

Pesticide and Fertilizer Management, Ph: 651-201-6275

## Anhydrous Ammonia (NH<sub>3</sub>) Vehicle/Equipment Inspection Checklist

This inspection checklist is a combination of MDA, MN DOT, and MN State Patrol regulations.

FIRM NAME	DATE
LOCATION (CITY/STATE)	INSPECTOR'S INITIALS

**INSTRUCTIONS:** UNLESS OTHERWISE NOTED, specify non-compliance by entering ("X") in box(es). If non-compliance is found:

- (1) Remove NH<sub>3</sub> equipment from service in accordance with the MDA's NH<sub>3</sub> Service Status Policy; or
- (2) Immediately correct the non-compliance.

VEHICLE / EQUIPMENT IDENTIFICATION / TYPE / GALLON CAPACITY / SERVICE STATUS	1	2
<b>Vehicle/Equipment Unit Identification:</b> Firm (F), MDA Tag (MT), Mfr. Serial # (MS), etc.		
<b>Applicator (AP), Nurse Tank (NT), Dual Nurse Tanks (D), Toolbar (TB), Motor Vehicle (MV).</b>		
<b>Gallon Capacity of Tank(s)</b> – at or less than 3,000 gallons on a single running gear.		
<b>Service Status:</b> In Service (IS); Out of Service (OS); or Zero Product/Pressure Out of Service (ZP).		
<b>Compliant</b> to MDA Service Status Policy (Tagging/Lock Outs, etc.). Review Service Status Policy fact sheet.		

HAZARDOUS MATERIALS COMMUNICATION REQUIREMENTS (Markings and placards must be complete, unfaded, and unobscured )		1	2
*** Citations for items 2 through 4 are 49 CFR, §172.328, §172.504 and MN Rules, §1513.0220 ***			
1	<b>Tank painting</b> (white or aluminum per 49 CFR, §173.315(m)(1)(iii) and MN Rules, §1513.0220).		
2	<b>"Anhydrous Ammonia"</b> in 2-inch letters on both ends and sides of each nurse tank on a trailer (except front head with valves).		
3	<b>"Inhalation Hazard"</b> in 2-inch letters on both sides of each nurse tank on a trailer.		
4	<b>Division 2.2 placards</b> with 1005 ID number on both ends and sides of each nurse tank on a trailer (except front head with valves).		
5	Applicator tank – Legible ammonia transfer instructions must be readily visible per MN Rules, §1513.1060(B)		

VEHICLE / TRAILER (RUNNING GEAR) REQUIREMENTS		1	2
1	<b>Slow – moving vehicle (SMV) emblem</b> – must be <b>COMPLETE, UNFADED, and FULLY VISIBLE</b> from rear of towed assembly per MN Statutes, §169.522, §169.801, and MN Rules, §1513.1040, Subpart 2.		
2	<b>AP, NT, TB hitch connection - Requires hitch pin and retainer (i.e. clip pin) when in tow</b> for intrastate commerce per MN Statutes, §169.801, Subd. 3. and MN Rules, §1513.1050.		
3	<b>AP, NT, TB hitch connection - Requires safety chains when in tow</b> for intrastate commerce per MN Statutes, §169.801, Subd. 3. and MN Rules, §1513.1050.		
4	<b>Applicator and nurse tank anchoring to running gear</b> – NO missing or ineffective (i.e. loose) securement per MN Rules, §1513.1020.		
5	<b>Applicator tank cradle friction</b> – NO metal to metal contact between tank and tank cradle supports allowed per MN Rules, §1513.1020.		
6	<b>Running gear</b> has defects (including but not limited to frame cracks, defective suspension, etc.) per MN Rules, §1513.1050.		
7	<b>Tire(s)</b> not in compliance if (makes no difference on the number of ply's of the tire) (a) Weight limitations of more than 500 pounds/inch of tire tread width per MN Statute §169.801, Subdivision 2; (b) Tire Condition which would include per MN Rules, §1513.1050. 1 – Body ply or belt material exposed through the tread or sidewall or bulges or other defects; 2 – Tire as any tread or sidewall separation; 3 – Tire has an audible leak; 4 – Tire has a cut to the extent that the ply or belt material is exposed; or 5 – Tire has little or no tread-balding.		

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(Continued from page 1) VEHICLE / TRAILER (RUNNING GEAR) REQUIREMENTS		1	2
8	<p><b>Lighting:</b> Per MN Statute §169.55</p> <p><b>Intrastate Commerce:</b> (tail lamps, brake lamps, &amp; turn signals). Towing vehicle lighting must be visible either by existing lights, additional lights on towing vehicle, or adding lights to trailer. Two red reflectors must be displayed visible to the rear on the last unit of every combination implements of husbandry.</p>		
9	<p><b>Brakes:</b> Per MN Statute, §169.801, Subd. 10 and §169.67, Subd. 5.</p> <p>(a) A self-propelled implement of husbandry must be equipped with brakes adequate to control its movement and to stop and hold it and any vehicle it is towing.</p> <p>(b) A towed implement of husbandry must be equipped with brakes adequate to control its movement and to stop and hold it, unless the implement of husbandry is in a combination of vehicles that meets the requirements of section 169.67, subdivision 5 – braking performance standard.</p> <p>(c) If a towed implement of husbandry with a gross vehicle weight of more than 6,000 pounds, or more than 3,000 pounds if manufactured after January 1, 2011, and if the brake performance standard cannot be met, it is required under paragraph (b) to have brakes, it must also be equipped with brakes adequate to stop and hold it if it becomes detached from the towing vehicle.</p>		

APPLICATOR/NURSE TANK, TOOLBAR/APPLICATION UNIT APPURTENANCES REQUIREMENTS		1	2
1	<p><b>Tank rating:</b> Per 49 CFR, §173.315(m)(1)(i), MN Rules, §1513.0120 and §1513.1010.</p> <p>(a) NH3 rated (i.e. tank heads are stressed relieved and equipped with baffles); and</p> <p>(b) Minimum 250 psi rated.</p>		
2	<p><b>Tank welding, dents, and defects:</b></p> <p>(a) Non-code or Non-documented welded alterations or repairs (NCW) per MN Rules, §1513.0120;</p> <p>(b) Dents Depth: Per MN Rules, §1513.0030, Subpart 15 and 49 CFR, §180.411</p> <p>(1) Area that includes a weld: Greater than ½ inch depth in area of a weld;</p> <p>(2) Area that does not include a weld: Greater than 1/10 of greatest diameter of dent, but no greater than one inch.</p> <p>(c) Defects: Leakage (L) or other defects. Per MN Rules, §1513.0030, Subpart 15 and 49 CFR, §180.411</p>		
3	<p><b>Tank data (Name) plate is Absent (AB), illegible (IL), or Requires Cleaning (CL) – nameplate dirty/painted over and must be cleaned to determine legibility; Per 49 CFR, §173.315(m)(i) and MN Rules, §1513.0140, Subparts 1 &amp; 2.</b></p> <p><b>What is required? What is missing?</b></p> <p>(a) Name of Manufacturer;</p> <p>(b) Manufacturer Serial Number;</p> <p>(c) “ASME” Stamp – for tanks built from January 1, 2012 to present;</p> <p>(d) “U” Stamp;</p> <p>(e) Applicable Construction Stamps (“W”, “RT”, “HT”, etc.);</p> <p>(f) 250 psi MAWP at Temperature (°F);</p> <p>(g) Year Built;</p> <p>(h) Minimum Design Metal Temperature or MDMT – for tanks built from January 1, 1989 to present.</p>		
4	<p>Each Nurse Tank with Missing or Illegible ASME nameplate must comply with Federal DOT requirements for continued NH3 service per 49 CFR §173.315(m)(2). The following must be performed every five (5) years:</p> <p>(a) <b>Nurse tank is inspected and tested</b> by a DOT registered inspector meeting the requirements of 49 CFR, 180.409(d);</p> <p>(b) <b>Nurse tank must receive and pass:</b> (1) external visual inspection per 49 CFR, §180.407(d); (2) thickness test per 49 CFR, §180.407(i); and (3) pressure (hydrostatic) test per 49 CFR, §180.407, at a minimum pressure of 375 psig.</p> <p>(c) Welded repairs on nurse tanks is prohibited.</p> <p>(d) <b>Upon passing tests in</b> (b) the nurse tank must be marked near the ASME data plate or anywhere on the front head (front side area) with the following markings:</p> <p>(1) Test and Inspection Markings–Month/Year V, T, P in at least 1–1/4–inch lettering (for example: 6–12 V P T);</p> <p>(2) Unique ID in at least ½–inch lettering near the test and inspection markings.</p> <p>(e) <b>Records</b> meeting 49 CFR, §180.417(b) showing that nurse tank passed prescribed inspections. Record must be available to a DOT representative upon request.</p>		
5	Valve guard (roll cage) not protecting valves, fittings, and piping.		
6	<p><b>Applicator/nurse tank shut-off valves:</b></p> <p>(a) Not equipped with excess flow valves;</p> <p>(b) Leaking; and</p> <p>(c) Dual (Twin) tanks: Common liquid line not equipped/protected with secured excess flow valve or equivalent.</p>		

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<i>(Continued from page 2)</i>		1	2
APPLICATOR/NURSE TANK, TOOLBAR/APPLICATION UNIT APPURTENANCES REQUIREMENTS			
7	<p><b>Tank pressure and liquid level gauges:</b></p> <ul style="list-style-type: none"> <li>(a) 0–400 psi/NH3 rated gauge is inoperable per MN Rules, §1513.1030;</li> <li>(b) Float/mechanical liquid level gauge is inoperable per MN Rules, §1513.0210;</li> <li>(c) 85% fixed liquid level gauge is inoperable per MN Rules per MN Rules, §1513.1030.</li> </ul>		
8	<p><b>Tank overfilled:</b> Tank liquid level greater than 85% @ 5°F or 90.6% @ 60°F. (Equal to 56% filling density at respective temperatures) per MN Rules, §1513.0190.</p>		
9	<p><b>Five gallon emergency water tank and hosing:</b> Per MN Rules, §1513.1060</p> <ul style="list-style-type: none"> <li>(a) Inaccessible;</li> <li>(b) Hosing brittle, cracked, broken, or otherwise out of condition;</li> <li>(c) Cleaning of hosing and water tank required; (removal of algae, debris, etc.);</li> <li>(d) Water tank requires repair (missing cap, etc.);</li> <li>(e) Water tank requires replacement; (leaky – will not hold water, etc.).</li> </ul>		
10	<p><b>Pressure relief valves (PRVs):</b> Per MN Rules, §1513.0180</p> <ul style="list-style-type: none"> <li>(a) Installation records not accurate, current, and/or available for inspection;</li> <li>(b) Replace: Beyond 5 year service life based on installation date;</li> <li>(c) Replace: Out of condition – rusty or broken component, etc.;</li> <li>(d) Clean; (Is weep hole open?–Weep hole is located at either the side or bottom of PRV)</li> <li>(e) Install or replace rain cap;</li> <li>(f) Perform periodic visual external inspection – MN Rules, Part 1513.0180, Subpart 13.</li> </ul>		
11	<p><b>Hosing, hose–end valve, and connections:</b> Per MN Rules, §1513.0170 and §1513.1030</p> <ul style="list-style-type: none"> <li>(a) Hosing: bulging, abrasions/cracks/cuts to hose cord, or otherwise out of condition;</li> <li>(b) Hose connections are out of condition;</li> <li>(c) Hose–end valves out of condition (leaky, defect to acme threaded adapter and other defects);</li> <li>(d) Bleeder valve(s) in hose–end valve is plugged or does not operate properly;</li> <li>(e) Withdrawal hose and hose–end valve assembly is not properly secured to nurse tank or toolbar/application unit..</li> </ul>		
12	<p><b>Fittings and piping:</b> Per MN Rules, §1513.0160</p> <ul style="list-style-type: none"> <li>(a) Non–code fittings and piping (galvanized water fittings and piping, etc.);</li> <li>(b) Fittings and piping out of condition.</li> </ul>		
13	<p><b>Toolbar / Application Unit any control valve</b> positioned between the break–away coupling device / regulator and meter must visually indicate whether the valve is open or closed per MN Rules, §1513.1030, Subpart 8.</p>		
14	<p><b>Hydrostatic relief valve:</b> 350–400 psi/NH3 rated hydrostatic relief valve/rain cap per MN Rules, §1513.0180 must be positioned in:</p> <ul style="list-style-type: none"> <li>(a) Nurse tank withdrawal valve;</li> <li>(b) Female section of break–away coupling device and/or between each pair of shut–off valves;</li> <li>(c) Manufacturer specified psi/NH3 rated hydrostatic relief valve positioned in cold flow/heat exchanger unit;</li> <li>(d) Clean hydrostatic relief valve;</li> <li>(g) Rain cap required;</li> <li>(h) Replace hydrostatic relief valve–leaky or otherwise out of condition;</li> <li>(i) Perform periodic visual external inspection–M–N Rules, Part 1513.0180, Subpart 13.</li> </ul>		
15	<p><b>Automatic Break–Away, self–closing coupling device (BA CD) and assembly:</b> per MN Rules, §1513.1030, Subpart 7.</p> <ul style="list-style-type: none"> <li>(a) BA CD is out of condition (corroded, will not disengage, etc.);</li> <li>(b) Operable bleeder valves required on both sides of BA CD;</li> <li>(c) BA CD not installed per manufacturer specifications;</li> <li>(d) Double swivel (DS) and flat bar (FB) or the manufacturer approved equivalent missing or installed incorrectly;</li> <li>(e) Correct connect/disconnect instructions specific to the BA CD brand, missing or not readily visible near BA CD. Parker–Pioneer BA CD must be equipped with both aluminum ring and instruction decal.</li> </ul>		

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DRIVER RELATED REQUIREMENTS		1	2
1	<b>Interstate and Intrastate Commerce:</b> Daily inspection by driver required on towing vehicle and nurse tank running gear per MN Statutes §169.782, 221.0314 (interstate commerce), 221.605, and 49 CFR, §396.11, and 392.7. This also applies to farmers.		
2	<b>Intrastate Commerce:</b> Driver is 18 years of age or older per MN Statute §221.033 (2a). This also applies to farmers.		
3	<b>Interstate Commerce:</b> Driver is 21 years of age or older per US DOT regulations 49 CFR, §391.11(b)(1). This also applies to farmers.		
4	<b>Interstate and Intrastate Commerce: Commercial driver license requirements (CDL)-</b> Normally does not apply to farmers. (a) Driver licensing: Class A, B, or C with HM & Tank Vehicle Endorsements (as appropriate for size of vehicle) double/triple endorsement only issued to Class A CDLs; OR (b) Restricted CDL [49 CFR, §383.3(f)] – for individuals operating or employed by fertilizer dealerships/custom applicators. (1) No endorsements issued; (2) Valid for 180 consecutive days in a 12 month period; For example, restricted CDL beginning date was October 1, 2017 for 180 consecutive days, ending March 1, 2018. The next allowable restricted CDL beginning date is October 1, 2018. (3) Class B and C (driver license) vehicle types only; (4) Total quantity of hazmat not to exceed 3000 gallons [see 49 CFR §383.3(f)(3)(v)], and (5) Restricted CDL holders may not hold an unrestricted CDL [see 49 CFR, §383.3(f)(3)(vi)]. (c) Class A and endorsements are required when the combination of vehicles in which the gross combination weight (GCW) is more than 26,000 pounds and the towed unit has a gross vehicle weight (GVW) of more than 10,000 pounds. Towing vehicle plus dual/twin tank unit (towed unit) may exceed 26,000 pounds GCW.		
5	<b>Interstate and Intrastate Commerce: Medical Certificate</b> –Ag chemical retailer–Required for all drivers and must be in driver’s possession per 49 CFR, §391.41, unless has valid CDL with self certification on file with the state. Only applies to farmers in interstate commerce.		
6	<b>Intrastate Commerce: Speed limit</b> (a) 30 mph: One full nurse tank per MN Statute §169.522 and 169.801, Subd. 6.; (b) 35 mph: Up to two (2) empty nurse tanks within 35 miles radius of home post office of owner of towing vehicle per §169.81, Subd.10); or (c) One empty tank at lawful speeds greater than 30 mph (removal of SMV emblem not required) per MN Statute §169.522, Subd. 1(a)(2). (d) Applies to farmer/non farmer drivers		
CARRIER RELATED REQUIREMENTS		1	2
1	<b>Interstate and Intrastate Commerce: Annual inspection of each TOWING vehicle</b> that is not an implement of husbandry required by certified inspector per MN Statute §169.781 and 49 CFR, §396.17. Also applies to farmers.		
2	<b>Interstate and Intrastate Commerce: Towing vehicle must be marked per 49 CFR, §390.21.</b> (a) Carrier’s legal name as listed on the motor carrier identification report Form MCS–150 on both sides of towing vehicle; (b) Carrier’s DOT identification number preceded by the words “USDOT” on both sides of towing vehicle; (c) Marking lettering must contrast sharply in color with the background on which the letters are placed; and (d) Marking lettering must be readily legible during daylight hours from a distance of 50 feet. (e) Farmer exemption from this regulation applies only for intrastate commerce.		
3	<b>Interstate and Intrastate Commerce: Maintenance records for towing vehicle:</b> Records indicating dates of inspection and repairs per 49 CFR, §396. Also applies to farmers for interstate commerce.		
4	<b>Interstate and Intrastate Commerce: Registered</b> with US DOT/PHMSA as HazMat shipper/carrier per 49 CFR §107.601. Does not apply to farmers.		
5	<b>Interstate and Intrastate Commerce: HazMat training</b> as required per 49 CFR §172.700 – 172.704. Also applies to farmers.		
6	<b>Interstate and Intrastate Commerce: Written security plan</b> required per 49 CFR §172.800 – 172.804. This applies to farmers also, unless the farmer generates less than \$500,000 annually from gross receipts from the sale of agricultural commodities or products, and the farmer stays within 150 miles radius of their farm per 49 CFR, §172.800.		
7	<b>Interstate and Intrastate Commerce: HazMat Incident Reporting:</b> (a) Immediately contact the Minnesota Duty Officer at 1-800-422-0798 to report per MN Statutes §18D.130 and §221.0341. (b) Immediately contact the National Response Center at 1-800-424-8802: • DOT: For any amount during transportation that meets the reporting requirements per 49 CFR, §171.15. • EPA: 100+ pounds NH3 released per 40 CFR, §302 (EPCRA) and §355 (CERCLA) (c) File US DOT online incident report at <a href="https://hazmatonline.phmsa.dot.gov/incident/">https://hazmatonline.phmsa.dot.gov/incident/</a> or incident report form at <a href="http://www.phmsa.dot.gov/sites/phmsa.dot.gov/files/docs/IncidentForm010105.pdf">www.phmsa.dot.gov/sites/phmsa.dot.gov/files/docs/IncidentForm010105.pdf</a> , per 49 CFR, §171.16. (d) Also applies to farmers.		

**Comments:** \_\_\_\_\_

*Disclaimer: The information in this checklist is for transporting anhydrous ammonia in nurse tanks and is not a complete list of laws, rules, and regulations. Consult Minnesota statutes and rules for more information.*