

Following the reading of your discussion paper concerning Cetane Number, I have the following observations, which are primarily focussed upon biodiesel.

1. The traditional Cetane Number is tried and tested data.
2. The feedstock for biodiesel is predominantly vegetable and tallow, fats and oils, all comprised of well documented mixtures of various ³organic fatty acids².
3. The proportions can vary, but only within certain boundaries, and usually within a specie, such as different percentages of say two mono unsaturates constituting a well accepted percentage of the mono saturated component of a particular fat or oil.
4. The physical chemistry characteristics such as melting points will alter depending upon chain length, such as a saturate of 12 carbons versus 16 carbons, however the Cetane Number will show little variation as long as the chain is saturated.
5. Hence, it is possible to prepare a table of Cetane Numbers, which can be accurately predicted according to the fatty acid mixture, which relates directly to the feedstock fats and oils being used.
6. The only feedstock, for which Cetane Number cannot be predicted, is recycled vegetable oils and tallows as the make up of these mixtures would normally be unknown. There may be a way of averaging, but this would not be accurate. Cetane Numbers for the mono and poly unsaturates are in the 50s, and even the low 50s, but on the whole the biodiesels will have much higher Cetane Numbers than mineral diesels. It is unlikely that the Number will be lower than the Standards figure.
7. The Cetane Number table would obviate the need for testing. However, the feedstock data would need to be known for any specific volume of product.

Although my knowledge of mineral diesel is limited, I am aware that ³diesels aint diesels². Hence there is significant internal variability within any diesel batch depending upon the source of the crude feedstock. This may require regular testing, especially as the Cetane Number will be close to that specified in the Standards, and will not provide much tolerance for error.

For those companies which require a higher Cetane number, the blending of a certain percentage of biodiesel will achieve this goal, add markedly to the mineral diesel lubricity, reduce sulphur and will provide a renewable component to the product.

I hope that this is of some help.

Kind Regards

Roger Stroud
Natural Fuel Limited