SHIMADZU
Excellence in Science

Quality Testing for Quality Protection

- Hand Sanitisers -

Commonly used alcohols like Ethanol and Iso-Propyl Alcohol (IPA) are being used as active ingredients in around 97 percent of all over-the-counter (OTC) hand sanitisers in the world today.

The US Centers for Disease Control and Prevention (CDC) has determined that the concentration of these active ingredients in the hand sanitisers must be between 60-95% for them to be generally effective. The US Food and Drug Administration (FDA) has been constantly evaluating the standards to ensure safety and efficiency of such hand sanitisers.

Shimadzu's Fourier Transform Infrared Spectrophotometer (FTIR) spectrometer IRSpirit-T™ provides a quick, reliable and affordable solution to identify and quantify such active ingredients.

IRSpirit-T™

reddot award 2018
winner

Product Highlights

- Humidity-resistant design – up to 90% humidity resistant with KRS-5 window
- Temperature controlled detector – more reliable results
- Ready to run workflow – 4 pre-load programs

Quick method set-up

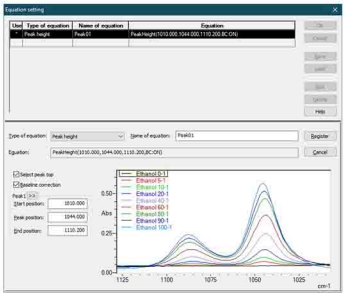
IRSpirit with QATR™-S Method Advantages – Drop and Click Workflow

- Fast Results: < 1 min analysis time
- No / minimum sample preparation required
- Excellent data quality with high reproducible spectra
- Non-destructive method
- Low running cost:
  Long lifetime and minimum instrument maintenance

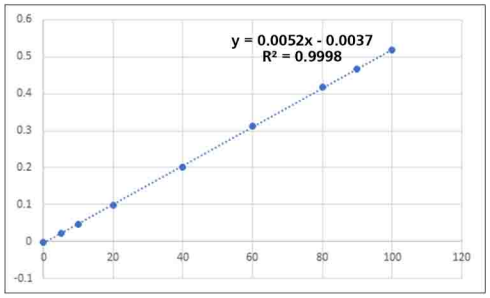
Ethanol and Isopropanol standard solutions were prepared from 0-100% using water as diluent. Standard solutions were placed on QATR™-S (Diamond cell) and spectra were collected and processed with corrected peak height, which is a sophisticated algorithm that optimizes the position and intensity of the absorption bands in an ATR spectrum.

Spectra of Ethanol and IPA were individually checked for linearity for appropriate wavenumber. Calibration curves for both Ethanol and IPA showed excellent linearity of greater than 0.999.

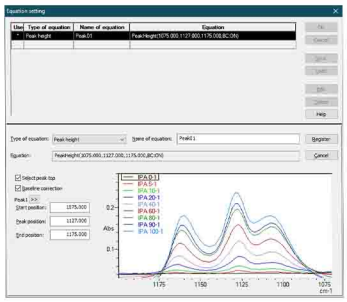
Spectrum overlay and calibration curve for 0-100% Ethanol



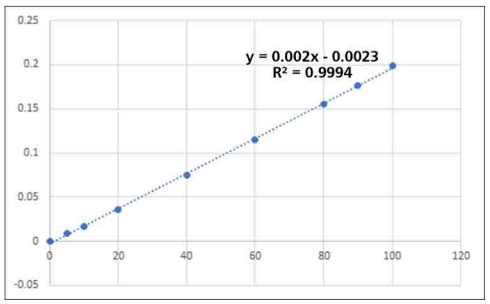
Spectrum Name	Concentration	Value
Ethanol 0-1	0	-0.001
Ethanol 5-1	5	0.024
Ethanol 10-1	10	0.048
Ethanol 20-1	20	0.098
Ethanol 40-1	40	0.201
Ethanol 60-1	60	0.313
Ethanol 80-1	80	0.419
Ethanol 90-1	90	0.467
Ethanol 100-1	100	0.518



Spectrum overlay and calibration curve for 0-100% IPA



Spectrum Name	Concentration	Value
IPA 0-1	0	0
IPA 5-1	5	0.009
IPA 10-1	10	0.017
IPA 20-1	20	0.036
IPA 40-1	40	0.075
IPA 60-1	60	0.115
IPA 80-1	80	0.155
IPA 90-1	90	0.176
IPA 100-1	100	0.199



IRSpirit-T with QATR™-S is a **Fast, Reliable and Affordable** methodology for confirming quality of hand sanitisers.

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Shimadzu (Asia Pacific) Pte Ltd.
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