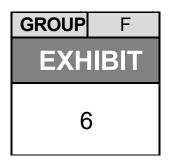


## National Transportation Safety Board Investigative Hearing

Norfolk Southern Railway general merchandise freight train 32N derailment with subsequent hazardous material release and fires, in East Palestine, Ohio, on February 3, 2023



Agency / Organization

## **Federal Railroad Administration**

Title

## Filling Density Calculation OCPX 080370

Docket ID: DCA23HR001

Tank Car Filling Limit & Filling Density Calculations										
Tank Number		OCPX 080370		Commodity Name						
Tank Specification		105J300W		VINYL CHLORIDE STAE				7ED		
Tank Capa	city (gals)	24,620			VINYL CHLORIL			ZED		
Load Limit		182,200		Hazard		ID N.	11014000	500		
Light Weig	. ,		,800	Class	2.1	ID No.	UN1086	PG		
Scale Weig	ght (lbs)	250	6,900	Scale Ty	pe :	Motion		Static		
Use this section for Filling Density Calculations!										
Is the product Chlorine, Hydrogen sulfide, Nitrosyl chloride, Sulfur dioxide or Sulfuryl fluoride? If yes, then										
enter an "X" to the right of the product name below; otherwise, go to the Filling Limit calculation section (green).										
Chlorina		Hydrogen		Nitrosyl		Sulfur		Sulfuryl		
Chlorine		sulfide		chloride		dioxide		fluoride		
Use this section for Filling Limit Calculations!										
Step 1 : Determine the appropriate Reference Temp. °F, enter an "X" in one of the six applicable boxes below:										
For Liquefied Petroleum Gas & Anhydrous Ammonia (Nov. → March) ONLY !										
		Insulated Tank 85 °F								
		Quasi-Inst	Quasi-Insulated Tank (DOT 112J or 114J) 90 °							
	Non-Insulated Tank				100 °F					
ĺ	For LF	G & Anhyo	Irous Ammor	nia (April → C	Oct) & All	other prod	ucts year r	ound!		
Insulated Tank				105 °F				_		
Quasi			asi-Insulated Tank (DOT 112J or 114J) 1							
		Non-Insulated Tank 115 °F						_		
Step 2: Enter an "X" in one of the applicable three boxes below:										
Toxic Inhalation Hazard										
Anhydrous Ammonia or Ammonia > 50%										
All Other Materials										
Step 3:	: Enter Specific Gravity @ Reference Temperature of						°F	9.0	91	
"Optional" for Filling Limit or Filling Density Calculations										
Enter product <u>loading</u> temperature in °F										
Enter specific gravity @ <u>loading</u> temperat				ure			0.9121			
Click HERE for Results										
							182,200	lbs.	NO	
Number of lbs. exceeding the Load Limit (LD LMT)								C		
Max. allowable weight using Filling Limit (FL) calculations (lbs.) or,								182,200		
Max. allowable weight using Filling Density (FD) calculations (lbs.)								,		
Number of lbs. exceeding the Filling Limit or Filling Density requirement								0		
FL: Is the tank overfilled by volume @ reference temp.							°F	NO		
FL: Calculated volume in gals @ reference temp.							°F	23,236		
FL & FD: Max. gallons allowed @ loading temp. 69.33							°F	23,986		
FL & FD: Number of gallons filled @ loading temp. 69.33						69.33	°F	23,183		
3							°F	0		
FL & FD: Number of gallons required to reduce the volume to meet §173.24b(a)								0		