

Vacuum Operations with liquid hydrocarbon

WHEN TO COMPLETE – Before the start of any Vacuum Operation activities

Confirm each control / safeguard below before starting work	Guidance for confirming each control / safeguard	Person(s) Performing Work	Start-Work Verifier
I HAVE CONFIRMED:			
1 Required gas tests completed and exclusion zone established.	<ul style="list-style-type: none"> Confirm area gas testing requirements have been completed and understood. Confirm exclusion zone is established as needed to restrict personnel and vehicle traffic within potential flammable zones including exhaust location. 		
2 Material is verified compatible with equipment and clear of potentially incompatible materials and vapors.	<ul style="list-style-type: none"> Confirm that the vacuum equipment is compatible with material to be onboarded. Any residual materials have been evaluated for compatibility to avoid hazardous reactions. Confirm that transfer equipment, including hoses, do not contain incompatible residual material. 		
3 Low flash combustibles or flammables shall be bottom loaded, and operator located at or near controls.	<ul style="list-style-type: none"> Confirm flammables and light combustibles are routed to bottom inlet of tank and initial flow of flammables restricted (transfer nozzle covered) to reduce agitation/static generation. Vacuum truck operator located at or near controls 		
4 Equipment is confirmed to be grounded to an acceptable grounding location	<ul style="list-style-type: none"> Approved ground point used. Mobile Ground Verification (MGV) green light properly achieved (Red light on prior to setting clamp). Confirm that continuity exists between the grounding clamp, grounding point, and the connection measures ≤ 10 ohms Ground points do not include painted surfaces Grounding equipment is in good working condition 		
5 Systems continuity testing was successful for both the liquid and vent hose systems.	<ul style="list-style-type: none"> Test and confirm continuity of liquid and vent systems from hose end, through hose(s), and truck frame to ground. <ul style="list-style-type: none"> Circuit test liquid and vent systems from open end to ground and confirm less than 10,000 Ohms, or Circuit test individual component connections and confirm less than the following Ohm limits: <ol style="list-style-type: none"> Each hose (end to end): less than 100 Ohms All hose connections: less than 10 Ohms (hose to hose, source, suction tools, truck and scrubber) Suction tree to truck frame: less than 10 Ohms 		
6 Exhaust system is configured to vent to a safe location	<ul style="list-style-type: none"> Vent hose routed downwind of truck and other ignition sources, and away from personnel. <ul style="list-style-type: none"> If a scrubber is used and vent could be affected by a nearby ignition source(s), a hydrocarbon monitoring plan for scrubber exhaust is needed A scrubber used for flammable vapors must have a flame arrestor installed upstream of the scrubber 		
7 Liquid hose end properly connected to source or managed to reduce static hazards	<ul style="list-style-type: none"> Liquid hose end submersed where possible or bonded to pan. Hose end managed by helper if not connected to source. (MOC and/or procedure may be needed before attaching vacuum equipment directly to equipment) Where helper(s) are assigned, confirm communication plan is in place, understood, and agreed by all workers. <ul style="list-style-type: none"> Agree on emergency stop signal during pre-job meeting and demonstrate understanding. 		

Confirm these controls / safeguards are in place and verified prior to starting work. Stop and seek help if anything changes.

	Printed Name & Role	Signature	Date
Start Work Verifier			

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