

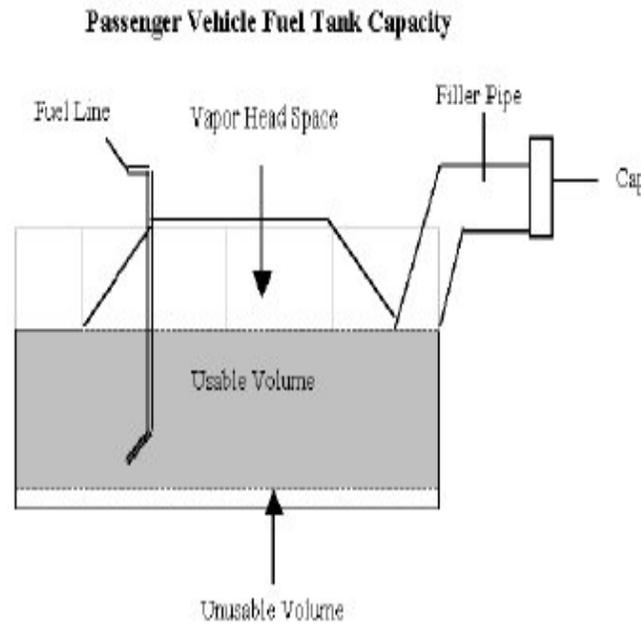
For additional information concerning fuel tank capacity please visit:

<https://www.agriculture.nh.gov/publications-forms/documents/fuel-tank-capacity.pdf>

Or

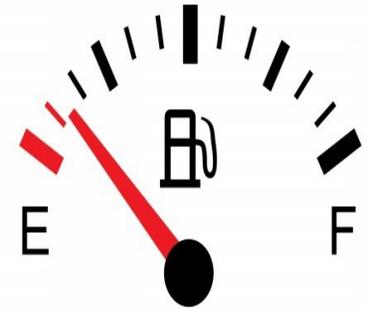
<https://www.nist.gov/>

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The Bucks County Commissioners

## Fuel Tank Capacity and Gas Pump Accuracy



**Bucks County  
Department of  
Consumer Protection/  
Weights & Measures**

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Doylestown, PA 18901**

**215-348-6060  
1-800-942-2669**

**[www.BucksCounty.gov/  
ConsumerProtection](http://www.BucksCounty.gov/ConsumerProtection)**



You fill up your "empty" fuel tank at the gas station and the pump charges you for more gallons than the tank's rated capacity. Are you being deliberately overcharged? NIST's (National Institute of Standards and Technology) weight and measures experts explains why this may happen even at reputable gas stations.

## Rated Capacity vs. Actual Fuel Tank Capacity

The vehicle's fuel tank capacity rating is a reasonable approximation given variables such as differences in design practices, test procedures, and other influence factors on the fuel system. Some manufacturers estimate that fuel tank capacity can vary by as much as 3 % from the actual tank capacity as a result of normal variations in design characteristics, the manufacturing process, and other inherent factors such as the physics associated with components and the electronics in the fuel system and fuel level indications.

Knowing the vehicle's fuel tank capacity provides the driver with information needed to plan driving distance, refueling stops, fuel costs, etc., associated with highway travel. Tank capacity is also a factor used by vehicle components that monitor emissions and other on-board diagnostic equipment that affect fuel level indications. Typically, the owner's manual provides a **reasonable estimate** of the vehicle's fuel tank capacity volume.

Drivers might find that a vehicle's fuel tank capacity rating includes only the usable portion of the tank's liquid capacity (shown in the diagram on the back of this brochure) or both the usable and unusable portion of the tank's liquid capacity.

The unusable volume is the portion of the fuel tank's liquid capacity that lies at the bottom of the tank out of reach of the fuel pump.

The usable volume is the portion of the fuel tank's liquid capacity that can be delivered through the filler pipe into the tank when the vehicle is level (and when the unusable volume is also in the tank). The vehicle's fuel tank capacity does not include the vapor headspace (that portion of the tank compartment at a level above the filler pipe neck) or the volume of the filler pipe.

Sometimes drivers ignore the pump nozzle's automatic shut-off and continue to hold the nozzle operating the lever open in an attempt to deliver additional fuel.

When this happens, the additional fuel begins to fill the vapor headspace and the filler pipe that are not considered part of the tank's rated capacity, thus resulting in a delivery of fuel greater than the fuel tank capacity rating stated in the owner's manual.

Similarly, the lanes that surround the service station pumps may not be level and fuel may shift into the vapor space thus allowing more fuel to be delivered into the tank.