



Brake specific fuel consumption (BSFC) is a measure of how efficient the engine is combusting fuel at a given RPM. The formula for calculating BSFC would be:

$$\text{BSFC} = \frac{\text{fuel pounds per hour}}{\text{brake horsepower}}$$

The lower the BSFC number, the less fuel the engine is using to develop the HP in question. Therefore, the lower the BSFC number, the more efficient the engine is and the better the fuel economy will be. Typically, the lowest numbers will appear at or near peak torque.

Since horsepower numbers change at any given RPM, the BSFC will be different at every given RPM/HP incremental. BSFC numbers will be different with every engine due to variations in cylinder head design, valve size, camshaft selection, intake port size, carburetion, compression, etc.... BSFC will also be affected by the type of fuel being used. The BTU potential of the fuel has a direct impact on how well the fuel combusts in a given application.

Below are sample BSFC ranges for several typical engine types. **Note:** these are provided to illustrate relative BSFC behavior only. Realize that any change that improves the mechanical efficiency of the engine (e.g. a dry sump oil pan, electric water pump, low tension rings, lighter oil, etc.) will also reduce its BSFC values!

<u>Engine Type</u>	<u>Gasoline</u>	<u>Alcohol</u>
High compression	0.40 to 0.55	.90 to 1.10
Low compression	0.50 to 0.60	1.00 to 1.20
Super/Turbocharged	0.55 to 0.65	1.10 to 1.30
2-Stroke	0.50 to 0.80	N/A

