

Western Plant Health Association DOT MC 330 & 331 NH₃ Cargo Tank Inspection Checklist Form

Title 49CFR Parts §107 through §180 & Parts §385-§399 / CCR Title 8 §409 / 29CFR §11910.11(b)(10)

Company Name: _____ Date of Inspection: _____
 NH₃ Cargo Tank Inspected: _____ Name of Inspector: _____

NH₃ MC 330-331 Cargo Tank Inspection Check Sheet Yes No NA

1.	385.401 385.423	FMCSA Safety Permit – Do you have or do you need a current FMCSA Safety Permit on File?																								
2.	107.601 107-200	Operating Authority – Do you have a current PHMSA or CHP hazardous materials Permit?																								
3.	177.816 172.704	Driver Training – Have your drivers completed the proper hazardous materials training prior to transport?																								
4.	396.111	Do your drivers complete a through pre-trip inspection as required under Federal Motor Carrier Safety Regulations?																								
5.	172.204 177.817	Shipping Papers: Prior to departing with a loaded or last contained NH ₃ cylinder do your drivers have the proper shipping papers?																								
6.	180.417(a)	U1A - Does the NH ₃ Cargo Tank have a current U1A Birth Certificate on File?																								
7.	178.345-15 180.417	Ammonia Certification – Is the NH ₃ Cargo Tank certified for NH ₃ ? Do you maintain a Manufactures Ammonia Certificate?																								
8.	173.315	NH ₃ Cargo Tank Maximum pressure. It the NH ₃ Cargo Tank’s maximum design pressure rated at 265 psi?																								
9.	178.338-18	Specification Plate (Data Plate) Does the NH ₃ Cargo Tank have a data plate attached? NH ₃ Cargo Tanks built before 1985 must be mounted on the right side. NH ₃ Cargo Tanks built after 1985 must be mounted on the left side.																								
10.	180.407 180.415(a) (b) 178.338-16	VIKP Inspection Dates Current <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <thead> <tr> <th style="width: 30%;">Test or</th> <th style="width: 20%;">Symbol</th> <th style="width: 20%;">Interval</th> </tr> </thead> <tbody> <tr> <td>External Visual</td> <td>V</td> <td>1 year</td> </tr> <tr> <td>Internal Visual</td> <td>I</td> <td>5 years</td> </tr> <tr> <td>Lining</td> <td>L</td> <td>1 year</td> </tr> <tr> <td>Leakage Test</td> <td>K</td> <td>1 year</td> </tr> <tr> <td>Pressure Test</td> <td>P</td> <td>5 years</td> </tr> <tr> <td>Thickness Test</td> <td>T</td> <td>2 years</td> </tr> </tbody> </table>	Test or	Symbol	Interval	External Visual	V	1 year	Internal Visual	I	5 years	Lining	L	1 year	Leakage Test	K	1 year	Pressure Test	P	5 years	Thickness Test	T	2 years			
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11.	107.503 171.8 180.409	Inspectors completing the VIKP inspections do they meet the minimum criteria and are they documented Registered Inspectors?																								
12.	178.338-8	Pressure relief devices, piping, valves, and fittings do they conform to PHMSA standards as listed under 49CFR Part §178.338-8																								
13.	178.338-14	Does the Cargo Tanks Gauging devices, i.e., Liquid level gauging devices, Pressure gauges, rotor gauge, liquid percent gauge and spitter gauges meet the minimum requirements of §178.338-14																								
14.	178.337.9	Pressure relief valves. Do they meet the minimum requirements as listed in CFR Part §173.337.9																								

Company Name: _____	Date of Inspection: _____
NH ₃ Cargo Tank Inspected: _____	Name of Inspector: _____

NH ₃ MC 330-331 Cargo Tank Inspection Check Sheet			Yes	No	Na
15.	173.315 (n)(2)	Passive Shut Down: 3500 gallons or greater NH ₃ Non-Metered Cargo Tank must have a passive shut down that stops the flow of NH ₃ within 20 seconds without human intervention (Smart Hose Technologies are allowed).			
16.	173.315 (n)(2)	Metered NH ₃ Cargo Tanks must have an off-truck remote means to close the internal self-closing stop valve and shut off all motive and auxiliary power equipment upon activation by a qualified person attending the unloading of the cargo tank motor vehicle (off-truck remote shut-off). It must function reliably at a distance of 45.72 m (150 feet). The off-truck remote shut-off activation device must not be capable of reopening the internal self-closing stop valve after emergency activation.			
17.	178.337.10 504(e)	Accidental damage protection. All cargo tank fittings openings, valves must be protected by either cage or shear protection.			
18.	180.416 (f)	NH ₃ Hoses are they certified for use with NH ₃ .			
19.	180.416	NH ₃ Hoses are they current within their expiration date?			
20.	180.416	NH ₃ Hoses do you have an annual testing program? Are the NH ₃ hoses annually testing in accordance with _____?			
21.	180.416 (d)	NH ₃ Hoses do you complete monthly hose and discharge inspections?			
22.	177.840 (m)	<i>Cargo tank motor vehicle safety check.</i> Before unloading from a cargo tank motor vehicle containing a liquefied compressed gas, the qualified person performing the function must check those components of the discharge system, including delivery hose assemblies and piping.			
23.	180.416 (G)(1-2)	NH ₃ Hoses Do your driver's complete pre and post delivery hose inspections?			
24.	177.840 (o)	Daily test of off-truck remote shut -off activation (internals). An operator must test the emergency remote internal shut down system within 18 hours prior to the next load.			
25.	504(f)(4) 1910.11 (b)10 iv	Emergency Water – Minimum 5 gallons of water mounted on the MC 330 or 331 type cylinders.			
26.	504(f)(2)	NH ₃ Cargo Tanks capacity of 1,200 gallons or more must also contain a full face respirator for ammonia service.			
27.	504(f)(1)	NH ₃ Cargo Tanks capacity of 1,200 gallons or more shall be equipped with a pair of NH ₃ resistant gloves.			
28.	504(f)(3)	NH ₃ Cargo Tanks capacity of 1,200 gallons or more must be equipped with a fire extinguisher of at least 20B-C rating.			
29.	177.840 (l- t)	Emergency Equipment & Operating Procedures. All cargo tanks subject to discharge requirements must have written emergency discharge procedures either posted on the cargo tank or in the truck.			
30.	177.840 (p)	Attendance loading and unloading – NH ₃ cargo tanks greater than 3500 gallons must be within 150 feet of the cargo tank.			
Inspectors Signature: _____			Date: _____		

Carrier : _____ Cylinder Number: _____
 Cargo Tank Number: _____ Date of Inspection: _____

Monthly Inspections and tests of MC 330 & 331 Discharge Systems (49CFR, Part 180.416 (d1-through d5)

1. Inspect all delivery hoses and hose assembly at least once each calendar month for damage as follows: PASS FAIL

A.	Inspect for damage to the outer hose cover causing reinforcement material to be exposed ?		
B.	Inspect the hose external wire enforcement braid for kinks or flattened areas.		
C.	Inspect of soft spots when hose is not under pressure or any permanent bulges while not under pressure		
D.	Inspect hoses for bulging while under pressure, or areas where the outer covering is loose from hose.		
E.	Inspect for damaged, slipped, or excessively worn hose couplings.		
F.	Inspect for loose or missing bolts or fasteners on bolted hose coupling assemblies		
G.	Inspect any rubber hoses flexible connectors ensuring no deficiencies are found as noted above A-E		

	INSPECTED HOSE ID NUMBER	ORIGINAL DATE OF ASSEMBLY AND TESTING	PASS	FAIL
1.				
2.				
3.				
4.				
5.				

2. Inspect complete piping system including any fusible elements, bolts, connections and seals as follows PASS FAIL

A.	Inspect all valves, hoses and connections for any external leaks without the use of instruments.		
B.	Inspect for any bolts that are loose or missing and or severely corroded.		
C.	Inspect and ensure manual stop valves are working properly with no audio leaks detected.		
D.	Inspect internal self closing valves for any deficiencies that would/could cause valve not to close.		
E.	Inspect all valves, pipes or joints for severe corrosion.		

3. Inspect and actuate all emergency discharge control devises designed to close all internal valves PASS FAIL

A.	Inspect and test the cylinders emergency shutdown system.		
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4. Inspect the internal self closing stop valve in the liquid & vapor discharge opening for leakage through the main valves. PASS FAIL

A.	Liquid -Test must be monitored for 30 seconds, per valve for any detectable leakage without the use of instruments – Rejection criteria any detectable leakage.		
B.	Vapor -Test must be monitored for 30 seconds, per valve for any detectable leakage without the use of instruments – Rejection criteria any detectable leakage.		

Any defects noted in the fail column must be corrected and documented on a separate shop maintenance work order that must reference this monthly inspection.

X Signature: _____

I certify that the inspection was completed in accordance with 49CFR 180.416(d1 through d5)

Unit Returned to Service _____ Unit Removed and Placed "Out of Service" _____

Western Plant Health Association Loading Facility Vehicle & Cylinder Inspection Sheet

Company Inspected : _____

WPHA Member: Yes No Time of Inspection: _____

Date of Inspection: _____/_____/_____

Location of Inspection: _____

Truck Number: _____ Cylinder Numbers: _____

- | | | | |
|---|-----|----|----|
| 1. Emergency 5-gallon water container mounted on cylinder ?..... | Yes | No | NA |
| 2. Emergency 5-gallon water container full and operational ?..... | Yes | No | NA |
| 3. Emergency thermal links present on all remote shut off? | Yes | No | NA |
| 4. Smart Hoses present? Hose in good condition?..... | Yes | No | NA |
| 5. Gas Canister Respirator present? In proper storage container?..... | Yes | No | NA |
| 6. Cylinder has proper emergency protection on valves and fittings? | Yes | No | NA |
| 7. Cylinders Spitters and Gauges are operational?..... | Yes | No | NA |
| 8. Emergency remote shut off marked "emergency shut off"..... | Yes | No | NA |
| 9. VIKP on cylinder current with markings..... | Yes | No | NA |
| 10. Placards in place and readable..... | Yes | No | NA |
| 11. Emergency Operating Procedures posted per 178.840(l)..... | Yes | No | NA |
| 12. Inhalation Hazard labeled on cylinder..... | Yes | No | NA |
| 13. Tire condition of cylinders good?..... | Yes | No | NA |
| 14. Are the vehicles/cylinder wheels properly choked | Yes | No | NA |

Comments _____

Driver's Name: _____

- | | | | |
|---|-----|----|----|
| 1. CDL ok current with proper endorsements..... | Yes | No | NA |
| 2. Driver carries medical card, not expired | Yes | No | NA |
| 3. Does the Driver have a current WPHA ID Badge..... | Yes | No | NA |
| 4. Is the driver wearing the WPHA ID Badge..... | Yes | No | NA |
| 5. Does the Driver have proper head protection are they wearing it | Yes | No | NA |
| 6. Does the Driver have splash proof goggles, are they wearing it..... | Yes | No | NA |
| 7. Does the Driver have proper chemical splash proof gloves, are they wearing them..... | Yes | No | NA |
| 8. Does the driver have proper splash proof work shoes..... | Yes | No | NA |
| 9. Does the Driver have the proper tools i.e. Hammer and fittings | Yes | No | NA |
| 10. Is the driver proficient in the loading procedures..... | Yes | No | NA |
| 11. Are proper attendance loading procedures followed | Yes | No | NA |
| 12. Is the driver's daily hours of service in compliance? Intra or Interstate..... | Yes | No | NA |

Notes: _____

On site inspectors Name

Signature

Date of Report

I certify that the information specified above on this report is true and accurate at the time/date of inspection.

Trailer Unloading Procedures

Anhydrous Ammonia

Stay with the truck while unloading. In the event of an accidental release, operator should immediately engage the remote control shut off device. Shut off power/PTO. Refer to emergency instructions.

1. Spot trailer so hoses will reach main bulk head "liquid and vapor connections" Set tractor trailer breaks, chock trailer wheels.
2. Put on proper safety gear. Goggles; gloves; long sleeve cotton shirt & pants; chemical resistant footwear; if required additionally; hardhat; chemical resistant jacket/pants.
3. Locate emergency water, ensure water is available; check wind direction.
4. Walk the customer's liquid and ammonia lines ensuring the liquid and vapor lines are contained.
5. Identify the customer's cylinders data plate. Determine the total water capacity of the cylinder
6. Check storage tank gauge to determine if your load will fit. "do the math"
7. Ensure transport & the customer's bulk head liquid and vapor valves & internals are closed.
8. Before removing any end caps from the liquid & vapor lines on the truck and the customer's bulk head, first bleed off any excessive pressure that may have built up between the end caps and valves.
9. Remove Acme caps on the
10. Ensure O-Rings or Gaskets are in place on the liquid and vapor hose adapters prior to connecting.
11. Hook up liquid and vapor hoses to the transport cylinder then to the customer's liquid and vapor globe valves at their bulk head.
 1. Compressor Pumps, Liquid to liquid, vapor line from customer's cylinder to the suction side of the compressor transport vapor line from the discharge side of compressor to transport vapor valve. ***(to unload you must suck the vapors from the customer's tank to maintain a higher psi pressure to push the liquid out of the transport cylinder to the customer's cylinder.***
 2. Liquid pumps; liquid to liquid and vapor to vapor.
12. Open the transport liquid and vapor internals.
13. Open slowly both the transports liquid and vapor globe valves.
14. Open the customer's inline internals; slowly open customer's bulkhead liquid and vapor globe valves.
15. Check transport vapor pressure, then storage tank vapor pressure - equalize before starting pump.
16. IF vapor compressor is on the truck Put PTO in gear and let it idle. PTO speed should be set at 650 RPM (**no higher**), once you start pumping check your transport and customer's cylinder pressure often. The Transport cylinder pressure should always be 20-30psi higher than the customer's cylinder. Any higher than that your liquid internal has closed and no liquid is transferring.
17. You must stay within an arms reach of emergency shut off device while pumping with the exception to check on other vital and necessary procedures of unloading.
18. You must remain in visual contact with all hoses associated with unloading procedure at all times.
19. Upon completion of unloading, check gauge to verify trailer is empty.
20. Return engine to idle and shut off PTO.

Unhooking Trailer

1. Close internal vapor and liquid valves on the transport cylinder and customer cylinder
2. Before bleeding ensure 100% line isolation & all valves are closed.
3. Bleed off liquid and vapor hoses into water only. Do not bleed to atmosphere, especially in populated areas. This could take several minutes. Be careful!!
4. Unhook hoses.
5. Be careful, Drain all liquid from both hoses and put them into rack.
6. Put Acme caps on; Close bleed off valves; Take tank gauge reading and fill out paper work
7. Visually inspect area to ensure all safety equipment is stored correctly and there are no visual signs of ammonia leakage; Remove chocks call dispatch and inform them of completion.