _____

Time on _____

Total time _____

2. Check your documented procedures with your supervisor/instructor.

Supervisor/instructor's initials: _____

3. Ask your supervisor/instructor for recycled refrigerant to test for non-condensable gases.

4. Using the appropriate service information, test recycled refrigerant for non-condensable gases.

5. List the results of conducting your test:

6. Determine and list any necessary action(s):

7. Return the recycled refrigerant and tools to appropriate storage areas.

8. Discuss the findings with the instructor.

Performance Rating

2007 NATEF Reference Number: 6E5

0

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2

3

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Supervisor/instructor signature _____ Date _____