

Cargo Tank Motor Vehicles

Disclaimer: This checklist is not intended to be a definitive or exhaustive listing of all statutes, safety rules, regulations or codes that may be applicable. It is intended as a general guideline for assisting licensees and stakeholders in complying with state statutes, the Commission's safety rules and adopted national and federal codes that are specific to CARGO TANK MOTOR VEHICLES. The officially published statute, rule or code shall prevail in the event of a conflict with those referenced in the checklist. The checklist may be used to verify compliance prior to placing equipment in service or for routine maintenance audits to ensure continued compliance with applicable safety requirements.

PAINTING / LETTERING / MARKINGS		
<input type="checkbox"/>	Upper 2/3 of cargo tank painted a heat reflective color	178.337-1(d)
<input type="checkbox"/>	Licensee/Ultimate Consumer Name (2" – each side and rear)	9.211
<input type="checkbox"/>	Nature of contents (2" – each side and each end)	172.328(b)(1)
<input type="checkbox"/>	QT or NQT (2" near nameplate)	172.328(c)(1)(2)
<input type="checkbox"/>	Emergency Shutoff (3/4" letters)	172.328(d)
<input type="checkbox"/>	1075 placard diamond on point (each side and each end of the unit)	172.504(a)
<input type="checkbox"/>	Placard must be readily visible	172.516(a)
<input type="checkbox"/>	Placard maintained in good condition	172.516(c)(6)
<input type="checkbox"/>	Test Marking P = pressure test (hydrostatic test) – 5 years I = internal visual test—5 years for tanks with manholes V = external visual inspection – 1 year K = leakage test – 1 year (in English with month and year the test was performed in letters 1¼" in height, near the nameplate or forward head)	180.415(b)
<input type="checkbox"/>	Do not fill container if out of test or inspection date	180.407(a)(1)
<input type="checkbox"/>	Inlets and outlets marked "liquid" or "vapor" except for gauging devices, thermometer wells, pressure relief valves/valves/fill line communicating with vapor space may be marked "spray fill"	178.337-9(c)
<input type="checkbox"/>	Markings required by 49 CFR are legible	180.407(d)(2)(vi)
<input type="checkbox"/>	LPG Form 4 decal properly affixed	9.202(c)(1)
<input type="checkbox"/>	Unit properly registered	9.202(a)
MANIFEST AND DISCHARGE CONTROL DOCUMENTATION		
<input type="checkbox"/>	Amount and type odorant/vapor pressure at 100°F net gals/load temp/specific gravity 60°F Type product/UN# (not required for loads covered by permanent shipping papers per DOT)	9.212(a)-(c)
<input type="checkbox"/>	Odorization-ethyl or amyl mercaptan, thiophane	173.315(b)(1)
<input type="checkbox"/>	Description must be in English	172.201(a)(2)
<input type="checkbox"/>	Emergency response number required	172.201(d)
<input type="checkbox"/>	Hazard class or division	172.202(a)(3)
<input type="checkbox"/>	Material identification number	172.202(a)(1)
<input type="checkbox"/>	Total quantity	172.202(a)(5)
<input type="checkbox"/>	LPG identified as NONCORROSIVE OR CORROSIVE on shipping papers	172.203(h)(2)
<input type="checkbox"/>	Discharge control documentation on unit or in cab	177.840(l)

Cargo Tank Motor Vehicles

CONTAINER AND MOUNTING		
☐	ASME (non-spec) and/or DOT MC 330 or 331	9.4.1.1
☐	Turnbuckles, tie-down bolts, including stops, anchors or other means to prevent container motion	178.337-13(a)
☐	Transporting mounting (120° arc)	178.337-13(b)
☐	Supports and bumpers to be attached to a pad welded to container. No welding directly to the tank	178.337-13(c)
☐	Remount requiring modification must have approval of design certifying engineer	180.413(d)(1)
MAINTENANCE		
☐	Corrosion, dents, defects in weld or any condition which might render cargo tank unsafe	180.407(d)(2)(i)
☐	Damaged or leaking piping, valves or gaskets	180.407(d)(2)(ii)
☐	Missing or loose bolts on manhole covers or leakage around manhole covers	180.407(d)(2)(iii)
☐	Nonoperative or damaged emergency devices and valves, including self-closing stop valves, excess flow valves and remote closure devices	180.407(d)(2)(iv)
☐	Missing or loose bolts, nuts or fusible links	180.407(d)(2)(v)
☐	Damage or corrosion to all major appurtenances on cargo tank such as suspension system (spring hangers) and those elements of the upper 5th wheel assembly	180.407(d)(2)(viii)
☐	Maintenance and mounting of lower half of 5th wheel (fish plate) loose or missing bolts, cracks or other defects	393.70(b)(1)(i)
☐	Maintenance of vehicles	9.204
☐	Mounting and maintenance upper 5th wheel (rub plate assembly and king pin) loose, missing bolts, cracks or other defects	393.70(b)(1)(ii)
☐	Fifth wheel assembly, locking mechanism, excessive play between fish plate and rub plate	393.70(b)(2)
☐	Spring hangers and suspension	396.3(a)(1)
PIPING, FITTINGS, AND VALVES		
☐	Threaded pipe and fittings must be schedule 80 or better	178.337-9(b)(2)
☐	Welded or brazed pipe and fittings must be schedule 40 or better	9.4.3.2(7)
☐	Piping supported/secured against damage from expansion, vibration	178.337-9(b)(4)
☐	Hydrostatic relief for closed sections of liquid piping hose	173.315(i)(11)
☐	Vapor and liquid discharge outlets less than 1¼" may be equipped with excess flow valve and manual shutoff valve	178.337-8(a)(5)(i)
☐	Piping, valves, hoses, fittings must have burst pressure of 4 times container W.P.	178.337-9(b)(1)
☐	Primary valves and fittings shall be steel, malleable, or ductile iron construction	9.4.3.8
☐	Pipe, tubing, fittings, flex connectors minimum equipment design pressure	9.4.3.2(8)
☐	Minimum design pressure and approved materials for valves: shutoff, excess flow, back check and remotely controlled	9.4.3.4(3)
☐	Liquid discharge valves, except for engine fuel, must be closed while unit is in transit	177.840(g)
☐	Unused inlet and discharge opening must be closed with a cap, plug or flange	178.337-8(a)(2)

Cargo Tank Motor Vehicles

VALVE AND TANK GUARDS		
<input type="checkbox"/>	Metal protective guard minimum 3/16" thick	178.337-10(b)
<input type="checkbox"/>	Rear bumper to protect tank and piping	178.337-10(c)(1)
<input type="checkbox"/>	Pumps protected against breakage by collision, kept in good condition, equipped with bypass	178.337-15(a)
<input type="checkbox"/>	Valves in tank openings for pump by-pass	9.4.4.3(3)
HOSE SPECS / FLEX CONNECTOR		
<input type="checkbox"/>	Each delivery hose assembly permanently marked with ID number and maximum W.P.	180.416(b)
<input type="checkbox"/>	Hose assembler must mark hose assembly with month and year of original pressure test	178.337-9(b)(7)(iii)
<input type="checkbox"/>	Operator must assure new or repaired delivery hose assembly is pressure tested and permanently marked with month and year of test	180.416(f)(2)
<input type="checkbox"/>	Hose continuously marked with manufacturer's name or trademark, 350 WP, LP-Gas, propane, continuously marked	9.4.3.5
<input type="checkbox"/>	Manual stop valve required between internal valve and hose connection	178.337-8(a)(6)
<input type="checkbox"/>	Flex connectors limited to 3 feet	9.4.3.6
<input type="checkbox"/>	Rubber flex connections marked as to date of original installation/replaced after 10 years	9.4.3.7
HOSE REJECTION CRITERIA		
<input type="checkbox"/>	Damage to hose cover exposing reinforcement	180.416(g)(i)
<input type="checkbox"/>	Wire braid reinforcement kinked or flattened	180.416(g)(ii)
<input type="checkbox"/>	Soft spots when not under pressure, bulging under pressure, loose outer covering	180.416(g)(iii)
<input type="checkbox"/>	Damaged, slipping or excessively worn hose coupling	180.416(g)(iv)
<input type="checkbox"/>	Loose or missing bolts or fasteners on hose coupling	180.416(g)(v)
CARGO TANK TO BE REMOVED FROM SERVICE IF PIPING HAS ANY OF THE FOLLOWING		
<input type="checkbox"/>	Any external leak identifiable without instruments	180.416(g)(2)(i)
<input type="checkbox"/>	Bolts missing, loose, severely corroded	180.416(g)(2)(ii)
<input type="checkbox"/>	Manual stop valves will not actuate	180.416(g)(2)(iii)
<input type="checkbox"/>	Rubber hose flex connectors damaged	180.416(g)(2)(iv)
<input type="checkbox"/>	Stainless steel connectors with damaged braid	180.416(g)(2)(v)
<input type="checkbox"/>	Internal self-closing stop valves that fail to close or permit leakage detectable without instruments	180.416(g)(2)(vi)
<input type="checkbox"/>	Pipes or joints severely corroded	180.416(g)(2)(vii)
<input type="checkbox"/>	Unsafe operations forbidden	396.7(a)(b)
<input type="checkbox"/>	Valves in liquid discharge system must be closed, and system free of leaks or the unit must not be driven	177.834(j)(2)
EQUIPMENT		
<input type="checkbox"/>	Pumps, compressors, meters, dispensers, regulators, strainers comply with NFPA 58, 6.17	9.4.4.1
<input type="checkbox"/>	Installation of liquid meters/protected against excessive strain/flex connectors permitted	9.4.4.5(A)
<input type="checkbox"/>	Differential regulator required between pump discharge and hose connection where wet hose is connected during transit	9.4.4.5

Cargo Tank Motor Vehicles

MISCELLANEOUS		
<input type="checkbox"/>	Fire extinguisher – 18 lb. with B-C rating readily accessible and mounted on power unit	9.4.7
<input type="checkbox"/>	Visual determination of charged extinguisher	393.95(a)(3)
<input type="checkbox"/>	Chock blocks to be used when parked or loading and unloading	9.4.8
<input type="checkbox"/>	No smoking on or within 25 feet of vehicle, points of liquid transfer, delivering or connecting to containers	9.4.10(1)/397.13
<input type="checkbox"/>	Parking – not on street (with exceptions), not in congested areas, 50 feet from building used for assembly, institutional or multiple residential occupancy	9.7.2.3/397.7
<input type="checkbox"/>	Electrical wiring in a workmanlike manner	393.28
<input type="checkbox"/>	Exhaust system – leaking, not secured	393.83
<input type="checkbox"/>	Tires damaged, flat, bald	393.75
<input type="checkbox"/>	LP-gas motor fuel system must comply with NFPA 58, Ch. 11	393.69
EMERGENCY CONTROL EQUIPMENT		
<input type="checkbox"/>	Each vapor and liquid discharge outlet 1¼" and larger internal valve equipped with manual and thermal remote closure	178.337-8(a)(4)
<input type="checkbox"/>	More than 3,500 WC installed diagonally opposite – manual and thermal remote shutoff at ends of tank	178.337-8(a)(4)(i)
<input type="checkbox"/>	Less than 3,500 WC: thermal closure @ internal valve – on-truck mechanical remote closure tank end furthest from transfer connection	178.337-8(a)(4)(ii)
<input type="checkbox"/>	Non-metered – passive shut down – stop flow without human intervention – 20 seconds – if hose separation	173.315(n)(2)
<input type="checkbox"/>	Metered delivery – 3,500 WC or less, off-truck remote to 150 feet; close internal valve and stop all motive and auxiliary power – liquid only	173.315(n)(3)
<input type="checkbox"/>	Compliance dates: passive shut-down on non-metered. Off- truck remote on metered delivery 3,500 WC or less by first pressure test after July 1, 2001 – MC 330, 331, and non-spec – all by July 1, 2006	173.315(n)(5)
<input type="checkbox"/>	Metered delivery – More than 3,500 WC passive shut-down and for obstructed views either off-truck remote or query system	173.315(n)(2)(3)(4)
<input type="checkbox"/>	Compliance date: metered delivery, more than 3,500 WC – by July 1, 2003	173.315(n)(5)
<input type="checkbox"/>	Fusible element 250°F or less	178.337-8(a)(4)
<input type="checkbox"/>	Fusible element for each internal valve	173.315(p)
PRESSURE RELIEF VALVES (PRV) / LIQUID AND PRESSURE GAUGES / THERMOMETER WELLS		
<input type="checkbox"/>	PRV start-to-discharge, design, constructed and marked for rated pressure not less than tank WP	173.315(i)(3) and 178.337-9(a)(3)
<input type="checkbox"/>	PRV protected so as to open unrestricted in an overturn on hard surface	178.337-10(a)
<input type="checkbox"/>	One or more spring-loaded relief valves required	173.315(i)
<input type="checkbox"/>	PRV requirements: markings, rain caps, communicate with vapor space, etc.	173.315(i)(1)
<input type="checkbox"/>	Approved liquid level gauges: rotary tube, adjustable slip tube, fixed length tube	173.315(h)
<input type="checkbox"/>	Dip tube gauging device intake orifice no larger than .060" diameter	173.315(h)(3)
<input type="checkbox"/>	Pressure gauge opening restricted to .060" diameter	173.315(h)(4)
<input type="checkbox"/>	Thermometer well/ thermometer required if using adjustable liquid level gauge	173.315(e)
<input type="checkbox"/>	One or more fixed liquid level gauge required	173.315(h)

Cargo Tank Motor Vehicles

DAILY/MONTHLY/YEARLY INSPECTIONS AND RECORDKEEPING		
<input type="checkbox"/>	Pre-transfer safety check of discharge system	177.840(m)
<input type="checkbox"/>	Monthly inspection or testing recordkeeping by operator for: delivery hose assembly, piping system, emergency discharge system, internal valves, etc.	180.416(d)(5)
<input type="checkbox"/>	Annual unattached delivery hose assembly test	180.416(e)
<input type="checkbox"/>	Record documenting test and inspection of new or repaired delivery hose	180.416(f)(3)
<input type="checkbox"/>	Owner's record retention: MDR, manufacturer's certificate, other certification including emergency discharge control systems for the life of ownership + 1 year	180.417(a)(1)
<input type="checkbox"/>	User's record retention for use in excess of 30 days: MDR, manufacturer's certificate, other certification including emergency discharge control system for entire time used + 1 year	180.417(a)(2)
<input type="checkbox"/>	Test or inspection reporting must be in English, must contain information required in 180.417(b)(1); must be retained until next test or inspection of same type is completed	180.417(b)(2)
CRYOGENICS UNITS		
<input type="checkbox"/>	One or more fixed liquid level gauge required	178.338-14(a)(1)
<input type="checkbox"/>	Pressure gauge required	178.338-14(b)