



Ask A Scientist[©]

Environmental Earth
Science Archive



Oil to Gasoline

6/11/2004

name BERNIE
status other
age 60s

Question - HOW MANY GAL.OF CRUDE OIL IN A BARREL? HOW MANY GAL OF GAS
DOES THAT EQUAL?

There are 42 gallons / barrel of crude oil. The conversion to gasoline depends upon several factors -- refining efficiency, product mix desired by the refiner, quality of the crude to name a few. The following sites provide additional info.

<http://www.petroleum.org/petrokids/petroperbbl.htm>
<http://www.newton.dep.anl.gov/askasci/gen99/gen99675.htm>

Vince Calder

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A barrel contains 42 gallons. After refining, it makes about 19.5 gallons of gasoline in addition to numerous other products such as heating oil..

If you can get to the web,
<http://www.petroleum.org/petrokids/petroperbbl.htm>
has many interesting numbers related to your question.

Best, Dick Plano, Professor of Physics emeritus, Rutgers University

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Bernie,

Most of us know that the standard measure for petrol products, crude, light sweet etc... is the BBL (barrel). This is exactly equal to 42 gallons. Whether it is milk or molten uranium or gas or crude oil...1 BBL (barrel) is 42 gallon (US)

I do not know the exact ratio of octane 87 gas to brent oil, light sweet blend, or crude oil. This is because "OIL" is made up of many constituents. It has many long changed hydrocarbons that determine its energy content. Refineries of the OPEC nations, or just in general already know this from years of experience. In order to not waste any of the crude oil, chemical engineers will perform hydro-cracking which will cleave the longer (CRUDEr) oil chains into smaller more volatile compounds. Why is this done? This is

done so that while distilling the "OIL" engineers will not be able to separate the oil with greater ease and efficiency.

Someone once told me that there was a rule of thumb for how many gallons of "gasoline" you can get from one gallon of crude. I don't wish to repeat it since I don't recall which blend it was for. I hope that I've helped you some even though I haven't fully answered your 2nd question.

Regards,
Darin

=====
My old CRC chemical handbook has it that a US petroleum barrel is exactly 42 gallons.

Crude oil gets changed into petroleum gas, gasoline, oils, tar, and asphalt. The total volume of the non-gaseous products will be not much different than the crude volume.

What percentage do they refine into gasoline? I don't know yet.

Anything from 30-70% wouldn't surprise me.

They have both choices and pressures as to what product to make from crude.

(See <http://www.oiltycoon.com/http/refining.html>)

A person at www.elitetrader.com/vb/showthread.php?threadid=33287 says it's about 2/3. The other product made from the remaining 1/3 of a barrel gets sold too.

So that would be roughly 28 gallons of gasoline from each barrel of oil.

Jim Swenson

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A barrel of oil is 42 gallons.

The amount of gasoline that can be distilled from crude depends on where the crude is obtained. Venezuelan crude yields little gasoline (about 5%), whereas Texas or Arabian crude yields about 30% gasoline. This is called "straight run" gasoline.

However, the distilled components of the crude oil can be further processed into gasoline by various other methods (catalytic and thermal cracking, hydrocracking, catalytic reforming, alkylation, and polymerization) to yield even more gasoline.

Bob Erck



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