

RULE 346. LOADING OF ORGANIC LIQUID CARGO VESSELS. (Adopted 10/13/1992, revised 1/18/2001)

A. Applicability

The provisions of this rule shall apply to the transfer of organic liquids into an organic liquid cargo vessel.

B. Exemptions

The provisions of this rule shall not apply:

1. to the transfer of gasoline (see Rule 316) or the transfer of organic liquids via pipeline.
2. to any equipment that transfers organic liquids, provided that the true vapor pressure never exceeds that specified in Section D.1., D.2., or D.3., whichever is applicable. Any person claiming this exemption shall submit to the Control Officer a true vapor pressure analysis performed by a District approved laboratory, of all products transferred, certifying that the true vapor pressure at the maximum temperature of transfer does not exceed that specified in D.1., D.2., or D.3., whichever is applicable, on an annual basis. Organic liquids listed in Attachment 1 transferred below the temperature listed in and under the appropriate vapor pressure specified for control under Section D. shall not be required to submit a true vapor pressure analysis.
3. during the calibration of the marker inside a cargo tank when done by the Santa Barbara County Department of Weights and Measures in accordance with their procedures.
4. to the transfer of natural gas liquids, propane, butane or liquefied petroleum gases.

The provisions of Section D., E., and F. shall not apply:

5. to vacuum trucks used for maintenance operations and transport of liquids off-site.

C. Definitions

1. **"Bottom Loaded"** means that the fuel transfer and vapor return lines have separate, independent, and dedicated attachments on the organic liquid cargo vessel, the inlet is flush with the bottom of the organic liquid cargo vessel, and the organic liquid cargo vessel hatches remain closed during fuel transfer.
2. **"Heavy Organic Liquid"** means organic liquid with American Petroleum Institute gravity less than twenty degrees.
3. **"HOST Test Method"** means the "Test Method for Vapor Pressure of Reactive Organic Compounds in Heavy Crude Oil Using Gas Chromatography", approved by the United States Environmental Protection Agency and any subsequent updates approved by the United States Environmental Protection Agency.
4. **"Leak "** means the detection of total gaseous hydrocarbons in excess of 10,000 ppmV as methane above background measured according to test methods in Section H.
5. **"Light Organic Liquid"** means organic liquid with American Petroleum Institute gravity greater than or equal to twenty degrees.
6. **"Organic Liquid"** means any chemical compound of carbon excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, metallic carbonates, and ammonium carbonate.

7. **"Organic Liquid Cargo Vessel"** means a truck, trailer, or railroad car with a storage device for the purpose of transporting petroleum products or organic liquids.
8. **"Submerged fill pipe"** means a fill pipe or discharge nozzle where, if the storage container is filled from the top, the discharge opening is entirely submerged when the liquid level is 6 inches above the bottom of the container.

D. Requirements - Loading Facilities

1. No person shall transfer or allow the transfer of organic liquids having a true vapor pressure (TVP) of 1.5 pounds per square inch atmospheric or greater, at temperature of transfer, into any organic liquid cargo vessel without using a submerged fill pipe.
2. No person shall transfer or allow the transfer of organic liquids into any organic liquid cargo vessel from a loading facility where the total organic liquid throughput into such vessels exceeds or has exceeded 20,000 gallons in any one day of organic liquid with a true vapor pressure of 1.5 pounds per square inch absolute or higher, or exceeds 150,000 gallons in any one year of organic liquid with a true vapor pressure of 0.5 pounds per square inch absolute or higher at temperature of transfer, without:
 - a. Using bottom-loading and a vapor recovery system that prevents the vapors displaced during loading from being released into the atmosphere. Alternatively, a vapor disposal system may be used which is capable of processing such vapors and gases with a vapor destruction or removal efficiency of at least 90 percent by weight; and
 - b. Using one of the following devices to prevent overfill:
 - 1) A primary overfill protection system consisting of a preset fill meter with automatic flow shutoff and a secondary overfill protection system consisting of a liquid level sensor with the ability to signal high level to activate a control valve to shut off flow, or
 - 2) A combination of overfill devices and/or procedures, submitted in writing to the Control Officer, that is at least as effective in preventing overfill spillage as the system in Subsection D.2.b.1);and,
 - c. Using either a block and bleed valve system or other connectors with equivalent spill prevention characteristics.
3. Any loading operation equipment, vapor recovery system, or other equipment required by this rule shall be inspected and repaired for leaks as specified in Section F. of this Rule. The vapor recovery system shall be operated and maintained so that it does not cause the pressure in any delivery vessel to exceed 18 inches water gauge or the vacuum to exceed 6 inches water gauge.

E. Requirements - Organic Liquid Cargo Vessels

1. No person shall transfer or allow the transfer of organic liquids from a facility required to have a vapor recovery system under Section D.2., into an organic liquid cargo vessel using loading equipment having a vapor recovery system unless the delivery vessel is leak free and is permanently equipped with:
 - a. A properly installed vapor recovery system that is compatible with the loading facility. The vapor recovery system must be issued a vapor recovery system certificate by the California Highway Patrol annually; and

- b. A pressure-vacuum relief device for each compartment that is set at the maximum safe pressure and vacuum ratings of the vessel; and
 - c. A secondary overfill protection system compatible with the loading facility secondary overfill protection system, or some other procedure or method approved in writing by the Control Officer that is at least as effective in preventing overfill spillage; and
 - d. A loading connector/adaptor that is compatible with those required at the loading facility.
2. No person shall transfer or allow the transfer of organic liquids from a facility required to have a vapor recovery system under Section D.2., into an organic liquid delivery vessel unless the vapor recovery system of the facility and the vessel is properly connected, is properly operating, does not leak, and all hatches are closed during transfer operations.
 3. No person shall transport organic liquids in organic liquid cargo carriers unless all hatches, valves, and fittings are closed.

F. Requirements - Operator Inspection and Repair

Inspections, repair, reporting and recordkeeping for fugitive emissions at facilities subject to Rule 331 shall be conducted as required by Rule 331. In addition, the operator of any loading facility subject to this rule shall comply with the following:

1. The operator of any equipment subject to Subsection D.2. of this rule shall annually monitor one complete loading operation for leaks proper operation of the loading equipment, delivery vessel vapor recovery and overfill protection systems. Operators shall use United States Environmental Protection Agency Method 21 for monitoring leaks during annual inspections.
2. Leaks found during this inspection shall be reported, repaired, and recorded in accordance with Rule 331. Any other malfunction of the system shall be reported as required under Rule 505.

G. Recordkeeping

1. The operator of any loading equipment subject to Subsection D.2. of this rule, but not subject to Rule 331, shall maintain a record of inspections required by Section F. of this rule and shall record, at a minimum, the following:
 - a. Date of inspection and operator's initials.
 - b. Name and location of loading equipment and amount of organic liquid transferred.
 - c. Description of any leak or malfunction of the vapor recovery or overfill prevention systems.
 - d. Date component was repaired and type of repair, if applicable.
 - e. Whether or not delivery vessels hatches are closed during filling and if any spillage occurs.
 - f. Delivery vessel identification and name of delivery company.

Copies of the inspection report shall be retained by the operator for a minimum of 3 years after the date of any entry and shall be made available upon request to District personnel.

2. Any person claiming exemption from the vapor recovery requirements of Subsection D.2. based on the throughput of organic liquids through the loading equipment, except for vacuum trucks, shall maintain adequate records to substantiate that exemption that include, at a minimum:
 - a. Identification and location of all loading facilities where organic liquids are transferred or loaded into an organic liquid cargo vessel.
 - b. Record the gallons of organic liquid loaded into an organic liquid cargo vessel on each day a transfer takes place and on an annual basis for each loading facility exempt from the vapor recovery requirements of Section D.2. Include operator's initials, date of loading operation, name of liquid transferred and transfer temperature, and method of determining throughput for each loading operation.
3. Any person transferring organic liquid into a vacuum truck and transporting such liquid that is either manifested or shipped under a bill of lading as required by any federal or state regulations shall record the following:
 - a. Date of transfer and operator's initials.
 - b. Location of transfer operation and estimated amount of organic liquid transferred.
 - c. Destination of organic liquid being transferred.

Copies of these records shall be collected and retained by the loading facility operator for a minimum of 3 years after date of an entry and shall be made available upon request to District personnel.

H. Test Methods

1. Vapor pressure of tank contents shall be determined as follows:
 - a. If the American Petroleum Institute gravity of the oil is greater than or equal to 20 degrees, then the vapor pressure shall be determined by measuring the Reid vapor pressure and converting the result to true vapor pressure at the tank's maximum liquid storage temperature.
 - 1) Reid vapor pressure shall be measured using Test Method for Vapor Pressure for Petroleum Products, American Society for Testing and Materials Method D 323-82.
 - 2) Conversion shall be done using either the American Petroleum Institute nomograph attached hereto as Attachment A or the conversion calculation specified in the oil and gas section of the California Air Resources Board document entitled "Technical Guidance Document to the Criteria and Guidelines Regulation for AB 2588" dated August 1989 and attached hereto as Attachment B. If the American Petroleum Institute nomograph scales do not encompass the values necessary for its use, conversion shall be done using Attachment B.
 - b. If the American Petroleum Institute gravity of the oil is below 20 degrees, then the vapor pressure shall be determined using the HOST Test Method. For purposes of this rule, vapor pressure shall include the vapor pressure of all hydrocarbon compounds, i.e., hydrocarbon compounds containing from one to ten carbon atoms, present in the oil sample as determined by gas chromatography.
 - c. The American Petroleum Institute gravity shall be determined according to American Society for Testing and Materials Method D287-82.

2. The test method for determining the vapor removal system efficiency in Subsection D.2.a. shall be as follows:

California Air Resources Board Method TP 202.1 or California Air Resources Board Method TP 203.1, whichever is applicable. The Control Officer may approve an alternative method provided that method is comparable in accuracy and is approved by the California Air Resources Board and the United States Environmental Protection Agency.

3. Monitoring for gaseous leaks shall be conducted according to United States Environmental Protection Agency Reference Method 21. The analyzer shall be calibrated with methane. If the alternative screening procedure referenced in Method 21 is used and bubbles are observed, the instrument technique specified in Method 21 shall be used within the same working day to determine if a leak exists.

I. Compliance Schedule

1. Any owner or operator required, in order to comply with this rule, to modify or replace an existing loading facility transferring organic liquids shall:
 - a. Sample for true vapor pressure in accordance with the test methods in Section H.1.b. of this rule and submit the results to the District no later than April 19, 2001.
 - b. If true vapor pressure results do not qualify for an exemption pursuant to Section B. of this rule, submit an ATC application to the District to comply with Section D. of this rule no later than July 18, 2001.
 - c. submit a Permit to Operate application no later than January 18, 2002.
2. a. The provisions of Section D., E., F., and G. shall be complied with on or before April 18, 2002.

ATTACHMENT 1

Storage Temperature versus Vapor Pressure

Organic Liquids	Reference Gravity (° API)	Property IBP °F	Max. Temp. °F Not to exceed	
			0.5 (psia)	1.5(psia)
Middle Distillates:				
Kerosene	42.5	350	195	250
Diesel	36.4	372	230	290
Gas Oil	26.2	390	249	310
Stove Oil	23	421	275	340
Jet Fuels:				
JP-1	43.1	330	165	230
JP-3	54.7	110	--	25
JP-4	51.5	150	20	68
JP-5	39.6	355	205	260
JP-7	44-50	360	205	260
Fuel Oil:				
No.1	42.5	350	195	250
No.2	36.4	372	230	290
No.3	26.2	390	249	310
No.4	23	421	275	340
No.5	19.9	560	380	465
Residual	19-27		405	---
No.6	16.2	625	450	---
Asphalts:				
60-100 pen.	---	---	490	550
120-150 pen.	---	---	450	500
200-300 pen.	--	--	360	420

ATTACHMENT 1
(Continued)

Organic Compounds	Reference Properties			Max. Temp. °F Not to exceed	
	Density lb/gal	Gravity °API	IBP °F	0.5 (psia)	1.5 (psia)
Acetone	6.6	47	133	---	35
Acrylonitrile	6.8	41.8	173	30	62
Benzene	7.4	27.7	176	34	70
Carbon Disulfide	10.6	---	116	---	10
Carbon Tetra-chloride	13.4	---	170	20	63
Chloroform	12.5	---	142	---	40
Cyclohexane	6.5	49.7	177	30	65
1,2 Dichloroethane	10.5	---	180	35	75
Ethyl Acetate	7.5	25.7	171	38	70
Ethyl Alcohol	6.6	47.0	173	55	85
Isopropyl Alcohol	6.6	47.0	181	62	95
Methyl Alcohol	6.6	47.0	148	30	62
Methyl Ethyl Ketone	6.7	44.3	175	30	70
Toluene	7.3	30	231	75	120
Vinylacetate	7.8	19.6	163	30	65

IBP = Initial Boiling Point