

Truck Transportation of Hazardous Materials Roadside Survey 2024



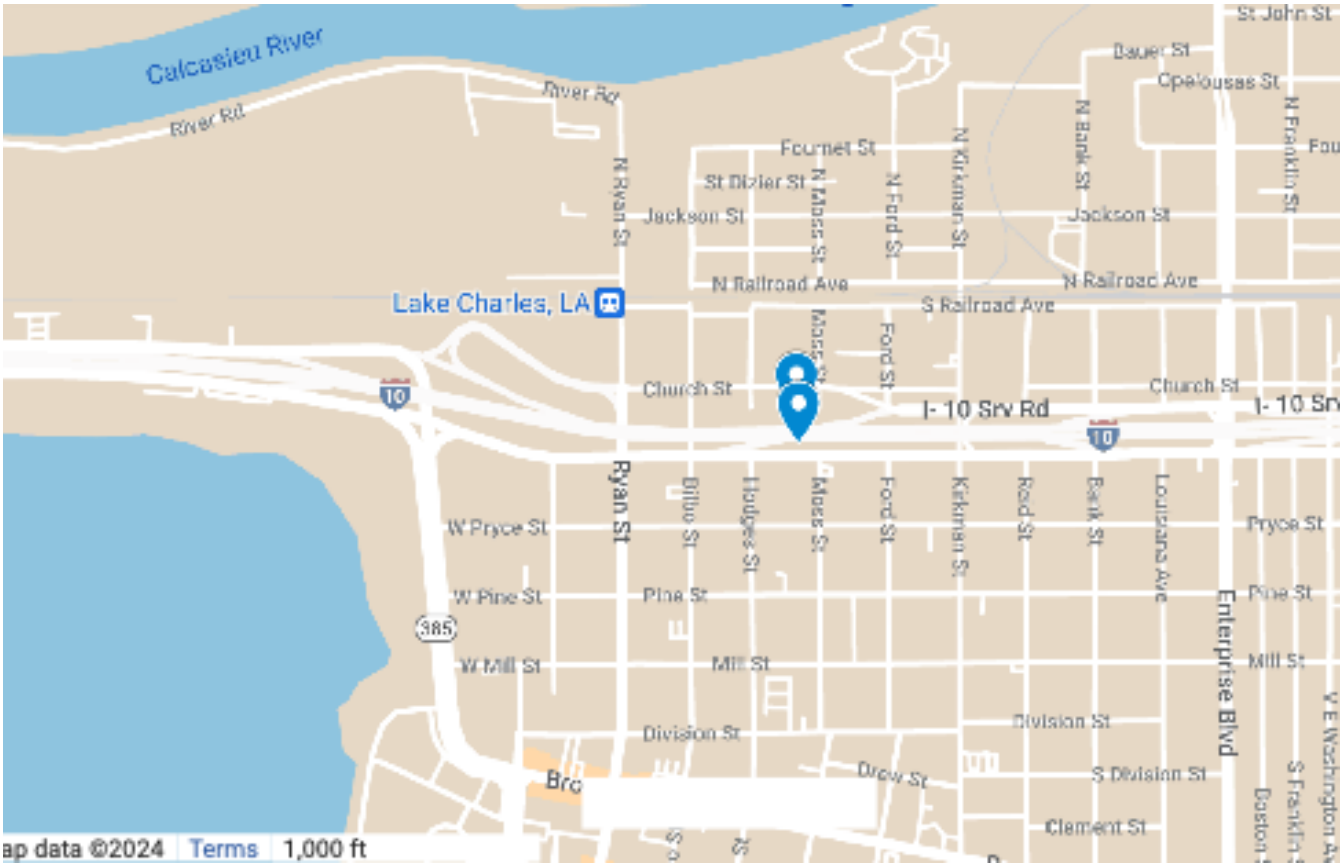
Truck Transportation of Hazardous Materials
Roadside Survey 2024, Interstate 10 Tankers
Including Previous Surveys in 2014, 1999, 1994, and 1989
Calcasieu Parish, Louisiana

Submitted to the
Calcasieu Parish Local Emergency Planning Committee

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I. Roadside hazardous material surveys, 2024

This project surveyed the flow of hazardous materials by tanker trucks transiting through Calcasieu Parish on Interstate 10 and compare these observations to previous roadside surveys from 1989, 1994, 1999, and 2014. Although many trucks carrying hazardous materials use smaller highways and streets in the area, the heaviest flow, by far, is on the Interstate Highway that runs east-west through the parish. To capture the population with the highest exposure to potential highway spills of hazardous materials, we observed tankers on the Interstate Highway 10 segment from the north and south sides of the Interstate between Moss and Hodges Street in Lake Charles. Short samples along Interstate 210 in Lake Charles confirmed the low tanker traffic flow (2-3 tankers per hour) there.



The roadside survey points allowed truck counts and hazardous material identifications for both east- and westbound traffic. By law, trucks that are carrying hazardous materials must display placards indicating their cargo. Each placard contains a UN/NA number, which was recorded and decoded to determine the type of material being transported. Nearly all hazardous materials are carried by tanker trucks. Although other truck types may be carrying hazardous materials in an individual crate, in solid form, or in relatively small quantities, tankers transport the largest quantity of liquid or gaseous hazardous materials. These cargoes of type, quantity, and physical state that pose the greatest potential hazard to first responders and offsite human populations.

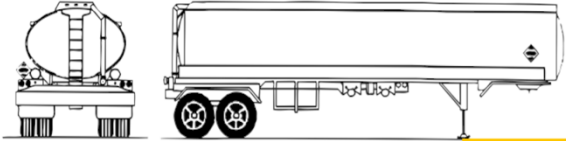
The surveys contain observations during the daylight hours only, there being no practical way to detect the placard numbers from the roadside at night.

Placard example: 1203 is gasoline, a Flammable Liquid.

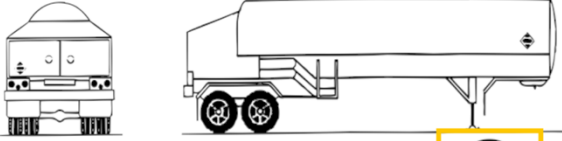


Tanker types for liquids and compressed gases are shown as on the next page.

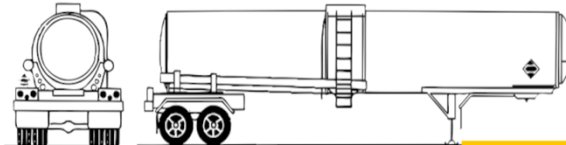
Types 117, 131, and 137 carry liquids or compressed gases.



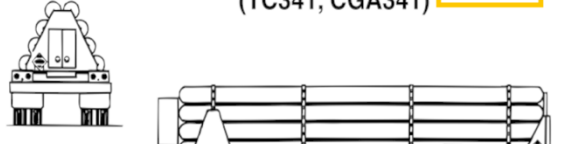
DOT406, TC406, SCT-306
Non-pressure Liquid Tank
(MC306, TC306) **131**



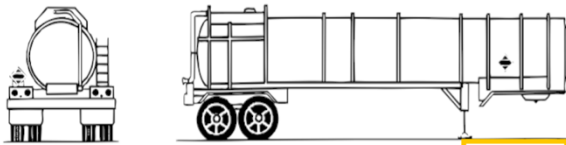
MC338, TC338, SCT-338
Cryogenic Liquid Tank
(TC341, CGA341) **117**



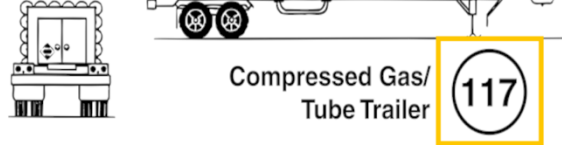
DOT407, TC407, SCT-307
Low Pressure Chemical Tank
(MC307, TC307) **137**



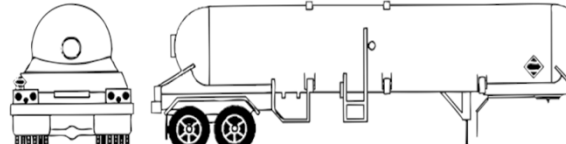
Compressed Gas/
Tube Trailer **117**



DOT412, TC412, SCT-312
Corrosive Liquid Tank
(MC312, TC312) **137**



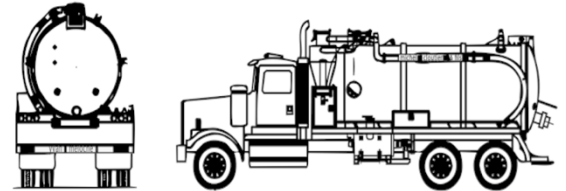
Dry Bulk Cargo
Trailer **134**



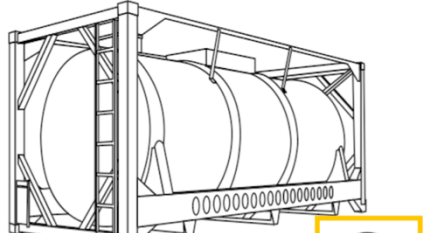
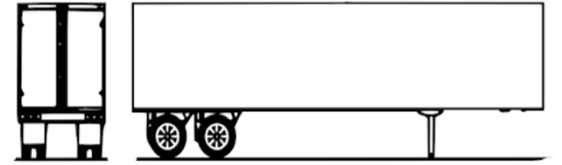
MC331, TC331, SCT-331
High Pressure Tank **117**



Mixed Cargo **111**



DOT407, TC407, DOT412, TC412
Vacuum Loaded Tank
(TC350) **137**



Intermodal Tank **117**

2024 Truck Survey Counts Using Photo Zoom Surveys Jan–May 2024

(Note Tower in background)



Photo zoom:



2024 Truck Surveys
Jan-May 2024
Blank Placard; one of 619



2024 Truck Survey Counts by Hour
Surveys Jan–May 2024

Hour, Jan–May 2024	Truck Count by Hour
8 AM	2
9 AM	203
10 AM	476
11 AM	612
12 PM	333
1 PM	18
2 PM	232
3 PM	325
4 PM	113
5 PM	39
Total Tankers	2353

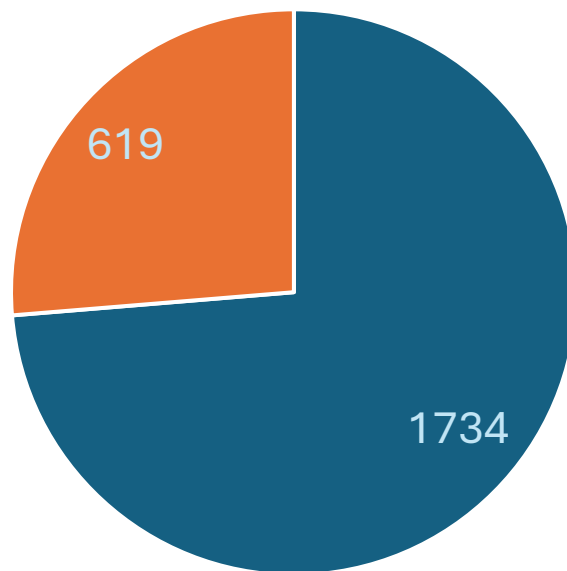
		Percent
Placard	1734	73.7
No Placard #	619	26.3
All tankers	2353	
<i>No placard is assumed to mean that the tanker is empty.</i>		

2024 Truck Survey

All Tankers 2353
Placards 1734
No placard 619

Truck Survey 2024

Tankers with placards, 74%
Tankers without placards 26%



■ Placard ■ No Placard #

2024 Truck Survey Counts by Day

Tankers with Placards (1734) and
Tankers without Placard Numbers (619)

Day	Truck Count
Monday	333
Tuesday	207
Wednesday	515
Thursday	543
Friday	393
Saturday	362
Total	2353

		Percent
Placard	1734	73.7
No Placard #	619	26.3
All tankers	2353	
<i>No placard is assumed to mean that the tanker is empty</i>		

2024 Truck Survey Counts by Date

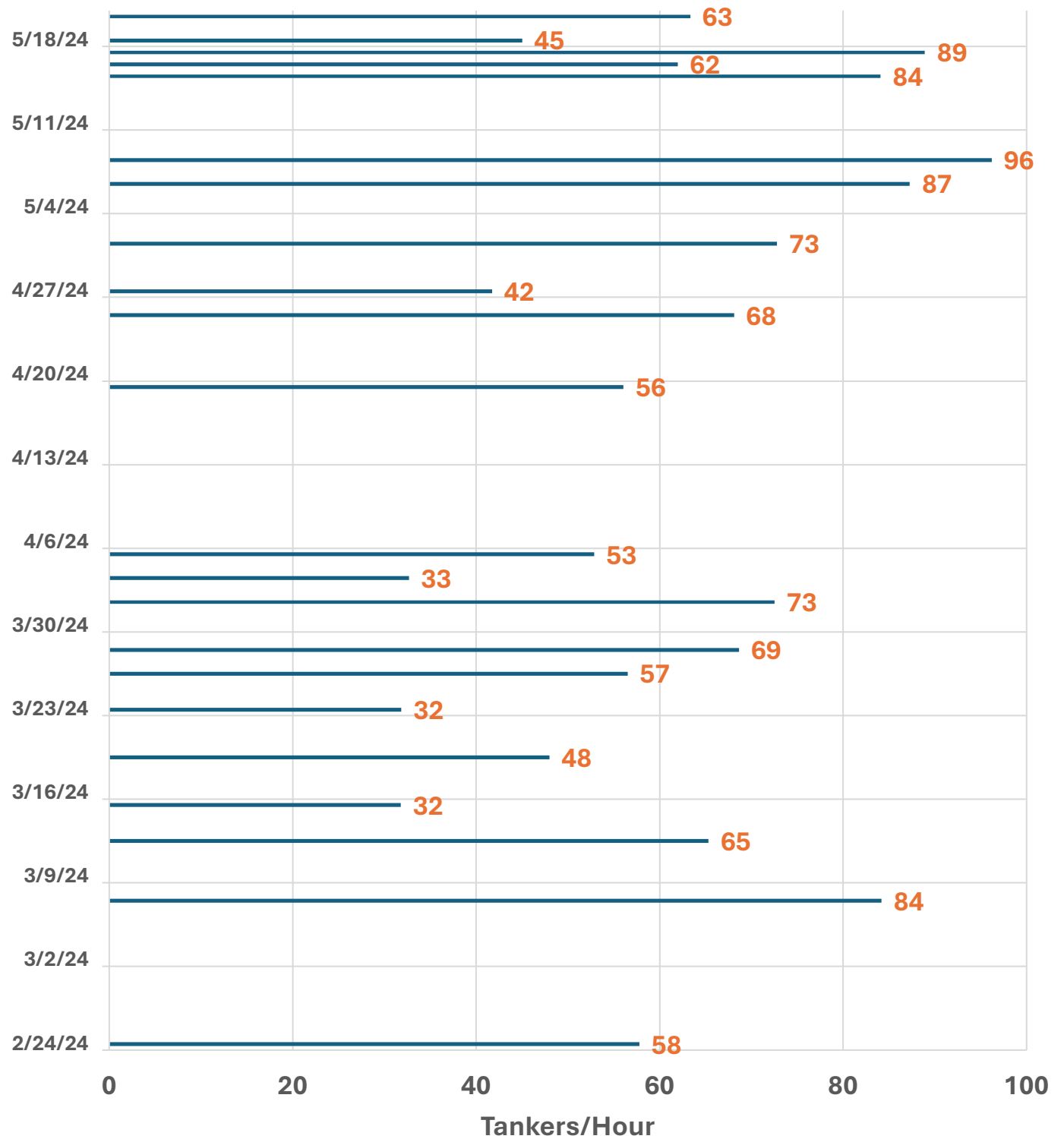
Tankers with Placards (1734) and Tankers
without Placard Numbers (619)

Survey Days	Truck Count by Date
1/19/24	19
2/10/24	28
2/24/24	78
3/7/24	167
3/12/24	98
3/15/24	62
3/19/24	44
3/23/24	69
3/26/24	65
3/28/24	135
4/1/24	110
4/3/24	55
4/5/24	52
4/19/24	57
4/25/24	84
4/27/24	73
5/1/24	74
5/6/24	128
5/8/24	194
5/15/24	192
5/16/24	157
5/17/24	203
5/18/24	114
5/20/24	95
Total Tankers	2353

		Percent
Placard	1734	73.7
No Placard #	619	26.3
All tankers	2353	

Tankers/Hour, Interstate 10, Survey Days

Weeks



2024 Truck Survey, Tankers/Hour by Date

Tankers with Placards (1734) and Tankers without Placard Numbers (619)

No placard is assumed to mean that the tanker is empty

Date	Count Hours	Tankers	Tankers/Hour
1/19/24	1.1	19	18
2/10/24	0.9	28	32
2/24/24	1.4	78	58
3/7/24	2.0	167	84
3/12/24	1.5	98	65
3/15/24	2.0	62	32
3/19/24	0.9	44	48
3/23/24	2.2	69	32
3/26/24	1.2	65	57
3/28/24	2.0	135	69
4/1/24	1.5	110	73
4/3/24	1.7	55	33
4/5/24	1.0	52	53
4/19/24	1.0	57	56
4/25/24	1.2	84	68
4/27/24	1.8	73	42
5/1/24	1.0	74	73
5/6/24	1.5	128	87
5/8/24	2.0	194	96
5/15/24	2.3	192	84
5/16/24	2.5	157	62
5/17/24	2.3	203	89
5/18/24	2.5	114	45
5/20/24	1.5	95	63
	Total hours	Total tankers	Average/hour
	38.7	2353	61

**2024 Truck Survey Counts AM/PM
Surveys Jan–May 2024**

Date	Start	End	AM/PM	Hours
1/19/24	1:25 PM	2:28 PM	PM	1.1
2/10/24	2:28 PM	3:20 PM	PM	0.9
2/24/24	10:20 AM	11:41AM	AM	1.4
3/7/24	10:16 AM	12:15 PM	AM/PM	2.0
3/12/24	11:32 AM	1:02 PM	AM/PM	1.5
3/15/24	3:03 PM	5:00 PM	PM	2.0
3/19/24	9:12 AM	10:07AM	AM	0.9
3/23/24	1:56 PM	4:06 PM	PM	2.2
3/26/24	3:05 PM	4:14 PM	PM	1.2
3/28/24	2:13 PM	4:11 PM	PM	2.0
4/1/24	2:17 PM	3:48 PM	PM	1.5
4/3/24	10:50 AM	12:31 PM	AM/PM	1.7
4/5/24	11:33 AM	12:32 PM	AM/PM	1.0
4/19/24	4:40 PM	5:41 PM	PM	1.0
4/25/24	2:16 PM	3:30 PM	PM	1.2
4/27/24	11:09 AM	12:54 PM	AM/PM	1.8
5/1/24	10:19 AM	11:20AM	AM	1.0
5/6/24	11:05 AM	12:33 PM	AM/PM	1.5
5/8/24	9:26 AM	11:27AM	AM	2.0
5/15/24	10:37 AM	12:54 PM	AM/PM	2.3
5/16/24	9:38 AM	12:10 PM	AM/PM	2.5
5/17/24	9:36 AM	11:53AM	AM	2.3
5/18/24	8:57 AM	11:29AM	AM	2.5
5/20/24	2:51 PM	4:21 PM	PM	1.5
				38.7
		Hours		
	AM	10.1		
	AM/PM	14.2		
	PM	14.4		
		38.7		

2024 Truck Survey

Tankers with Placard Number/Hour by Date

Tankers with Placards = 1734

Date	Survey Hours	Placard Trucks	Placard Trucks/Hour
1/19/24	1.1	9	9
2/10/24	0.9	19	22
2/24/24	1.4	58	43
3/7/24	2.0	120	61
3/12/24	1.5	68	45
3/15/24	2.0	48	25
3/19/24	0.9	35	38
3/23/24	2.2	55	25
3/26/24	1.2	45	39
3/28/24	2.0	104	53
4/1/24	1.5	84	55
4/3/24	1.7	39	23
4/5/24	1.0	36	37
4/19/24	1.0	42	41
4/25/24	1.2	72	58
4/27/24	1.8	59	34
5/1/24	1.0	49	48
5/6/24	1.5	93	63
5/8/24	2.0	144	71
5/15/24	2.3	129	56
5/16/24	2.5	114	45
5/17/24	2.3	144	63
5/18/24	2.5	93	37
5/20/24	1.5	75	50
	Total hours	Placard count	Average placards/hour
	38.7	1734	45

2024 Truck Survey
Materials representing 80% of the tankers with placards

Material	Observed	Percent	Cumulative Percent
Gasoline	164	9.5	9.5
Diesel fuel	150	8.7	18.1
Liquefied petroleum gas	141	8.1	26.2
Hazardous waste	120	6.9	33.2
Sodium hydroxide solution	77	4.4	37.6
Petroleum crude oil	72	4.2	41.8
Nitrogen, refrigerated cryogenic liquid	68	3.9	45.7
Sulfur, molten	52	3.0	48.7
Alcohols, n.o.s	48	2.8	51.4
Corrosive liquid, basic, inorganic, n.o.s.	46	2.7	54.1
Petroleum distillates, n.o.s.	38	2.2	56.3
Sulfuric acid, >51%	30	1.7	58.0
Argon, refrig. liquid	30	1.7	59.7
Acrylic acid, inhibited	27	1.6	61.3
Corrosive liquid, acidic, inorganic, n.o.s.	20	1.2	62.5
Other regulated substances, solid, n.o.s.	20	1.2	63.6
Elevated temperature liquid, n.o.s.	19	1.1	64.7
Hydrochloric acid	19	1.1	65.8
Flammable liquids, toxic, n.o.s.	18	1.0	66.8
Hydrocarbons, liquid, n.o.s.	18	1.0	67.9
Methyl methacrylate monomer, inhibited	17	1.0	68.9
Xylenes	17	1.0	69.8
Corrosive liquids, n.o.s.	17	1.0	70.8
Amines/Polyamines, liquid,corrosive,nos	15	0.9	71.7
Propylene oxide	15	0.9	72.5
Carbon dioxide, refrigerated liquid	15	0.9	73.4
Oxygen, refrig. liquid	14	0.8	74.2
Formaldehyde, solutions, >25 percent	12	0.7	74.9
Styrene monomer, inhibited	12	0.7	75.6
Hydrogen peroxide	11	0.6	76.2

More...

2024 Truck Survey
Materials representing 80% of the tankers with placards...

Material	Observed	Percent	Cumulative %
Toluene	11	0.6	76.9
Ammonia, solution (>10%, <35%)	11	0.6	77.5
Ethanolamine/Ethanolamine solutions	11	0.6	78.1
Ammonia, anhydrous	10	0.6	78.7
Fuel, aviation, turbine engine	10	0.6	79.3
Toxic liquids, flammable, organic, nos	10	0.6	79.9
Toxic liquids, flammable, organic, nos	10	0.6	79.9
Acetylene, dissolved	9	0.5	80.4
80% of tankers, 37 materials: subtotal	1394		

The entire 2024 survey counted 1734 tanker trucks carrying 129 different hazardous materials

2024 Truck Survey Hazardous Classes

Hazard Class	Label
1.1	Explosives
2.1	Flammable gas
2.2	Non-flammable, non-toxic gas
2.3	Poison inhalation hazard
3	Flammable liquid
4.1	Flammable solid
4.2	Spontaneously combustible
4.3	Dangerous when wet
5.1	Oxidizer
5.2	Organic peroxide
6.1	Poisonous material
6.2	Infectious substances/medical waste
7	Radioactive
8	Corrosive
9	Miscellaneous materials/Class 9



2024 Truck Survey

Tanker Materials by Hazardous Material Class

Hazardous Material Class	2024 Count
Flammable liquid	700
Corrosive	397
Flammable gas	175
Miscellaneous/Class 9	164
Non-flammable gas	140
Poison inhalation hazard	53
Flammable solid	52
Oxidizer	19
Poison gas	15
Spontaneously combustible	6
Organic peroxide	6
Poisonous material	6
Dangerous when wet	1
Total	1734

2024 Truck Survey

Tanker Counts by Hazardous
Material Classes Combined

HMClass	Flammable	2024 Count
3	Flammable liquid	700
2.1	Flammable gas	175
4.1	Flammable solid	52
4.2	Spontaneously combustible	6
	Total	933
	Fraction of 1734 tankers	54%

HMClass	Poisonous	2024 Count
2.3	Poison gas	15
6	Poison inhalation hazard	53
6.1	Poisonous material	6
	Total	74
	Fraction of 1734 tankers	4%

2024 Truck Survey

Most abundant Hazardous Material Class observed is
Flammable Liquids, 700 tankers

The frequency of the 67 Hazardous Material types in the
Hazardous Material Class Flammable Liquids is listed in
the table below.

Flammable liquids, 2024	Count
Gasoline	164
Diesel fuel	150
Petroleum crude oil	72
Alcohols, n.o.s	48
Petroleum distillates, n.o.s.	38
Flammable liquids, toxic, n.o.s.	18
Hydrocarbons, liquid, n.o.s.	18
Methyl methacrylate monomer, inhibited	17
Xylenes	17
Propylene oxide	15
Styrene monomer, inhibited	12
Toluene	11
Fuel, aviation, turbine engine	10
Dimethyl sulfide	9
Isopropanol or Isopropyl alcohol	9
Flammable liquids, corrosive, n.o.s.	9
Cyclohexane	8
Dicyclopentadiene	5
Resin solution, flammable	4
Vinyl acetate, inhibited	4
Acetone	3
Sodium methalate solutions in alcohol	3
Valeraldehyde	3
Elevated temperature liquid, flammable, n.o.s., with flash point above 37.8 C, at or above its flash point	3

Flammable liquids, 2024, continued	2
Hexanes	2
Pentanes	2
Butyl acrylates, inhibited	2
Methylamine, aqueous solution	2
Methanol	2
Formaldehyde solutions	2
Chloropene, inhibited	1
Isobutanol	1
Carbon disulfide	1
Methyl isobutyl ketone	1
Morpholine	1
N,N-Dimethylformamide	1
Nitromethane	1
Acetonitrile	1
Butyl acetates	1
Methyl tert-butyl ether	1
Butanols	1
Butyraldehyde	1
Acrylonitrile, inhibited	1
n-Butylamine	1
Propyl formates	1
Ethanol	1
Ethyl acetate	1
n-Propanol or Propyl alcohol, normal	1
1-Methoxy-2-propanol	1
Amines, flammable, corrosive, n.o.s. or Polyamines, flammable, corrosive, n.o.s.	1
Hexanols	1
Diisobutylene, isomeric compounds	1
Tetrahydrofuran	1
Allyl alcohol	1
Isoprene, inhibited	1
Decahydronaphthalene	1
Pyridine	1
Ethers, n.o.s.	1

Flammable liquids, 2024, continued

Flammable liquid, toxic, corrosive, n.o.s.	1
Kerosene	1
Methyl acetate	1
Paint including paint, lacquer, enamel, stain, shellac solutions, varnish, polish, liquid filler, and liquid lacquer base	1
Alcoholic beverages	1
Terpene hydrocarbons, n.o.s.	1
Allyl chloride	1
Isopropyl acetate	1
	700

700 Flammable liquids, 67 types of material

II. Previous Roadside Surveys and All Surveys Combined

Roadside Surveys 2024, 2014, 1999, 1994, and 1989



1989 Survey

Materials representing 80% of placards

<i>1989 Survey</i>	Number		Cumulative
Material	Observed	Percent	Percent
Gasoline	315	22.8	22.8
Liquefied petroleum gas	244	17.7	40.5
Diesel fuel	113	8.2	48.7
Hazardous liquid or solid, n.o.s.	107	7.8	56.5
Petroleum crude oil	54	3.9	60.4
Flammable material, n.o.s.	44	3.2	63.6
Sulfur, molten	37	2.7	66.3
Sodium hydroxide solution	34	2.5	68.7
Corrosive liquids, n.o.s.	30	2.2	70.9
Nitric acid >70%, not red fuming	23	1.7	72.6
Ammonia, anhydrous	21	1.5	74.1
Acrylic acid, inhibited	21	1.5	75.6
Corrosive material, n.o.s.	18	1.3	76.9
Sulfuric acid, >51%	16	1.2	78.1
Nitrogen, refrigerated cryogenic liquid	16	1.2	79.3
Petroleum oil	13	0.9	80.2
16 materials accounted for 80% of placards			

1994 Survey
Materials representing 80% of placards

<i>1994 Survey</i>	Number		Cumulative
Material	Observed	Percent	Percent
Gasoline	109	24.4	24.4
Liquefied petroleum gas	56	12.6	37.0
Diesel fuel	38	8.5	45.5
Hazardous waste	16	3.6	49.1
Sodium hydroxide solution	16	3.6	52.7
Petroleum crude oil	15	3.4	56.1
Sulfur, molten	15	3.4	59.4
Elevated temperature liquid, n.o.s.	11	2.5	61.9
Corrosive liquids, n.o.s.	10	2.2	64.1
Nitric acid >70%, not red fuming	10	2.2	66.4
Methylene Bis(4-Phenyl Isocyanate) (MDI)	9	2.0	68.4
Acrylic acid, inhibited	9	2.0	70.4
Oxygen, refig. liquid	8	1.8	72.2
Petroleum distillates, n.o.s.	8	1.8	74.0
Other regulated substances, solid, n.o.s.	6	1.3	75.3
Carbon dioxide, refrigerated liquid	5	1.1	76.5
Nitrogen, refrigerated liq. cryogenic	5	1.1	77.6
Phosphoric acid	4	0.9	78.5
Ammonia, anhydrous	3	0.7	79.1
Hydrochloric acid	3	0.7	79.8
Naphtha, solvent	3	0.7	80.5
23 materials accounted for 80% of placards			

1999 Survey

Materials representing 80% of placards

<i>1999 Survey</i>	Number		Cumulative
Material	Observed	Percent	Percent
Gasoline	400	24.6	24.6
Liquefied petroleum gas	236	14.5	39.1
Diesel fuel	120	7.4	46.4
Petroleum crude oil	114	7.0	53.4
Hazardous waste	96	5.9	59.3
Other regulated substances, solid, nos.	40	2.5	61.8
Acrylic acid, inhibited	40	2.5	64.3
Sodium hydroxide solution	36	2.2	66.5
Elevated temperature liquid	25	1.5	68.0
Petroleum distillates, n.o.s.	19	1.2	69.2
Sulfuric acid, >51%	18	1.1	70.3
Sodium aluminate, solution	15	0.9	71.2
Corrosive liquid, basic, inorganic, n.o.s.	15	0.9	72.1
Nitrogen, refrigerated cryogenic liquid	15	0.9	73.0
Sulfur, molten	13	0.8	73.8
Hydrochloric acid	12	0.7	74.6
Polychlorinated biphenyls, liquid	11	0.7	75.2
Isopropanol or Isopropyl alcohol	10	0.6	75.9
Methyl methacrylate monomer, inhibited	10	0.6	76.5
Fuel, aviation, turbine engine	9	0.6	77.0
Resin solution, flammable	9	0.6	77.6
Corrosive liquid, basic, organic, n.o.s.	8	0.5	78.1
Argon, refig. liquid	8	0.5	78.6
Corrosive liquids, n.o.s.	7	0.4	79.0
Oxygen, refig. liquid	7	0.4	79.4
Toluene	7	0.4	79.9
Hydrogen peroxide, aqueous solutions	7	0.4	80.3
26 materials accounted for 80% of placards			

2014 Survey

Materials representing 80% of placards

Material	Observed	Percent	Cumulative %
Gasoline	257	17.4	17.4
Liquefied petroleum gas	198	13.4	30.8
Diesel fuel	122	8.3	39.1
Hazardous waste	86	5.8	44.9
Sodium hydroxide solution	86	5.8	50.7
Petroleum crude oil	72	4.9	55.6
Hydrochloric acid	38	2.6	58.2
Acrylic acid, inhibited	28	1.9	60.1
Elevated temperature liquid, n.o.s	26	1.8	61.9
Carbon dioxide, refrigerated liquid	23	1.6	63.4
Caustic alkali liquids, n.o.s.	23	1.6	65.0
Corrosive liquids, toxic, n.o.s.	23	1.6	66.5
Nitrogen, refrigerated cryogenic liquid	16	1.1	67.6
Corrosive liquids, n.o.s.	15	1.0	68.6
Argon, refig. liquid	15	1.0	69.6
Xylenes	14	0.9	70.6
Sulfur, molten	13	0.9	71.5
Phenol, molten	13	0.9	72.4
Nitrates, inorganic, aqueous sol, n.o.s.	12	0.8	73.2
Bisulfites, aqueous solutions, n.o.s.	10	0.7	73.8
Propylene oxide	10	0.7	74.5
Corrosive liquid, acidic, inorganic, nos	10	0.7	75.2
Ethanolamine or Ethanolamine solution	10	0.7	75.9
Petroleum distillates, n.o.s.	10	0.7	76.6
Aluminum chloride, solution	10	0.7	77.2
Corrosive liquid, basic, organic, n.o.s.	10	0.7	77.9
Amines/Polyamines, solid, corrosive nos	9	0.6	78.5
Butyl acrylates, inhibited	9	0.6	79.1
Tert-butyl hydroperoxide	9	0.6	79.7
Flammable liquids, toxic, n.o.s.	9	0.6	80.4
Sulfuric acid, >51%	8	0.5	80.9
30 materials accounted for 80% of placards			

2024 Truck Survey
Tankers Carrying an Extremely Hazardous Substance*
Null counts appeared in other survey years

*substances listed by the USEPA that might cause serious health effects from accidental releases. See 40 CFR Part 355

Extremely hazardous substances appearing in one or more surveys	2024 Count
Acrylonitrile, inhibited	1
Ammonia, anhydrous	10
Aniline	
Carbon disulfide	1
Chlorine	
Chloroacetic acid, solution	
Dimethylhydrazine	
Epichlorohydrin	8
Ethylenediamine	1
Fluorine, compressed	
Formaldehyde	
Hydrazine	
Hydrofluoric acid	
Hydrogen peroxide	
Nickel carbonyl	
Phenol	
Phosphorus trichloride	
Propylene oxide	15
Sodium cyanide	
Sulfuric acid, >51%	30
Tetraethyl lead, liquid	
Toluene diisocyanate	6
Vinyl acetate, inhibited	4
Zinc phosphide	
Total EHS trucks	76
Placard trucks in survey	1734
Fraction EHS	4%

Truck Surveys, 1989–2024
Tankers Carrying an Extremely Hazardous Substance

Material	1989	1994	1999	2014	2024	All years
Acrylonitrile, inhibited		1	5	2	1	9
Ammonia, anhydrous	21	3	4		10	38
Aniline			1			1
Carbon disulfide			1		1	2
Chlorine	2	2	2			6
Chloroacetic acid, solution	1		3	2		6
Dimethylhydrazine	1					1
Epichlorohydrin	8	2	1	6	8	25
Ethylenediamine			1	2	1	4
Fluorine, compressed			1			1
Formaldehyde	5			7		12
Hydrazine		1	3			4
Hydrofluoric acid			1	4		5
Hydrogen peroxide	2	1	10	12		25
Nickel carbonyl		1				1
Phenol	9		4	14		27
Phosphorus trichloride			1			1
Propylene oxide	1	1	6	10	15	33
Sodium cyanide			1			1
Sulfuric acid, >51%	16	2	18	8	30	74
Tetraethyl lead, liquid	1		1			2
Toluene diisocyanate	5		4	2	6	17
Vinyl acetate, inhibited			6	6	4	16
Zinc phosphide			1			1
Total EHS trucks	72	14	75	75	76	312
Placard trucks in survey	1379	446	1628	1476	1734	6663
Fraction EHS	5%	3%	5%	5%	4%	5%

Truck Surveys, 1989–2024
Materials accounting for 60–67% of total

Material	2024	2014	1999	1994	1989
Gasoline	164	257	400	109	315
Diesel fuel	150	122	120	38	113
Liquefied petroleum gas	141	198	236	56	244
Hazardous waste	120	86	96	16	0
Sodium hydroxide solution	77	86	36	16	34
Petroleum crude oil	72	72	114	15	54
Nitrogen, refrigerated liquid cryogenic	68	16	15	5	16
Sulfur, molten	52	13	13	15	37
Alcohols, n.o.s	48	4	5	1	5
Corrosive liquid, basic, inorganic nos	46	3	15	0	0
Petroleum distillates, n.o.s.	38	10	19	8	0
Sulfuric acid, >51%	30	8	18	2	16
Subtotal of materials above	1006	875	1087	281	834
Total placards by year	1734	1476	1628	446	1379
Subtotal fraction of total placards	58%	59%	67%	63%	60%

Truck Surveys, 1989–2024
Survey hours, tankers per hour by material

Year	2024	2014	1999	1994	1989
Survey hours	38	55	37	12	38
Tankers per hour					
Gasoline	4	7	11	3	8
Diesel fuel	4	3	3	1	3
Liquefied petroleum gas	4	5	6	1	6
Hazardous waste	3	2	3	0	0
Sodium hydroxide solution	2	2	1	0	1
Petroleum crude oil	2	2	3	0	1
Nitrogen, refrigerated liq, cryogenic	2	0	0	0	0
Sulfur, molten	1	0	0	0	1
Alcohols, n.o.s	1	0	0	0	0
Corrosive liq., basic, inorganic,nos	1	0	0	0	0
Petroleum distillates, n.o.s.	1	0	1	0	0
Sulfuric acid, >51%	1	0	0	0	0

Truck Surveys, 1989–2024
 Count by hazardous material class, alphabetical order

Hazardous Material Class	All years
Class 9	611
Corrosive	1270
Dangerous when wet	17
Explosives	1
Flammable gas	956
Flammable liquid	2958
Flammable solid	132
Medical waste	5
Non-flammable gas	304
Organic peroxide	25
Oxidizer	80
Poison gas	74
Poison inhalation hazard	201
Poisonous material	6
Radioactive materials	0
Spontaneously combustible	23
Total	6663

Truck Surveys, 1989–2024
Count by hazardous material class frequency

Hazardous Material Class	All years
Flammable liquid	2958
Corrosive	1270
Flammable gas	956
Class 9	611
Non-flammable gas	304
Poison inhalation hazard	201
Flammable solid	132
Oxidizer	80
Poison gas	74
Organic peroxide	25
Spontaneously combustible	23
Dangerous when wet	17
Poisonous material	6
Medical waste	5
Explosives	1
Radioactive materials	0
Total	6663

Truck Surveys, 1989–2024

Most abundant Hazardous Material Class
observed is Flammable Liquids
Tankers = 2958

The 110 Hazardous Material types in the 2958
tankers are listed below

Flammable liquids, all years	Count
Gasoline	1245
Diesel fuel	543
Petroleum crude oil	327
Petroleum distillates, n.o.s.	75
Alcohols, n.o.s	63
Flammable material, n.o.s.	44
Fuel, aviation, turbine engine	37
Methyl methacrylate monomer, inhibited	34
Xylenes	34
Propylene oxide	33
Isopropanol or Isopropyl alcohol	29
Toluene	29
Flammable liquids, toxic, n.o.s.	28
Resin solution, flammable	23
Flammable liquids, corrosive, n.o.s.	20
Pentanes	19
Hydrocarbons, liquid, n.o.s.	18
Methanol	18
Styrene monomer, inhibited	18
Vinyl acetate, inhibited	16
Butyl acrylates, inhibited	15
Petroleum oil	15
Dimethyl sulfide	12
Hexanes	12
Cyclohexane	11
Elevated temperature liquid, flammable, n.o.s., with flash point above 37.8 C, at or above its flash point	10
Naphtha, petroleum	10

Flammable liquids, all years, continued	
Acrylonitrile, inhibited	9
Acetone	8
Paint including paint, lacquer, enamel, stain, shellac solutions, varnish, polish, liquid filler, and liquid lacquer base	8
Terpene hydrocarbons, n.o.s.	8
Vinylidene chloride, inhibited	8
Benzene	6
Dicyclopentadiene	6
Diisobutylene, isomeric compounds	6
1-Hexene	5
Butanols	5
Isopropyl acetate	5
Methyl acrylate, inhibited	5
n-Propanol or Propyl alcohol, normal	5
Tetrahydrofuran	5
Acetonitrile	4
Butyl acetates	4
Ethyl methyl ketone or Methyl ethyl ketone	4
Formaldehyde solutions	4
Heptanes	4
Hexanols	4
Isoprene, inhibited	4
Morpholine	4
n-Butyl methacrylate, inhibited	4
Allyl chloride	3
Chlorobenzene	3
Diisobutyl ketone	3
Ethyl acrylate, inhibited	3
Ethyl mercaptan	3
Kerosene	3
Naphtha, solvent	3
Perfumery products with flammable solvents	3
Sodium methalate solutions in alcohol	3
Valeraldehyde	3
1-Methoxy-2-propanol	2
Alcoholic beverages	2
Aldehydes, n.o.s.	2

Flammable liquids, all years, continued	
Amines, flammable, corrosive, n.o.s. or Polyamines, flammable, corrosive, n.o.s.	2
Butyraldehyde	2
Carbon disulfide	2
Cyclohexanone	2
Diacetone alcohol	2
Ethanol	2
Ethyl butyl ether	2
Ethylamine, 50–70 percent	2
Ethylene glycol monomethyl ether	2
Flammable liquid, toxic, corrosive, n.o.s.	2
Methylamine, aqueous solution	2
Pentanol	2
2-Ethylbutyraldehyde	1
Acetaldehyde	1
Adhesives, containing a flammable liquid	1
Alcohols, flammable, toxic, n.o.s.	1
Allyl alcohol	1
Allyl glycidyl ether	1
Amyl nitrites	1
Chloroprene, inhibited	1
Decahydronaphthalene	1
Diethylbenzene	1
Dipentene	1
Esters, n.o.s.	1
Ethers, n.o.s.	1
Ethyl acetate	1
Ethyl borate	1
Ethylene dichloride	1
Ethylene glycol monomethyl ether acetate	1
Hexaldehyde	1
Isobutanol	1
Isopropenylbenzene	1
Methyl acetate	1
Methyl isobutyl ketone	1
Methyl isopropenyl ketone, inhibited	1
Methyl tert-butyl ether	1
n-Butylamine	1

Flammable liquids, all years, continued	
N,N-Dimethylformamide	1
Nitroglycerin solution in alcohol with not more than 1 percent nitroglycerin	1
Nitromethane	1
Paraldehyde	1
Propionaldehyde	1
Propyl formates	1
Pyridine	1
Rosin oil	1
Sec-butyl acetate	1
Vinyltoluenes, inhibited	1
Number of different materials = 110	Flammable Liquids Count, all years=2958