



### Crude Oil Basics

The origin of crude oil has a significant impact upon how the fuel behaves, how long it will last, and the type of additives needed. One barrel of crude oil is 42 gallons and yields 47 gallons of product whether it is asphalts, plastics, medicines, chemicals, fuels, gasoline, fuel oil, kerosene, diesel, jet fuel or LP gas. Crude oil contains about 87% carbon, 12% hydrogen and other materials such as oxygen, sulfur, nitrogen, helium, and metals (nickel, vanadium, bitumen and other metals). Why is this important, it is important because where the crude oil comes from will dictate how much additional materials are contained and therefore how much processing is necessary to develop the desired product.

Sweet crude has a low sulfur content which means less processing to refine and is more stable when refined, whereas sour crude has a high sulfur content and the sulfur must be removed by water or chemical cracking. The sweeter the crude, the more expensive it is and the least amount of processing/refining costs. Whereas sour crude is less expensive but costs more to process/refine.

Light crude has a higher API gravity (lower density), typically greater than 10 which means it is lighter than water and will float. Heavy crude has a lower API Gravity (Higher density), typically under 10 which means it is heavier than water and will sink. Heavier crude requires extra refining to remove sulfur, nickel, vanadium, and bitumen.

Crude Oil Characteristics by Location

