RUDOLPH RESEARCH ANALYTICAL

White Papers

ANALYSIS OF CLEANING PRODUCT RAW MATERIALS

Preamble – Measuring Cleaning Product Materials

The current crisis is bad, but it is a crisis and will get resolved. One of the left-over effects from it that will persist for many years though is an increased effort on cleaning. Airplane seats, sports venues and even doorknobs on residential houses are going to be subject to much more cleaning than before the crisis and this means the general sale of cleaning products be them industrial or residential is going to increase.

Making cheap cleaning products is easy and, for a short time there will be a rush of low quality / high priced products into the market. These will not last though, they will quickly be driven out of the market due to low customer acceptance as soon as better products are available or, in the most egregious of cases, regulation of products that are ineffective or damage health. The winners will eventually be, as always, companies that make good quality, safe and consistent products that people want to use even when alternatives abound.

Technical Background

The differentiation in cleaning products has always been in the scent and presentation. Anyone can buy a drum of glycerin, propylene glycol or similar. It's the less than 1% of other material that takes the product from something bought only as a last resort to a profitable product that people keep on buying. Rudolph Research Analytical manufactures analytical equipment specifically designed to measure that less than 1%.

Equipment to measure cleaning products

As an example of the equipment supplied by Rudolph, lets looks at a certificate of analysis of Grapefruit oil

Specific Gravity Measurement

This property is tested on a Rudolph DDM series density meter. This instrument is a very simple to use. It is self-contained, there is no glassware or balance needed. Just inject the sample and get the result.

Refractive Index

Can be tested on one of Rudolph's temperature controlled(note the 20°C above) J-Series refractometers.

Optical Rotation

Measure Optical Rotation with a Rudolph Autopol series polarimeter

Combination Systems

For smaller cleaning product companies just getting into testing, the 3 stand-alone instruments shown above will be enough to check incoming quality and allow a company to be certified according to ISO etc. When the sample volume is higher though and skilled staff are in short supply the package can be automated to measure Refractive index, optical rotation, specific gravity, color and pH all in one operation.

A Final Word

This application note has focused on quality because quality is what builds a name. Money matters too though and its worth thinking about the following:

Grapefruit oil – $100 per kg. / $50 per lb Orange oil – $20 per kg / $10 per lb Therefore a mixture of 90% grapefruit and 10% orange should be $92 per kg / $44 per lb.

Is that drum being delivered really 100% grapefruit or is it 90% Grapefruit / 10% orange that's has cost 100% grapefruit price?