



June 22nd, 2011

Reporter: Mr. Ishibashi (researcher in Kitakyushu R&D Office)

RECYCLE ENERGY CO., LTD.
5-11-4, Hikino-cho, Fukuyama City,
Hiroshima, 721-0942, Japan
TEL +81-84-971-5950
FAX +81-84-946-6766

News of Oil Analysis from Kitakyushu R&D Office

The cracked oil is analyzed in our R&D office immediately to know the oil component and also whether it meets the standard or not. Then we utilize those results in deciding the oil-converting process and which catalyst to be used, looking for the best condition for oil conversion.

It takes time and energy to perform the analysis but we keep challenging in order to obtain as much information as we can — in a more accurate way within least possible time.

<Analytical Equipments in our R&D Office>

■Gas Chromatography Measurement

By using this equipment, we can check on each ratio of naphtha, diesel and heavy oil contained in the cracked oil. It is also possible to find out what kinds of hydrocarbon the cracked oil is composed of. Only a small quantity of the oil sample is required for the analysis.

■Analyzer of Oxidative Stability

By using this equipment, we can check on how easy the cracked oil will get oxidized. If the oil becomes oxidized easily, it means the oil gets deteriorated easily, which will possibly result in troubles such as metal corrosion and pipe clogging whenever the engine is filled with this kind of oil.

Compared with biodiesel fuel, the oxidative stability of the cracked oil derived from our oil-converting plant is much higher and therefore it usually takes a few days to measure it.

■Analyzer of Iodine Value

With this equipment, we mix some iodine into the carbon's double bond and by doing so we can check on how much the unsaturated fatty acid (the component which is easy to deteriorate) is contained in the cracked oil.

If the cracked oil contains too much the above component, it is classified as the so-called "drying oil." The oil will get oxidized as well as solidified when left in air. All the oil samples derived from our plant so far have indicated a very satisfying result by the way.

■Analyzer of Acid Value

With this equipment, we can check on the acidity of the cracked oil by disacidifying it. If the cracked oil turns out to be acid, it means the oil contains much fatty acid, and is currently under decomposition. All the oil samples derived from our plant so far have indicated a very satisfying result by the way.

Like the above, we are able to check on various components of the cracked oil. I will update the information whenever we have any more analytical items.

