

Certification Date: 16 Nov 2015 Expiration Date: 16 Nov 2020

Certificate of Inspection

For ships on international voyages this certificate fulfills the requirements of SOLAS 74 as amended, regulation V/14, for a SAFE MANNING DOCUMENT

Vessel Name	Official Number	IMO Num	ber	Call Sign	Service		
HFL 439	1262990				Tank I	Barge	
Hailing Port							
NASHVILLE, TN	Hull Material	Horse	epower	Propulsion			
	Steel						
UNITED STATES							
Place Built	Delivery Date	Keel Laid Date	Gross Tons	Net Tons	DWT	Length	
ASHLAND CITY, TN	16Nov2015	19Oct2015	R-1619	R-1619	0	R-297.5	
UNITED STATES			ŀ	-		1-0	
					*		

Owner
HINES FURLONG LINE INC
996 WILKINSON TRACE SUITE C-1
BOWLING GREEN, KY 42103
UNITED STATES

GENERAL MARINE SERVICES 8350 FLORIDA BLVD, SUITE A-1 BATON ROUGE, LA 70806 UNITED STATES

This vessel must be manned with the following licensed and unlicensed Personnel. Included in which there must be 0 Certified Lifeboatmen, 0 Certified Tankermen, 0 HSC Type Rating, and 0 GMDSS Operators.

	0 Masters	0 Licensed Mates	0 Chief Engineers	0 Qual. Member Eng. Depts	e con
	0 Chief Mates	0 First Class Pilots	0 First Assistant Engineers	0 Oilers	
	0 Second Mates	0 Radio Officers	0 Second Assistant Engineers	0 Crew Members	The State of the Land
	0 Third Mates	0 Able Seamen	0 Third Assistant Engineers		
	0 Master First Class Pilot	0 Ordinary Seamen	0 Licensed Engineers		
	0 Mate First Class Pilots	0 Deckhands	0 Non Licensed Engineer Dept		
1.	- 1.199				

In addition, this vessel may carry 0 Passengers, 0 Other Persons in crew, 0 Persons in addition to crew, and no Others. Total Persons allowed: 0

Route Permitted And Conditions Of Operation:

--- Lakes, Bays, and Sounds plus Limited Coastwise---

Also, in fair weather only, coastwise, not more than twelve (12) miles from shore between St. Marks and Carrabelle, Florida. (does not require a loadline certificate.)

This vessel has been granted a fresh water service examination interval in accordance with 46 CFR 31.10-21(a) (2). If this vessel is operated in salt water more than six months in any twelve month period, the vessel must be inspected using salt water intervals per 46 CFR 31.10-21(a) (1) and the cognizant OCMI notified in writing as soon as this change in status occurs.

SEE NEXT PAGE FOR ADDITIONAL CERTIFICATE INFORMATION

With this Inspection for Certification having been completed at ASHLAND CITY, TN, UNITED STATES, the Officer in Charge, Marine Inspection, Sector Ohio Valley certified the vessel, in all respects, is in conformity with the applicable vessel inspection laws and the rules and regulations prescribed thereunder.

Annual/Period	dic/Re-Inspe	ction	This Amended
Zone	A/P/R	Signature	COMMANDER, by direction
MSD Vcksbrg	A		Officer in Charge, Marine Inspection
BATU	Apro	119564	Sector New Orleans
DO (10000) 62	P	enoy	
Do Geenille	1	Ecro4	Inspection Zone
	Zone MSD Vcksbrg BATU DO (SWIM) (C	Zone A/P/R MSD Vcksbrg A	MSD Vcksbrg A BATU AON MISSEY DO GROWN LOLL AND GROWN



Certification Date: 16 Nov 2015 **Expiration Date:** 16 Nov 2020

Certificate of Inspection

Vessel Name: HFL 439

---Hull Exams---

Exam Type

Next Exam

Last Exam

Prior Exam

DryDock

16Nov2025

16Nov2015

Internal Structure

16Nov2020

16Nov2015

--- Liquid/Gas/Solid Cargo Authority/Conditions ---

Authorization:

FLAMMABLE/COMBUSTIBLE LIQUIDS IN 46 CFR TABLE 30.25-1 AND SPECIFIED HAZARDOUS

CARGOES.

Total Capacity

Units

Highest Grade Type Part151 Regulated Part153 Regulated

Part154 Regulated

29429

Barrels

Yes

No

No

(lbs/gal)

Hazardous Bulk Solids Authority

Not Authorized

Loading Constraints - Structural

Tank Number	Max Cargo Weight per Tank (short tons)	Maximum Density (
1 P/S	822	13.6
2 P/S	835	13.6
3 P/S	750	13.6

SLOP P/S

Loading Constraints - Stability

Hull Type	Maximum Load (short tons)	Maximum Draft (ft/in)	Max Density (lbs/gal)	Route Description
11	3836	10ft 3in	13.6	R, LBS
III	4584	11ft 9in	13.6	R, LBS

Conditions Of Carriage

Only those cargoes named in the vessel's Cargo Authority Attachment, Serial No. C1-1504021, dated 17 September 2015, may be carried and then only in the tanks indicated.

Per 46 CFR 150.130, the person in charge of the vessel is responsible for ensuring the compatibility requirements of 46 CFR 150 are met. Cargoes must be checked for compatibility using the figures, tables, and appendices of 46 CFR 150 in conjunction with the reactive group numbers from the "Compat Group No" column listed in the vessel's Cargo Authority Attachment.

The maximum design density of cargo which may be filled to the tank top is 8.74 lbs/gal. Cargoes with higher densities, up to 13.6 lbs/gal, may be carried as slack loads, but shall not exceed the tank weight limits as listed above.

Note: Per 46 CFR 151.10-15(c)(2) the maximum tank weights listed above reflect uniform (within 5%) loading at the deepest draft allowed. When carrying Subchapter "O" cargoes at shallower drafts, the barge should always be loaded uniformly.

Vapor Control Authorization

In accordance with 46 CFR Part 39, excluding part 39.4000, this vessel's vapor control system has been inspected to the plans approved by Marine Safety Center letter Serial No. C1-1504021, dated 17 September 2015, and has been found acceptable for the collection of bulk liquid cargo vapors annotated with "Yes" in the vessel's Cargo Authority Attachment (CAA) VCS column. The VCS system has been approved with a pressure side 6 psig P/V valve with Coast Guard Approval 162.017/167/3. The cargo tank top is suitable for a maximum allowable working pressure (MAWP) of 6.5 psi.



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When the vessel is carrying cargoes containing 0.5% or more benzene by volume, the person in charge is responsible for ensuring the provisions of 46 CFR Part 197, Subpart C are applied.

In accordance with 46 CFR Part 39.1017 and 39.5000(e) this vessel's VCS has been approved for multi-breasted tandem loading with other vessels specifically approved to tandem load with this vessel.

--- Inspection Status ---

Fuel Tanks

Internal Examinations

Tank ID

AFT

Last

Next

Previous

16Nov2015

Cargo Tanks

	Internal Exam			External Exar	n	
Tank Id	Previous	Last	Next	Previous	Last	Next
1 P/S	-,	16Nov2015	16Nov2025	-	-	-
2 P/S	-	16Nov2015	16Nov2025		-	- 14
3 P/S	- /	16Nov2015	16Nov2025	-	-	-
SLOP P/S	-	16Nov2015	16Nov2025	-	-	-
			Hydro Test			
Tank ld	Safety Valves		Previous	Last	Next	
1 P/S	-		-	16Nov2015	-	
2 P/S	-		_	16Nov2015	2	
3 P/S	-		-	16Nov2015	-	
SLOP P/S	-		_	16Nov2015	-	

---Conditional Portable Fire Extinguisher Requirements---

Required Only During Transfer of Cargo or Operation of Barge Machinery

--- Fire Fighting Equipment ---

Fire Extinguishers - Hand portable and semi-portable

Quantity

Class Type

B-II

---Certificate Amendments---

Unit Amending

Amendment Date

Amendment Remark

Marine Safety Detachment Vicksburg

22Nov2016

Completed Annual Inspection and MTSA

Verification.

Sector New Orleans

10Apr2017

changed operator name and address.

END



Certification Date: 16 Nov 2015 Expiration Date: 16 Nov 2020

Certificate of Inspection

Vessel Name: HFL 439

Fire Extinguishers - Hand portable and semi-portable

Quantity

Class Type

2

B-II

END





Cargo Authority Attachment

Vessel Name: HFL 439

Shipyard: TRINITY MARINE, ASHLAND CITY, TN

C1-1504021

17-Sep-15

Hull #: 5141

Official #: 1262990

Tank Group Information	nformation Cargo Identification		dentification Tanks			Cargo Transfer		Environmental Control		Fire	Special Requirements						
Tnk Grp Tanks in Group	Density	Press.	Temp.	Hull Typ	Sea	- D	Vent	Gauge	Pipe Class	Cont	Tanks	Handling Space	Protection Provided	General	Materials of Construction		Temp Cont
A #1P/S, #2P/S, #3P/S	13.6	Atmos.	Amb.	11	1ii 2ii	Integral Gravity	PV	Closed	II	G-1	NR	NA	Portable	.50-60, .50-70(a), .50-70(b), .50-73, .50-81(a), .50- 81(b),	55-1(b), (c), (e), (f), (j), 56-1(a), (b), (c), (d), (e), (f), (g),	NR	No

Notes: 1. Under Environmental Control, Tanks, NR means that the tank group is suitable only for those cargoes which require no environmental control in the cargo tanks.

2. Under Environmental Control, Handling Space, NR means that the tank group is suitable only for those cargoes which require no environmental control in the cargo handling space. NA means that the vessel does not have a cargo control space, and this requirement is not applied.

3. Under Electrical Hazard Class, NA means that the tank group is suitable only for those cargoes which have no electrical hazard class requirement. NR means that the vessel has no electrical equipment located in a hazardous location.

List of Authorized Cargoes

Cargo Identification	n					Conditions of Carriage						
							Vapor Re	ecovery				
Name	Chem Code	Compat Group No	Sub Chapter	Grade	Hull Type	Tank Group	App'd (Y or N)	VCS Category	Special Requirements in 46 CFR 151 General and Mat'ls of	Insp. Period		
Authorized Subchapter O Cargoes												
Acetonitrile	ATN	37	0	С	III	Α	Yes	3	No	G		
Acrylonitrile	ACN	15 ²	0	С	II	Α	Yes	4	.50-70(a), .55-1(e)	G		
Adiponitrile	ADN	37	0	E	II	Α	Yes	1	No	G		
Alkyl(C7-C9) nitrates	AKN	34 2	0	NA	III	Α	No	N/A	.50-81, .50-86	G		
Aminoethylethanolamine	AEE	8	0	E	III	Α	Yes	1	.55-1(b)	G		
Ammonium bisulfite solution (70% or less)	ABX	43 2	0	NA	III	Α	No	N/A	.50-73, .56-1(a), (b), (c)	G		
Ammonium hydroxide (28% or less NH3)	AMH	6	0	NA	III	А	No	N/A	.56-1(a), (b), (c), (f), (g)	G		
Anthracene oil (Coal tar fraction)	AHO	33	0	NA	II	Α	No	N/A	No	G		
Benzene	BNZ	32	0	С	III	Α	Yes	1	.50-60	G		
Benzene or hydrocarbon mixtures (having 10% Benzene or more)	BHB	32 2	0	С	III	Α	Yes	1	.50-60	G		
Benzene or hydrocarbon mixtures (containing Acetylene and 10% Benzene or more)	ВНА	32 ²	0	С	og III	Α	Yes	1	.50-60, .56-1(b), (d), (f), (g)	G		
Benzene, Toluene, Xylene mixtures (10% Benzene or more)	BTX	32	0	B/C	Ш	Α	Yes	1	.50-60	G		
Butyl acrylate (all isomers)	BAR	14	0	D	111	Α	Yes	2	.50-70(a), .50-81(a), (b)	G		
Butyl methacrylate	ВМН	14	0	D	III	Α	Yes	2	.50-70(a), .50-81(a), (b)	G		
Butyraldehyde (all isomers)	BAE	19	0	С	III	Α	Yes	1	.55-1(h)	G		
Camphor oil (light)	СРО	18	0	D	II	Α	No	N/A	No	G		
Carbon tetrachloride	CBT	36	0	NA	Ш	Α	No	N/A	No	G		
Caustic potash solution	CPS	5 ²	0	NA	Ш	Α	No	N/A	.50-73, .55-1(j)	G		
Caustic soda solution	CSS	5 2	0	NA	Ш	Α	No	N/A	.50-73, .55-1(j)	G		
Chemical Oil (refined, containing phenolics)	COD	21	0	E	II	Α	No	N/A	.50-73	G		
Chlorobenzene	CRB	36	0	D	Ш	Α	Yes	1	No	G		
Chloroform	CRF	36	0	NA	III	Α	Yes	3	No	G		
Coal tar naphtha solvent	NCT	33	0	D	Ш	Α	Yes	1	.50-73	G		
Creosote	CCW	21 2	0	E	III	Α	Yes	1	No	G		
Cresols (all isomers)	CRS	21	0	E	Ш	Α	Yes	1	No	G		
Cresylate spent caustic	CSC	5	0	NA	Ш	Α	No	N/A	.50-73, .55-1(b)	G		
Cresylic acid tar	CRX	21	0	E	III	Α	Yes	1	.55-1(f)	G		
Crotonaldehyde	CTA	19 ²	0	С	II	Α	Yes	4	.55-1(h)	G		
Crude hydrocarbon feedstock (containing Butyraldehydes and Ethylpropyl acrolein)	CHG	3 0	0	С	III	Α	Yes	1	No	G		
Cyclohexanone	ССН	18	0	D	111	Α	Yes	1	.56-1(a), (b)	G		
Cyclohexanone, Cyclohexanol mixture	CYX	18 ²	0	E	Ш	Α	Yes	1	.56-1 (b)	G		



Serial #: C1-1504021 Dated: 17-Sep-15

Certificate of Inspection

Cargo Authority Attachment

Vessel Name: HFL 439

Shipyard: TRINITY MARINE, ASHLAND CITY, TN

Hull #: 5141

Official #: 1262990

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Cargo Identification	Gargo identification									
	Oham	0	O. h					Recovery		NAME OF THE OWNER, OWNE
Name	Chem	Group No	Sub Chapter	Grade	Hull Type	Tank Group	App'd (Y or N)	VCS Category	Special Requirements in 46 CFR 151 General and Mat'ls of	Insp
Cyclohexylamine	CHA	7	0	D	Ш	Α	Yes	1	.56-1(a), (b), (c), (g)	G
Cyclopentadiene, Styrene, Benzene mixture	CSB	30	0	D	Ш	Α	Yes	1	.50-60, .56-1(b)	G
iso-Decyl acrylate	IAI	14	0	E	111	Α	Yes	2	.50-70(a), .50-81(a), (b), .55-1(c)	G
Dichlorobenzene (all isomers)	DBX	36	0	Ε	Ш	Α	Yes	3	.56-1(a), (b)	G
1,1-Dichloroethane	DCH	36	0	С	- 111	Α	Yes	1	No	G
2,2'-Dichloroethyl ether	DEE	41	0	D	- 11	Α	Yes	1	.55-1(f)	G
Dichloromethane	DCM	36	0	NA	111	Α	Yes	5	No	G
2,4-Dichlorophenoxyacetic acid, diethanolamine salt solution	DDE	43	0	E	111	Α	No	N/A	56-1(a), (b), (c), (g)	G
2,4-Dichlorophenoxyacetic acid, dimethylamine salt solution	DAD	0 1,2	0	Α	111	Α	No	N/A	.56-1(a), (b), (c), (g)	G
2,4-Dichlorophenoxyacetic acid, triisopropanolamine salt solution	DTI	43 2	0	E	Ш	Α	No	N/A	.56-1(a), (b), (c), (g)	G
1,1-Dichloropropane	DPB	36	0	С	III	Α	Yes	3	No	G
1,2-Dichloropropane	DPP	36	0	С	III	A	Yes	3	No	G
1,3-Dichloropropane	DPC	36	0	С	III	, A	Yes	3	No	G
1,3-Dichloropropene	DPU	15	0	D	11	A	Yes	4	No	G
Dichloropropene, Dichloropropane mixtures	DMX	15	0	C	 II	A	Yes	1	No	G
Diethanolamine	DEA	8	0	E	III	A	Yes	1	.55-1(c)	G
	DEN	7	0	C	III	A	Yes	3	.55-1(c)	G
Diethylamine Diethylamine	DET	72	0	E					.55-1(c)	G
Diethylenetriamine			2000		111	Α	Yes	1	.55-1(c)	G
Diisobutylamine	DBU	7	0	D	101	Α.	Yes	3		
Diisopropanolamine	DIP	8	0	E	111	A	Yes	1	.55-1(c)	G
Diisopropylamine	DIA	7	0	С	H	Α	Yes	3	.55-1(c)	G
N,N-Dimethylacetamide	DAC	10	0	E	III	Α	Yes	3	.56-1(b)	G
Dimethylethanolamine	DMB	8	0	D	III	Α	Yes	1	.56-1(b), (c)	G
Dimethylformamide	DMF	10	0	D	III	Α	Yes	1	.55-1(e)	G
Di-n-propylamine	DNA	7	0	С	II	Α	Yes	3	.55-1(c)	G
Dodecyldimethylamine, Tetradecyldimethylamine mixture	DOT	7	0	E	III	Α	No	N/A	.56-1(b)	G
Dodecyl diphenyl ether disulfonate solution	DOS	43	0	#	11	Α	No	N/A	No	G
EE Glycol Ether Mixture	EEG	40	0	D	III	Α	No	N/A	No	G
Ethanolamine	MEA	8	0	E	III	Α	Yes	1	.55-1(c)	G
Ethyl acrylate	EAC	14	0	С	III	Α	Yes	2	.50-70(a), .50-81(a), (b)	G
Ethylamine solution (72% or less)	EAN	7	0	Α	H	Α	Yes	6	.55-1(b)	G
N-Ethylbutylamine	EBA	7	0	D	Ш	Α	Yes	3	.55-1(b)	G
N-Ethylcyclohexylamine	ECC	7	0	D	III	Α	Yes	1	.55-1(b)	G
Ethylene cyanohydrin	ETC	20	0	E	III	Α	Yes	1	No	G
Ethylenediamine	EDA	72	0	D	III	Α	Yes	1	.55-1(c)	G
Ethylene dichloride	EDC	36 ²	0	С	III	Α	Yes	1	No	G
Ethylene glycol hexyl ether	EGH	40	0	Е	III	Α	No	N/A	No	G
Ethylene glycol monoalkyl ethers	EGC	40	0	D/E	III	Α	Yes	1	No	G
Ethylene glycol propyl ether	EGP	40	0	E	III	Α	Yes	1	No	G
2-Ethylhexyl acrylate	EAI	14	0	E	Ш	Α	Yes	2	.50-70(a), .50-81(a), (b)	G
Ethyl methacrylate	ETM	14	0	D/E	III	A	Yes	2	.50-70(a)	G
2-Ethyl-3-propylacrolein	EPA	19 ²	0	E	III	A	Yes	1	No	G
Formaldehyde solution (37% to 50%)	FMS	19 ²	0	D/E	III	A	Yes	1	.55-1(h)	G
Furfural	FFA	19	0	D	111	A	Yes	1	.55-1(h)	G
Glutaraldehyde solution (50% or less)	GTA	19	0	NA	111	A	No	N/A	No	G
	HMC	7	0	E				-	.55-1(c)	G
Hexamethylenediamine solution					-	Α	Yes	1	.56-1(b), (c)	G
Hexamethyleneimine Hydrocarbon 5-9	HMI	7	0	С	111	A	Yes	1	.50-70(a), .50-81(a), (b)	G



Cargo Authority Attachment

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Shipyard: TRINITY MARINE, ASHLAND CITY, TN

C1-1504021

17-Sep-15

Hull #: 5141

Cargo Identification	Conditions of Carriage									
The state of the s							Vapor F	Recovery		
Name Isoprene	Chem Code IPR	Compat Group No 30	Sub Chapter O	Grade A	Hull Type III	Tank Group A	App'd (Y or N) Yes	VCS Category	Special Requirements in 46 CFR 151 General and Mat'ls of .50-70(a), .50-81(a), (b)	Insp. Perio
Isoprene, Pentadiene mixture	IPN	30	0	В	III	A		N/A	.50-70(a), .55-1(c)	G
Kraft pulping liquors (free alkali content 3% or more)(including: Black, Green, or White liquor)	KPL	5	0	NA	III	A	No No	N/A	.50-73, .56-1(a), (c), (g)	G
Mesityl oxide	MSO	18 ²	0	D	111	Α	Yes	1	No	G
Methyl acrylate	MAM		0	С	III	A	Yes	2	.50-70(a), .50-81(a), (b)	G
Methylcyclopentadiene dimer	MCK	30	0	C	III	A	Yes	1	No	G
Methyl diethanolamine	MDE	8	0	E	III	A	Yes		.56-1(b), (c)	G
2-Methyl-5-ethylpyridine	MEP	9	0	E	111	A	Yes	1	.55-1(e)	G
Methyl methacrylate	MMM		0	C	III	A	Yes	2	.50-70(a), .50-81(a), (b)	G
2-Methylpyridine	MPR	9	0	D	111	A	Yes	3	.55-1(c)	G
alpha-Methylstyrene	MSR	30	0	D	111	A	Yes	2	.50-70(a), .50-81(a), (b)	G
Morpholine	MPL	7 2	0	D	III	A		1	.55-1(c)	G
Nitroethane	NTE	42	0	D	- 11	×	Yes		.50-81, .56-1(b)	G
1- or 2-Nitropropane	NPM	42	0	D		Α	No	N/A 1	.50-81	G
1.3-Pentadiene	PDE	30	0	A	III	Α	Yes	7	.50-70(a), .50-81	G
	PER					Α .	Yes		No	G
Perchloroethylene	-	36	0	NA	III	A	No	N/A	.55-1(e)	G
Polyethylene polyamines	PEB	72	0	E	III	Α .	Yes	1		
iso-Propanolamine	MPA	8	0	E	111	A	Yes	1	.55-1(c)	
Propanolamine (iso-, n-)	PAX	8	0	E	III	A	Yes	1	.56-1(b), (c)	G
iso-Propylamine	IPP	7	0	A	11	A	Yes	5	.55-1(c)	G
Pyridine Communication (Communication)	PRD	9	0	С	III	A	Yes	1	.55-1(e)	G
Sodium acetate, Glycol, Water mixture (3% or more Sodium Hydroxide	-	5	0		III	A	No	N/A	.50-73, .55-1(j)	G
Sodium aluminate solution (45% or less)	SAU	5	0	NA	III	A	No	N/A	.50-73, .56-1(a), (b), (c)	G
Sodium chlorate solution (50% or less)	SDD	0 1,2		NA	III	Α	No	N/A	.50-73	G
Sodium hypochlorite solution (20% or less)	SHQ	5	0	NA	III	Α	No	N/A	.50-73, .56-1(a), (b)	G
Sodium sulfide, hydrosulfide solution (H2S 15 ppm or less)	SSH	0 1,2		NA	III	Α	Yes	1	.50-73, .55-1(b)	G
Sodium sulfide, hydrosulfide solution (H2S greater than 15 ppm but less than 200 ppm)	SSI	0 1,2		NA	III	Α	No	N/A	.50-73, .55-1(b)	G
Sodium sulfide, hydrosulfide solution (H2S greater than 200 ppm)	SSJ	0 1,2	0	NA	ll .	Α	No	N/A	.50-73, .55-1(b)	G
Styrene (crude)	STX	30	0	D	III	Α	Yes	2	No	G
Styrene monomer	STY	30	0	D	111	Α	Yes	2	.50-70(a), .50-81(a), (b)	G
1,1,2,2-Tetrachloroethane	TEC	36	0	NA	III	Α	No	N/A	No	G
Tetraethylenepentamine	ПΡ	7	0	E	III	Α	Yes	1	.55-1(c)	G
Tetrahydrofuran	THF	41	0	C	III	Α	Yes	1	.50-70(b)	G
Toluenediamine	TDA	9	0	E	II	Α	No	N/A	.50-73, .56-1(a), (b), (c), (g)	G
1,2,4-Trichlorobenzene	TCB	36	0	E	III	Α	Yes	1	No	G
1,1,2-Trichloroethane	TCM	36	0	NA	III	Α	Yes	1	.50-73, .56-1(a)	G
Trichloroethylene	TCL	36 ²	0	NA	III	Α	Yes	1	No	G
1,2,3-Trichloropropane	TCN	36	0	E	II	Α	Yes	3	.50-73, .56-1(a)	G
Triethanolamine	TEA	8 2	0	E	III	Α	Yes	1	.55-1(b)	G
Triethylamine	TEN	7	0	С	II	Α	Yes	3	.55-1(e)	G
Triethylenetetramine	TET	7 2	0	E	III	Α	Yes	1	.55-1(b)	G
Triphenylborane (10% or less), caustic soda solution	TPB	5	0	NA	III	Α	No	N/A	.56-1(a), (b), (c)	G
Trisodium phosphate solution	TSP	5	0	NA	III	Α	No	N/A	.50-73, .56-1(a), (c).	G
Urea, Ammonium nitrate solution (containing more than 2% NH3)	UAS	6	0	NA	III	Α	No	N/A	.56-1(b)	G
Vanillin black liquor (free alkali content, 3% or more).	VBL	5	0	NA	111	Α	No	N/A	.50-73, .56-1(a), (c), (g)	G
Vinyl acetate	VAM	13	0	С	III	Α	Yes	2	.50-70(a), .50-81(a), (b)	G
Vinyl neodecanate	VND	13	0	E	III	Α	No	N/A	.50-70(a), .50-81(a), (b)	G



Cargo Authority Attachment

Vessel Name: HFL 439
Official #: 1262990

Shipyard: TRINITY MARINE, ASHLAND CITY, TN

C1-1504021

Hull #: 5141

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Cargo Identification	n				33		lineh	Condi	tions of Carriage	
Name Vinyltoluene	Chem Code VNT	Compat Group No 13	Sub Chapter O	Grade D	Hull Type III	Tank Group A	App'd (Y or N) Yes	Recovery VCS Category 2	Special Requirements in 46 CFR 151 General and Mat'ls of .50-70(a), .50-81, .56-1(a), (b), (c), (Insp. Period G
Subchapter D Cargoes Authorized for Vapor Cont	rol	- 0					-			
Acetone	ACT	18 ²	D	С		Α	Yes	1		HE THE
Acetophenone	ACP	18	D	E		Α	Yes	1		
Alcohol(C12-C16) poly(1-6)ethoxylates	APU	20	D	E		Α	Yes	1		
Alcohol(C6-C17)(secondary) poly(7-12)ethoxylates	AEB	20	D	E		Α	Yes	1		- (1) 10 mm
Amyl acetate (all isomers)	AEC	34	D	D		Α	Yes	1		
Amyl alcohol (iso-, n-, sec-, primary)	AAI	20	D	D		Α	Yes	1		
Benzyl alcohol	BAL	21	D	E		Α	Yes	1		
Brake fluid base mixtures (containing Poly(2-8)alkylene(C2-C3) glycols, Polyalkylene(C2-C10) glycol monoalkyl(C1-C4) ethers, and their borate esters)	BFX	20	D	E	#4 #4	Α	Yes	1	entra p	
Butyl acetate (all isomers)	BAX	34	D	D	44	Α	Yes	1		ille i e
Butyl alcohol (iso-)	IAL	20 ²	D	D	11-	Â	Yes	1	9	marile or the
Butyl alcohol (n-)	BAN	20 ²	D	D		Α	Yes	1	grango sem	01.2-00
Butyl alcohol (sec-)	BAS	20 2	D	С	7.7	Α	Yes	1	100	-0994
Butyl alcohol (tert-)	BAT	20 2	D	C	39	Α	Yes	1	6000 30	cognicio
Butyl benzyl phthalate	BPH	34	D	E b	3%	Α	Yes	1	Ferningstor are	wadin kr
Butyl foluene	BUE	32	D	D	284	Α	Yes	1	ar Francisco	man Au
Caprolactam solutions	CLS	22	D	E		Α	Yes	1	(arr scall) assists	sioge 1 7f
Cyclohexane	CHX	31	D	С		Α	Yes	1	Shuas	No. nº 1 ne
Cyclohexanol	CHN	20	D	E	99	A	Yes	1		SELECT
1,3-Cyclopentadiene dimer (molten)	CPD	30	D	D/E	A3 (ab	Α	Yes	2	Chambing Makey Alectic Intake	in musico
p-Cymene Page 1991	CMP	32	D	D		A	Yes	1	cased no stable may be according	is madeoi
iso-Decaldehyde	IDA	19	D	E		A	Yes	1	Feed to 2021 notices atmosp	to respect
n-Decaldehyde	DAL	19	D	E	18	A	Yes	1	sas a 20% noticios sinolicas	of muscoi
Decene	DCE	30	D	D	88	Α	Yes	1	ESPA pabolos estilae strat esiss	a multiple
Decyl alcohol (all isomers)	DAX	20 2	D	E	20	Α	Yes	1		an on thos
n-Decylbenzene, see Alkyl(C9+)benzenes	DBZ	32	D	E		Α	Yes	1	166.000	
Diacetone alcohol	DAA	20 ²	D	D	Bel I	Α	Yes	1	MITS, 1980 E. STADA SOLUTION D'20	AT PAGEO
ortho-Dibutyl phthalate	DPA	34	D	E	18	Α	Yes	1	(600)	
Diethylbenzene	DEB	32	D	D		Α	Yes	1	10/11/28%	
Diethylene glycol	DEG	40 2	D	E	30	A	Yes	1	en interpetituari	01-52-1
Diisobutylene	DBL	30	D	С	7.11	A	Yes	1	3776607800579	
Diisobutyl ketone	DIK	18	D	D	71	A	Yes	1	1950	N. Sept. Market
Diisopropylbenzene (all isomers)	DIX	32	D	E		A	Yes	1	personal per	
Dimethyl phthalate	DTL	34	D	E		Α	Yes	1		CHI-F.E.
Dioctyl phthalate	DOP	34	D	E	TE	A	Yes	1	ectupperox	1011-1
Dipentene	DPN	30	D	D		A	Yes	1	603/7	SELECTED AND
Diphenyl	DIL	32	D	D/E		A	Yes	1	and the company of	10000
Diphenyl, Diphenyl ether mixtures	DDO	33	D	E		A	Yes	1	armer armer	in a rest
Diphenyl ether	DPE	41	D	{E}		A	Yes	1	(8)	The State of the S
Dipropylene glycol	DPG	40	D	E		A	Yes	1	8/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1	100000
Distillates: Flashed feed stocks	DFF	33	D	E	41	A	Yes	1	no one o the out persons	
Distillates: Straight run	DSR	33	D	E		A	Yes	1	common standards	100
Dodecene (all isomers)	DOZ	30	D	D		A	Yes	1	MIDDLE OF THE PART OF THE SHIP OF	WITH SHOP
Dodecylbenzene, see Alkyl(C9+)benzenes	DDB	32	D	E		A	Yes	1	TO 1904 ROLL BOOK SOUPE SOU	BQ /NOSE vo
2-Ethoxyethyl acetate	EEA	34	D	D	aw	A	Yes	1		PECS REV



Cargo Authority Attachment

Vessel Name: HFL 439

Official,#: 1262990

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Shipyard: TRINITY MARINE, ASHLAND CITY, TN

C1-1504021

17-Sep-15

Hull #: 5141

Cargo Identificat	ion					Conditions of Carriage						
gen 1955 in night a separation 250 Right and	3 4 4						Vapor Recovery					
Name Ethoxy triglycol (crude)	Chem	Compat Group No	The state of the s	1	Hull Type	Tank Group	App'd (Y or N)	VCS Category	Special Requirements in 46 CFR 151 General and Mat'ls of	Insp. Period		
Ethyl acetate	ETG	40	D	E		A	Yes	1	States and the state of the sta	and Nebe		
	ETA	34	D	С		A	Yes	1		AND WITTE		
City acetoacetate	EAA	34	D	Е		Α	Yes	1		mes brings		
Ethyl alcohol	EAL	20 2	D	С		A	Yes	1				
Ethylbenzene Ethyl bytonel	ETB	32	D	С		Α	Yes	1				
Luiyi bularioi	EBT	20	D	D		A	Yes	1	The Real Property			
Ethyl tert-butyl ether	EBE	41	D	С		Α	Yes	1		Market S		
Ethyl butyrate	EBR	34	D	D		A	Yes	1 ,		SHIPLY S		
Ethyl cyclohexane	ECY	31	D	D		Α	Yes	1	E STATE OF THE STA	1 SERVICE		
Ethylene glycol	EGL	20 2	D	E		Α	Yes	1	Thursday (Control of the Control of	- Grandi		
Ethylene glycol butyl ether acetate	EMA	34	D	E		Α	Yes	1	100706			
Ethylene glycol diacetate	EGY	34	D	E		Α	Yes	1	1860 No. 71 30 Kie	- 1000000		
Ethylene glycol phenyl ether	EPE	40	D	E	4.00	Α	Yes	1	DE PARTICIPATA MANAGEMENT PARTICIPAT			
Ethyl-3-ethoxypropionate	EEP	34	D	D	rsia.	Α	Yes	1	COUNTRY BY LEGISLATER	5) STATE		
2-Ethylhexanol	EHX	20	D	E	140	Α	Yes	1	Section 18			
Ethyl propionate	EPR	34	D	С		Α	Yes	1	(etchion ray fore	one who		
Ethyl toluene	ETE	32	D	D	1911	Α	Yes	1	100	ONE IVO		
Formamide	FAM	10	D	E	10.7	A	Yes	1	CONTRACTOR SERVING TOLD			
Furfuryl alcohol	FAL	20 ²	D	E	30	A	Yes	1	CONTRACTOR SERVICE (EXCITATION A	IST BUT BUT IN		
Gasoline blending stocks: Alkylates	GAK	33	D	A/C	1900	A	Yes	1				
Gasoline blending stocks: Reformates	GRF	33	D	A/C		A	Yes	1				
Gasolines: Automotive (containing not over 4.23 grams lead per gallon)	GAT	33	D	C	ro	A	Yes	1				
Gasolines: Aviation (containing not over 4.86 grams of lead per gallon)	GAV	33	D	С		Α	Yes	1				
Gasolines: Casinghead (natural)	GCS	33	D	A/C		Α	Yes	1	1.01			
Gasolines: Polymer	GPL	33	D	A/C		A	Yes	1	2.00	13894 67		
Gasolines: Straight run	GSR	33	D	A/C		A	Yes	1	9.64	1,794,6		
Glycerine	GCR	20 ²	D	E		A	Yes	1	, charto			
Heptane (all isomers), see Alkanes (C6-C9) (all isomers)	HMX	31	D	C		A	Yes	1	figure 1	Later la		
Heptanoic acid	HEP	4	D	E		A	Yes	1	Rest (1991 905)	est un de		
Heptanol (all isomers)	HTX	20	D	D/E		A	Yes	1	acesensia.	nation it		
Heptene (all isomers)	HPX	30	D	C		A	Yes	2	70,63307	pám, it		
Heptyl acetate	HPE	34	D	E	0	A	Yes		9010307	M. Feller		
Hexane (all isomers), see Alkanes (C6-C9)	HXS	31 2	D	B/C		A		1	(Eship te	BORRES		
Hexanoic acid	HXO	4	D	E			Yes		(see most sign	LOT SEE		
Hexanol	HXN	20	D		33	A	Yes	1	elatoriès.			
Hexene (all isomers)	HEX			D		A	Yes	1	6/19	ili snet		
Hexylene glycol	HXG	30	D O	С		A	Yes	2		ent's eta		
Sophorone		20	D	E		A	Yes	1	Call College of boyle angletic	200		
Jet fuel: JP-4	JPF	18 2	D	-	19	A	Yes	1,,,,,	CETONAL CONTROL CONTRO	ks.shdp4		
Jet fuel: JP-5 (kerosene, heavy)		33	D	_	.9	A	Yes	1				
Kerosene	JPV	33	D	-	79	A	Yes	1	looyia eneti			
Methyl acetate	KRS	33	D	_		Α	Yes	1	stateou k			
	MTT	34		_	19	Α	Yes	1	ahaliksid			
Methyl alcohol	MAL	20 2			q	Α	Yes	1 -	iortopia fi			
Methylamyl acetate	MAC	34		5.82 T	9	Α	Yes	1				
Methylamyl alcohol	MAA	20		D	iq.	Α	Yes	11	(anartegat Ke) generate	ogliner 6		
Methyl amyl ketone	MAK	18		D	GI.	Α	Yes	1		0.09-00		
Methyl tert-butyl ether	MBE	41 2	D	С		Α	Yes	1				



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Certificate of Inspection

Cargo Authority Attachment

Official #: 1262990

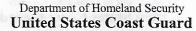
Vessel Name: HFL 439

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Shipyard: TRINITY MARINE, ASHLAND CITY, TN

Hull #: 5141

Cargo Identification						Conditions of Carriage					
		1						Recovery	Outsid Demoisses to 46 CED		
Name	Chem	Group No	Sub Chapter	Grade	Hull Type	Tank Group	App'd (Y or N)	VCS Category	Special Requirements in 46 CFR 151 General and Mat'ls of	Insp.	
Methyl butyl ketone	MBK	18	D	c		Α	Yes	1	The second second	and the same	
Methyl butyrate	MBU	34	D	С	14	Α	Yes	1			
Methyl ethyl ketone	MEK	18 ²	D	С		Α	Yes	1			
Methyl heptyl ketone	MHK	18	D	D		Α	Yes	1			
Methyl isobutyl ketone	MIK	18 ²	D	С		Α	Yes	1			
Methyl naphthalene (molten)	MNA	32	D	Е		Α	Yes	1			
	MNS	33	D	D		Α	Yes	1		a to see her	
Mineral spirits	MRE	30	D	D		A	Yes	1			
Myrcene	NAG	33	D	#		Α	Yes	1		Maria In	
Naphtha: Heavy	PTN	33	D	#		Α	Yes	1			
Naphtha: Petroleum	NSV	33	D	D	- 100	A	Yes	1			
Naphtha: Solvent	NSS	33	D	D		A	Yes	1			
Naphtha: Stoddard solvent	NVM	33	D	С		A	Yes	1			
Naphtha: Varnish makers and painters (75%)				D		A	Yes	1			
Nonane (all isomers), see Alkanes (C6-C9)	NAX	31	D	D		A	Yes	2	1910/201	Charles and	
Nonene (all isomers)	NON	30			-		Yes	1			
Nonyl alcohol (all isomers)	NNS	20 2	D	E		A		1	She're		
Nonyl phenol	NNP	21	D	E	oTil.	A	Yes				
Nonyl phenol poly(4+)ethoxylates	NPE	40	D	E	4-3	A	Yes	1			
Octane (all isomers), see Alkanes (C6-C9)	OAX	31	D	С	144	Α	Yes	1		NOT BUILT	
Octanoic acid (all isomers)	OAY	4	D	E	453	A	Yes	1	products as a transaction	d posts	
Octanol (all isomers)	OCX	20 ²	D	E	100	Α .	Yes	1	and a second and the second and	d anilos	
Octene (all isomers)	OTX	30	D	С	143	Α	Yes	2	Spirit Spirit Spirit State (1997)	-parellos	
Oil, fuel: No. 2	OTW	33	D	D/E		Α	Yes	1		(110)	
Oil, fuel: No. 2-D	OTD	33	D	D	MO.	Α	Yes	1	& Estado para participado pressur A	emilos	
Oil, fuel: No. 4	OFR	33	D	D/E		Α	Yes	1			
Oil, fuel: No. 5	OFV	33	D	D/E		Α	Yes	1	The Children Control of the Control		
Oil, fuel: No. 6	OSX	33	D	E		Α	Yes	1	5,70		
Oil, misc: Crude	OIL	33	D	A/D		Α	Yes	1	- managed by the state of the s		
Oil, misc: Diesel	ODS	33	D	D/E		Α	Yes	1			
Oil, misc: Gas, high pour	OGP	33	D	E	A STATE	Α	Yes	1	(CEST) BROWN - 43 COMM		
Oil, misc: Lubricating	OLB	33	D	E		Α	Yes	1			
Oil, misc: Residual	ORL	33	D	E		Α	Yes	1	(-Ratiosri		
Oil, misc: Turbine	OTB	33	D	E		Α	Yes	1	(analysis)	m) ones	
Pentane (all isomers)	PTY	31	D	Α		Α	Yes	5	La significant de la significa	James A. S.	
Pentene (all isomers)	PTX	30	D	Α	231	Α	Yes	5			
n-Pentyl propionate	PPE	34	D	D		Α	Yes	1	tale to the second seco	a piona	
alpha-Pinene	PIO	30	D	D	MX21	Α	Yes	1			
beta-Pinene	PIP	30	D	D		Α	Yes	1	saymers)		
Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether	PAG	40	D	E		Α	Yes	1	la o _k		
Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether acetate	PAF		D	E	71	Α	Yes			50000	
	PLB	30	D	E	ARE	Α	Yes	1		AL faul	
Polybutene Polybutene	PGC		D	E	VSE	Α	Yes		WARE DESIGNATION		
Polypropylene glycol	IAC	34	D	С	KRS	Α	Yes				
iso-Propyi acetate	PAT		D	С	1701	Α	Yes			dans ly	
n-Propyi acetate	IPA	20 2	D	С	143V	A	Yes		100	Ed la la	
iso-Propyi alconoi	PAL		D	С	DANG	A	Yes		o's lets	lymaly	
n-Propyl alcohol	PBY		D	D	7,416	A	Yes		lodo Ar	hansha	
Propylbenzene (all isomers) iso-Propylcyclohexane	IPX	31	D	D	2.355	A	Yes		anolas	lymes by	





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Certificate of Inspection

Cargo Authority Attachment

Vessel Name: HFL 439

Official #: 1262990

Shipyard: TRINITY MARINE,

ASHLAND CITY, TN

Hull #: 5141

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Cargo Identification						Conditions of Carriage					
3 min 1761 h	STREET STREET	0.753	1 000	1	400	AD BAR	Vapor Recovery		River and the second	moud	
Assessed (SEC) and one	Chem	Compat	Sub	Crada	Hull	Tank	App'd	VCS	Special Requirements in 46 CFR	Insp.	
Name	Code	Group No			Type	Group		Category	151 General and Mat'ls of	Period	
Propylene glycol			D	E		Α	Yes		Service and the service of the service of		
Propylene glycol methyl ether acetate	PGN	34	D	D		Α	Yes	1	30 1 2 2 2 2 2 3 W		
Propylene tetramer	PTT	30	D	D		Α	Yes	1			
Sulfolane	SFL	39	D	E		Α	Yes	1			
Tetraethylene glycol	TTG	40	D	E		Α	Yes	1			
Tetrahydronaphthalene	THN	32	D	E		Α	Yes	1			
Toluene	TOL	32	D	С	7 1 440	Α	Yes	1	SAVANTASIAN SANSA SAVANT		
Tricresyl phosphate (less than 1% of the ortho isomer)	TCP	34	D	E		Α	Yes	1 .	A STANDARD CO.	0000	
Triethylbenzene	TEB	32	D	E		Α	Yes	1		elsoi	
Triethylene glycol	TEG	40	D	E		Α	Yes	1	and the and provide		
Triethyl phosphate	TPS	34	D	E		Α	Yes	1	deschause de la company		
Trimethylbenzene (all isomers)	TRE	32	D	{D}		Α	Yes	1	Billion (1900)		
Trixylenyl phosphate	TRP	34	D	E		, A	Yes	1	ALCOHOL:		
Undecene	UDC	30	D	D/E		Α	Yes	1	Paddal Haller		
1-Undecyl alcohol	UND	20	D	E		Α	Yes	1			
Xylenes (ortho-, meta-, para-)	XLX	32	D	D		Α	Yes	1	Fig. Conference and a		



Department of Homeland Security **United States Coast Guard**

Serial #: C1-1504021

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Certificate of Inspection

Cargo Authority Attachment

Vessel Name: HFL 439 Official #: 1262990

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Shipyard: TRINITY MARI

Hull #: 5141

Explanation of terms & symbols used in the Table:

Cargo Identification

Chem Code

Compatability Group No.

Note 1

Note 2

Subchapter

Subchapter D Subchapter O

Grade

A, B, C Note 4

NA

Hull Type

Ш NA

The proper shipping name as listed in 46 CFR Table 30.25-1, 46 CFR Table 151.05, and 46 CFR Part 153 Table 2. The three letter designation assigned to the cargo in the Chemical Hazards Response Information System (CHRIS) Manual. Certain mixtures of cargoes may not have a CHRIS Code assigned.

The cargo reactive group number assigned for compatibility determinations in 46 CFR Part 150 Tables I and II. In accordance with 46 CFR 150.130, the Person-in-Charge of the barge is responsible for ensuring that the compatibility requirements of 46 CFR Part 150 are met. Cargoes must be checked for compatibility using the figures, tables

and appendices of 46 CFR 150 in conjunction with the assigned reactive group number. Because of the very high reactivity or unusual conditions of carriage or potential compatibility problems, this product is not assigned to a specific group in the Compatibility Chart. For additional compatibility information, contact Commandant (CG-3PSO-3), U.S. Coast Guard, 2100 Second Street, SW, Washington, DC 20593-0001. Telephone (202) 372-1425.

See Appendix I to 46 CFR Part 150 - exceptions to the compatability chart.

The subchapter in Title 46 Code of Federal Regulations under which the cargo has been classified

Those flammable and combustible liquids listed in 46 CFR Table 30,25-1.

Those hazardous cargoes listed in 46 CFR Table 151.05 and 46 CFR Part 153 Table 2.

Those cargoes listed in 46 CFR Part 153 Table 2 are non-regulated cargoes when carried in bulk on non-oceangoing barges

The cargo classification assigned to each flammable or combustible liquid. Grades inside of 🍕 🏋 indicate a provisional assignment based upon literature sources which were not verified by manufacturers data. The Person-in-Charge shall verify the cargo grade based on Manufacturers data and ensure that the barge is authorized for carriage of that grade of cargo.

Flammable liquid cargoes, as defined in 46 CFR 30-10.22. Combustible liquid cargoes, as defined in 46 CFR 30-10.15.

Not applicable to barges certificated under Subchapter D.

The flammability/combustibility grade of these cargoes may vary depending upon the flashpoint and Reid vapor pressure. The Person-in-Charge shall verify the cargo grade based on Manufacturers data and ensure that the barge is authorized for carriage of that grade of cargo. Those subchapter O cargoes which are not classified as a flammable or combustible liquid.

No flammability/combustibility grade has been assigned yet, as the necessary flash point/vapor pressure data for such assignments are presently not available.

The required barge hull classification for carriage of the specified Subchapter O hazardous material cargo, see 46 CFR 151.10-1.

Designed to carry products which require the maximum preventive measures to preclude the uncontrolled release of the cargo. See 46 CFR 151.10-1(b)(1). Designed to carry products which require significant preventive measures to preclude the uncontrolled release of cargo. See 46 CFR 151.10-1(b)(3). Designed to carry products of sufficeint hazard to require a moderate degree of control. See 46 CFR 151.10-1(b)(4).

Conditions of Carriage

Tank Group Vapor Recover Approved (Y or N) The vessel's tank group (as defined in Section 4) which is authorized for carriage of the named cargo.

Yes: The vessel's VCS has been reviewed and approved by the MSC to control vapors of the specified cargo. No: The vessel's VCS has been reviewed and is not approved by the MSC to control vapors of the specified cargo.

Conditions of Carriage

Tank Group Vapor Recovery Approved (Y or N) The vessel's tank group (as defined under the "46 CFR Tank Group Characteristics" listed on page 1) which is authorized for carriage of the named cargo.

Yes: The vessel's VCS has been reviewed and approved by the MSC to control vapors of the specified cargo No: The vessel's VCS has been reviewed and is not approved by the MSC to control vapors of the specified cargo.

VCS Category:

Category 1

The specified cargo's provisional classification for vapor control systems.

(No additional VCS requirements above those for benzene, gasolines and crude oil) All requirements applying to the handling of oil and hazardous materials in Titles 33 and 46 Code of Federal Regulations (CFR) apply to these cargoes. Those specifically dealing with vapor control systems are in 33 CFR 155.750, 33 CFR 156.120, 33 CFR 156.170, 46 CFR 35.35 and 46 CFR 39. The cargo tank venting system calculations (46 CFR 39.20-11) and the pressure drop calculations (46 CFR 39.30-1(b)) must use appropriate friction factors, vapor densities and vapor growth rates.

Category 2

(Polymerizes) Polymerization and residue build-up of these cargoes can adversely affect the vessel by fouling safety componenets and restricting vapor flow which could lead to cargo tank overpressurization. The vessel's owner must develop a method of ensuring all VCS safety components are functional and polymer build-up is not causing an unsafe condition due to increased pressure in the vapor control piping and cargo tanks. The method shall be acceptable to the local Officer in Charge, Marine Inspection. This is in addition to the requirements of Category 1. Please note that a material not normally considered a monomer can be a problem in detonation

Category 3

(Highly toxic) VCSs for these toxic cargoes cannot use a spill valve or rupture disk as the primary means to meet the overfill protection requirement of 46 CFR 39.20-9. This requirement is in addition to the requirements of Category 1.

Category 4

(Polymerizes and highly toxic) Must comply with requirements of Categories 1, 2 and 3,

Category 5

(High vapor pressure) VCS pressure drop calculations for cargoes with a vapor pressure greater than 14.7 psia at 115 F must take into account increased vapor-air mixture densities and vapor growth rates as compared to Category 1 cargoes. Consult the Marine Safety Center's VCS Guidelines for further information. This requirement is in addition to the requirements of Category 1.

Category 6 Category 7

(High vapor pressure and highly toxic) Must comply with requirements of Categories 1, 3 and 5. (High vapor pressure and polymerizes) Must comply with requirements of Categories 1, 2 and 5.

none

The cargo has not been evaluated/classified for use in vapor control systems.