# WORKSHEET

☐ ASME Dataplate present and legible.
☐ ASME Dataplate NOT present or legible.

Use this worksheet to document NTIP tests/inspections for anhydrous ammonia vessels. (Does not include trailers/running gears.)

| 1. ORIGIN INFORMATION (OPTIONAL) | 2. NTIP NUMBER |
|---|---|
| SERIAL NO.: _____<br>MANUFACTURER: _____<br>DATE MANUFACTURED: _____ | |
| 3. CAPACITY (Gallons as Calculated) | 4. TANK IDENTIFICATION |

| 5. OWNER | 6. FACILITY NO. | 8. ADDRESS (No PO Boxes) | 9. CITY | 10. STATE | 11. ZIP CODE |
|---|---|---|---|---|---|
| | | | | | |

## 12. EXTERNAL VISUAL (V)

| PASS | FAIL | CHECKLIST-INSPECTED/TESTED |
|---|---|---|
| | | a. Tank Shell |
| | | b. Tank Heads |
| | | c. Head-to-Shell Seam |
| | | d. Valves |
| | | e. Piping |
| | | f. Suspension System Attachments |
| | | g. Connecting Structures |
| | | h. Corroded/Abraded Areas |
| | | i. Distortions |
| | | j. Dents |
| | | k. Welds |
| | | l. Nuts & Bolts |
| | | (Placards) |
| | | |
| | | |
| | | |

15. REPAIRS (

17. ADDRESS

18. CITY, ST

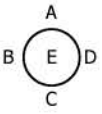
19. (CHECK AS APPROPRIATE)
☐ ABOVE DEFECTS CORRECTED
☐ ABOVE DEFECTS NEED NOT BE CORRECTED
INSPECTOR'S INITIALS: _____
Remarks:

## 13. THICKNESS (T)

HEAD THICKNESS TEST POINTS:

| | FRONT | REAR |
|---|---|---|
| (A) | _____ | _____ |
| (B) | _____ | _____ |
| (C) | _____ | _____ |
| (D) | _____ | _____ |
| (E) | _____ | _____ |

END KEY




LIQUID LEVEL LINE TEST POINTS:

| | LEFT | RIGHT |
|---|---|---|
| (F) | _____ | |
| (G) | _____ | |
| (H) | _____ | |

ARO ING OTH

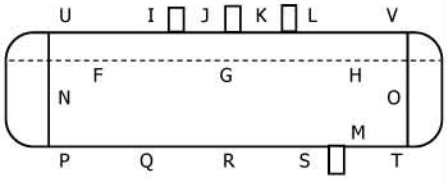
| | | |
|---|---|---|
| (I) | | |
| (J) | | |
| (K) | | |
| (L) | | |
| (M) | | |

FLD T TE OINTS:

| | | RIGHT |
|---|---|---|
| | _____ | _____ |
| (O) | _____ | _____ |

| BOTTOM | | TOP: | |
|---|---|---|---|
| (P) | _____ | (U) | _____ |
| (Q) | _____ | (V) | _____ |
| (R) | _____ | | |
| (S) | _____ | | |
| (T) | _____ | | |

SIDE KEY




**MINIMUM THICKNESS:**
- 1,500 gallon vessels or more = **0.25**
- <1,500 gallon = **0.203**(head) **0.239**(shell)

## 14. PRESSURE (RETEST) (P)

A. FLUID USED FOR TEST (HYDROSTATIC ONLY)
WATER: ☐ YES ☐ NO

B. TEST PRESSURE (MINIMUM: 375 Refer to instructions for State - Specific
psig: _____

C. HOLDING TIME OF TEST ( M: 10 MIN TES)
ST E: _____

| PASS | FAIL | CHECKL SPECTED/TESTED |
|---|---|---|
| | | D. Gask |
| | | E. Exces |
| | | e Relief Valves |
| | | ed ☐ New |

## ON / TEST RESULTS

20. INSPE N PERFORMED AT OWNERS ADDRESS? ☐ YES
IF NO, PROVIDE ADDRESS:

21. (MUST CHECK ONE)
**TANK: ☐ MEETS ☐ FAILS TO MEET**
THE DOT INSPECTION/TEST REQUIREMENTS.
Remarks:

22. (MUST CHECK ONE) THIS TANK HAS BEEN WITHDRAWN FROM SERVICE. ☐ **YES** ☐ **NO**

23. DOT REGISTRATION NUMBER OF TESTING FACILITY PERSON

**"CT" NO:**

| 25. INSPECTED/TESTED BY (Print Person's Name) | 26. Date |
|---|---|
| | |

## NOTICE

To complete the NTIP inspection/test process, go to www.asmark.org then click on NTIP, logon and enter the information from this worksheet into the website. Print, sign and distribute a copy of the official NTIP Inspection Report to the CT inspector and the owner of the tank.



Note: More information on back.



**The inspection/test results documented on this Worksheet must be entered into the NTIP website to obtain an official NTIP Inspection Report.**

# WORKSHEET ADDENDUM

Use this worksheet to document NTIP tests/inspections for anhydrous ammonia vessels. (Does not include trailers/running gears.)

## 29. TANK ORIGIN INFORMATION

PROVIDE THE FOLLOWING IF AVAILABLE: ☐ N/A

MANUFACTURER:_____

DATE MANUFACTURED:_____

SERIAL NO:_____

DOT SPECIFICATION NUMBER:_____

MAWP in psig:_____

## 30. TANK INFORMATION

(CHECK ALL THAT APPLY)

- ☐ Lined
- ☐ Insulated
- ☐ Dedicated Service:_____
- ☐ Special Service
- ☐ Other:_____

Comments:

_____

_____

_____

## 31. INFORMATION ON ANY DEFECTS/DAMAGE

(MUST CHECK ONE) ☐ NO DEFECT OR DAMAGE DISCOVERED ☐ DEFECT(S) OR DAMAGE DISCOVERED

Location of Defect(s) or Damage:

_____

_____

_____

_____

Nature and Severity:

_____

_____

_____

_____

Method of Repairs: ☐ REPAIR CERTIFICATION REQUIRED ☐ REPAIR CERTIFICATION **NOT** REQUIRED

☐ If YES, Certification/Registration No:_____

_____

_____

_____

Post Repair Determination: Tank: ☐ MEETS ☐ FAILS TO MEET ..... The DOT Inspection/Test Requirements

## 32. INFORMATION ON REPAIRING FACILITY

| REPAIRED BY (Company) | REPAIRED BY (Person) | REPAIR DATE |
|---|---|---|
| ADDRESS | ASME or National Board Number of Repair Facility | MARKINGS APPLIED |

## NOTICE

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Note: More information on front.



**The inspection/test results documented on this Worksheet must be entered into the NTIP website to obtain an official NTIP Inspection Report.**

# Nurse Tank Inspection Report Instructions

Locate the Worksheet provided in each NTIP Inspection Kit and record the data from your test/inspections using the following instructions.

Insert an "X" in the appropriate box indicating whether the tank has an ASME dataplate present and legible or whether the ASME dataplate is NOT present or legible.

Following numbers correspond to each box on the Nurse Tank Inspection Report form and the NTIP Worksheet.

**1. ORIGIN INFORMATION**

Insert the following information as applicable.

**a. Serial Number**
Insert the serial number from the ASME dataplate, if legible.

**b. Manufacturer**
Insert the name of the manufacturer from the ASME dataplate, if legible.

**c. Date Manufactured**
Insert the date manufactured from the ASME dataplate, if legible.

**2. NTIP NUMBER**

Record the NTIP number on the tank being tested/inspected. This number will be used to verify and track the inspection history related to each individual tank. Accuracy is very important.

- For tanks previously inspected under NTIP, record the previous NTIP number from the decal on the tank.
- For tanks being inspected for the first time, record the NTIP number from the decal provided in the kit.

**3. CAPACITY**

This is the total number of gallons (water) the tank has the capacity to contain. This number should be confirmed and based on the dimensions of the tank.

**Typical tank dimensions and relative capacity:** (for information only)

| Capacity (Water Gallons) | Diameter | Length |
|---|---|---|
| 1,000 | 41" | 16'-0" |
| 1,450 | 46" | 17'-4" |
| 2,000 | 46" | 24'-1" |

**Formula for calculating tank capacities:**

**For a cylinder:**
$ID^2$ (inches) x .0034 x length of cylinder (inches) = gallons (water)

**For two elliptical heads:**
$ID^3$ (inches) x .001133 = gallons (water)

**For two hemispherical (half globe) heads:**
$ID^3$ (inches) x .002266 = gallons (water)

**Assumptions:**
7.48 gallons = 1 Cubic Foot
1 Gallon water = 8.3453 Pounds
ID - Inside Dimension

**4. TANK IDENTIFICATION**

Insert the identification number that is assigned to each respective tank by the facility. This is an internal number used by each company to identify their tanks.

**5. OWNER**

Insert the name of the company/individual that owns the tank to be tested.

**6. FACILITY NUMBER**

Insert the number of the facility to which the tank being tested is based. This is an optional number and may not apply. The facility number (may also be referred to as a unit number) is applicable to companies with several locations and each location has been assigned a facility number by their company.

**7. OWNER SIGNATURE**

Insert the signature of the operator of the facility on the Official NTIP Inspection Report. The Official NTIP Inspection Report is produced after the results are entered into the website.

**8. ADDRESS**

Insert the street address of the facility to which the tank being tested is based. This address must be a physical street address and not a P.O. Box address.

**9. CITY**

Insert the city of the facility to which the tank being tested is based. This city will refer to the physical street address of the facility and not a P.O. Box address.

**10. STATE**

Insert the state applicable to the address for the facility where the tank being tested is physically based.

**11. ZIP CODE**

Insert the zip code applicable to the address for the facility where the tank being tested is physically based.

**12. EXTERNAL VISUAL (V)**

Insert an "X" in the appropriate box indicating whether the tank has passed or failed the visual inspection based on the criteria listed below:

**a. Tank Shell**

Visually inspect the tank shell to ensure the tank welds are in good condition and to identify any bulges, cracks, dents, gouges, corrosion or abrasion.

**b. Tank Heads**

Visually inspect the tank heads to ensure the welds are in good condition.

**c. Head-to-Shell Seam**

Visually inspect the head-to-shell seam to ensure the welds are in good condition.

**d. Valves**

Visually inspect valves by checking for any thread deterioration. With the tank bled off and pressure released, operate the valve to detect difficulties in movement, deteriorated packing or worn seats. Check the gasket, handle, dust cap, plug and pressure bleed off for their condition, leakage, distortion and corrosion.

**e. Piping**

Visually inspect all piping for cracks or signs of leakage. The piping should also be inspected visually for thread deterioration, corrosion, signs of vibration, and distortion. Look at each pipe to verify it is properly supported.

**f. Suspension System Attachments**

Visually inspect the suspension of the nurse tank to verify all bolts are present, tight and properly secured to the running gear, the legs are in good condition with no cracks or elongated holes, the springs, if any, are in good condition.

**g. Connecting Structures**

Visually inspect connecting structures to ensure they are in good condition. The inspection should verify that welds are in good condition, cracks are not present, there is not distortion or deformation of the structures, and bolts are present and tight.

**h. Corroded/Abraded Areas**

Visually inspect the tank for corroded and scraped areas. The pass/fail determination should be based on whether the identified areas compromise the integrity of the tank.

**i. Distortions**

Visually inspect the tank for distortions. The pass/fail determination should be based on whether the identified areas compromise the integrity of the tank.

**j. Dents**

Visually inspect the tank for dents. For dents at welds or that include a weld, the maximum allowable depth is 1/2 inch. For dents away from welds, the maximum allowable depth is 1/10 of the greatest dimension of the dent, but in no case may the depth exceed one inch. (180.411)

**k. Welds**

Visually inspect welds to ensure they are in good condition and do not compromise the integrity of the tank.

**l. Nuts & Bolts**

Visually inspect the bolts to ensure they are present, tight with no cracks or elongated holes.

**m. Markings**

See attached information for proper markings and visually inspect the tank to ensure it is marked accordingly.

**n. Paint**

Visually inspect the paint to ensure the tank is properly protected from corrosion.

**o. Other**

Visually inspect the tank for any other identified deficiencies not previously identified that could compromise the integrity of the tank and list them here.

**p. Other**

Visually inspect the tank for any other identified deficiencies not previously identified that could compromise the integrity of the tank and list them here.

**13. THICKNESS (T)**

Test the thickness of the tank at the points specified below and record them on the appropriate line of the form.

**Head Thickness Test Points (Test Points A-E)**

Use a testing device to determine the thickness of the front and rear heads of the tank at each point designated on the “end key” diagram of the form and record them beside each corresponding letter. The thickness of these head points must be at least .203” for tanks less than 1,500 gallon capacity and .25” for tanks equal to or greater than 1,500 gallon capacity.

**Liquid Level Line Test Points (Test Points F-H)**
Use a testing device to determine the thickness of the liquid level line test points as designated on the "side key" diagram of the form and record them beside each corresponding letter. The thickness of these liquid level test points must be at least .239" for tanks less than 1,500 gallon capacity and .25" for tanks equal to or greater than 1,500 gallon capacity.

**Around Openings (Test Points I-M)**
Use a testing device to determine the thickness around openings as designated on the "side key" diagram of the form and record them beside each corresponding letter. The thickness of these liquid level test points must be at least .239" for tanks less than 1,500 gallon capacity and .25" for tanks equal to or greater than 1,500 gallon capacity.

**Weld Joint Test Points (Test Points N-V)**
Use a testing device to determine the thickness of the weld joint test points on the sides, top and bottom of the tank as designated on the "side key" diagram of the form and record them beside each corresponding letter. The thickness of these liquid level test points must be at least .239" for tanks less than 1,500 gallon capacity and .25" for tanks equal to or greater than 1,500 gallon capacity.

## 14. PRESSURE (RETEST) (P)

### A. Fluid Used For Test (Hydrostatic Only)
Verify that water was used for the pressure test by checking the box for "Yes." Follow the pressure test procedures found in 180.407(g) which includes (ii) removing the relief valves, and (vii) which requires all closures except pressure relief devices to be kept in place during the test.

### B. Test Pressure (Minimum: 375 psig)
Ensure the tank pressure is at zero and empty. Fill the tank with water and pressurize the tank to test pressure (1.5 times the maximum working pressure). If the tank has a maximum working pressure of 250 psig, the test pressure should be 375 psig. Some states require tanks with a maximum working pressure of 265 psig. In that situation, the maximum test pressure should be 397.5 psig (265 x 1.5). Record the maximum test pressure used in the space provided on the form.

### C. Holding Time Of Test (Minimum 10 Minutes)
Record the amount of time the maximum pressure was maintained. This must be completed by recording the start time and stop time on the form in the space provided. This time should be a minimum of 10 minutes.

### D. Gaskets
Indicate with an "X" in the "Pass" or "Fail" box whether the gaskets have been inspected and meet requirements.

### E. Excess Flow Valves
Indicate with an "X" in the "Pass" or "Fail" box whether the excess flow valves have been inspected and meet requirements. It is not a DOT requirement to test the excess flow valve, however, it is recommended. The excess flow valves must be in place during the pressure test. The recommended procedure is to test to see that the excess flow valve works properly to stop the flow. It is recommended that new excess flow valves be tested immediately after being installed.

### F. Re-closing Pressure Relief Valves
Indicate with an "X" in the "Pass" or "Fail" box whether the pressure relief valve has been inspected and meets requirements. The inspector must also indicate by placing an "X" in the appropriate box as to whether the pressure relief valve is new or been tested.

**15. REPAIRS (IF ANY) MADE BY:**
Record the name of the person who made any repairs on the tank identified during the inspection.

**16. DATE**
Record the date of any repairs made on the tank identified during the inspection.

**17. ADDRESS**
Record the physical street address of the person who made any repairs on the tank identified during the inspection.

**18. CITY, STATE, ZIP CODE**
Record the city, state and zip code for the address of the person who made repairs on the tank identified during the inspection. The city, state and zip code in this box should correspond to the street address listed in box #17.

**19. (CHECK AS APPROPRIATE)**
Enter an "X" in the appropriate box whether the defects identified previously have been corrected or if the defects identified previously need not be corrected. Enter the initials of the inspector and provide any remarks related to the correction of defects.

**20. INSPECTION PERFORMED AT OWNERS ADDRESS**
Indicate the inspection was performed at the owners address as listed in box #8 above by placing an "X" in the box next to "Yes." If the inspection was performed at an address other than the one listed in box #8 above, provide the address on the form where the inspection was performed.

**21. TANK "MEETS" OR "FAILS TO MEET" TEST REQUIREMENTS**
Enter an "X" indicating whether the tank "meets" or "fails to meet" the DOT inspection/test requirements. The inspector may also enter any remarks that are relevant to the inspection in the space provided.

**22. THIS TANK HAS BEEN WITHDRAWN FROM SERVICE**
Enter an "X" in the appropriate box indicating if this tank has been withdrawn from service.

**23. DOT REGISTRATION NUMBER OF TESTING FACILITY PERSON**
Enter the "CT" number of the person who is listed as a registered inspector with DOT to conduct inspections.

**24. INSPECTOR/TESTED BY**
The registered inspector must sign their name in this box on the Official NTIP Inspection Report. The Official NTIP Inspection Report is produced after the results are entered into the website.

**25. INSPECTOR/TESTED BY**
The registered inspector must print their name in this box.

**26. DATE**
Enter the date the inspection was conducted.

**27. ADDRESS**
Enter the physical street address for the registered inspector on the Official NTIP Inspection Report. The Official NTIP Inspection Report is produced after the results are entered into the website.

**28. CITY, STATE, ZIP CODE**
Enter the city, state and zip code of the registered inspector which corresponds to the street address entered in box #27 on the Official NTIP Inspection Report. The Official NTIP Inspection Report is produced after the results are entered into the website.

**29. TANK ORIGIN INFORMATION**

This section pertains to a nurse tank with an illegible or missing ASME dataplate. For tanks missing the dataplate, indicate by marking an "X" in the Not Applicable (N/A) box. For tanks with an illegible dataplate, record any/all legible information required on the form.

**30. TANK INFORMATION**

Indicate with an "X" in the "Dedicated Service" box the nurse tank is dedicated to use with anhydrous ammonia. (All tanks must be dedicated to anhydrous ammonia service if included in NTIP.)

**31. INFORMATION ON ANY DEFECTS/DAMAGE**

Indicate with an "X" in the appropriate box whether defects/damage was discovered. Information pertaining to any defects or damage should be listed in the appropriate section of the NTIP Inspection Report. If defects or damage were discovered, the CT may note on the NTIP Addendum to refer to the NTIP Inspection Report or use this section to provide any additional information.

Indicate with an "X" in the appropriate boxes the information pertaining to "Method of Repairs" and "Post-Repair Determination."

Reminder: Repairs involving welding on a nurse tank with a missing or illegible ASME dataplate are prohibited by DOT.

**32. INFORMATION ON REPAIRING FACILITY**

Repairs involving welding on a nurse tank with a missing or illegible ASME dataplate are prohibited by DOT; therefore it is unlikely this section would be completed. In the event a DOT-allowed repair to the nurse tank is made, complete this section with the required information.

## Notice:

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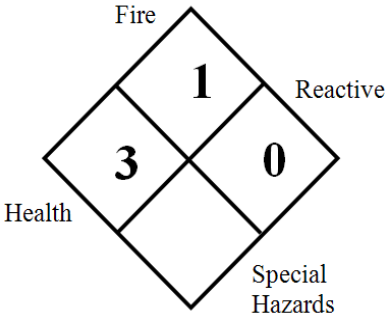
# Ammonia Tank Markings

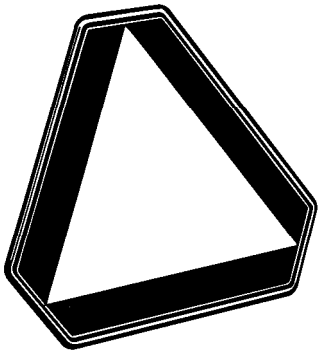
| Marking | Example | Storage Tank | Nurse Tank | Applicator Tank |
|---|---|---|---|---|
| **NFPA Diamond** | **A** | Locate decals to be seen by emergency responders. | N/A | N/A |
| **Slow Moving Vehicle (SMV)** | **B** | N/A | One decal on the rear of wagon. | One decal on the rear of the applicator. |
| **Health & Physical Hazards** | **C** | One decal located near the primary transfer point. | One decal located near the primary transfer point. | One decal located near the primary transfer point. |
| **"Inhalation Hazard"** | **D** | N/A | Two decals with 2" letters (minimum) on opposite sides. | Two decals with 2" letters (minimum) on opposite sides. |
| **"Anhydrous Ammonia"** | **E** | N/A | Four decals with 2" letters (minimum) on all four sides. | Four decals with 2" letters (minimum) on all four sides. |
| **First Aid Information** | **F** | One decal located in a visible location. | One decal located near the primary transfer point. | One decal located near the primary transfer point. |
| **"1005" D.O.T. Placard** | **G** | N/A | Four decals with one affixed to each side. | Four decals with one affixed to each side. |
| **"Caution Ammonia"** | **H** | Two decals with 4" letters (minimum) on opposite sides. | N/A | N/A |
| **Transfer Instructions** | **I** | N/A | N/A | One decal located near the primary transfer point. |
| **"Gloves & Goggles Required"** | **J** | One decal located near the primary transfer point. | N/A | N/A |
| **Confined Space** | **K** | One decal located near the manhole. | N/A | N/A |
| **NTIP Decal(s)**<br>**(Nurse Tank Inspection Program)**<br>**-First-time**<br>**-Re-Inspection** | **L** | N/A | One decal located near the primary transfer point. | One decal located near the primary transfer point. |

ALWAYS CONSULT YOUR STATE AGENCIES FOR ADDITIONAL REQUIREMENTS

A




B



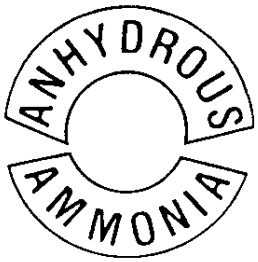
C

**Health and Physical Hazards**

D

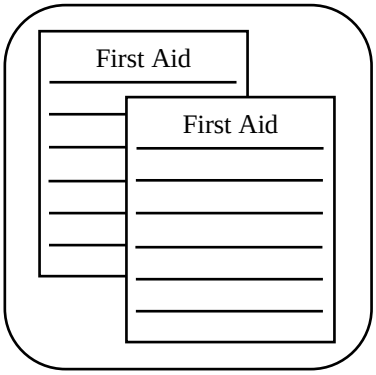
Inhalation Hazard

E




Anhydrous Ammonia

F



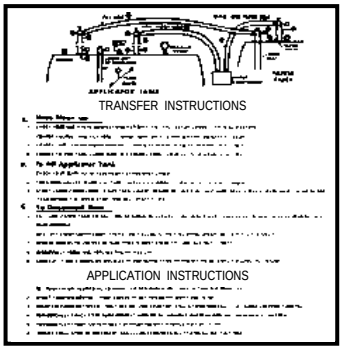

G


H

CAUTION

AMMONIA

I




J

**CAUTION**

GLOVES & GOGGLES REQUIRED WHEN TRANSFERRING

K

**DANGER**

**CONFINED SPACE ENTER BY PERMIT ONLY**

L


(Example of First-Time)