

Application report

Determination of heat value of solvent-waste-mixtures

Branch: Chemistry

Product group: Fibre optical probes



Situation

In each chemical production plant tons of solvents accumulate which are waste. In order to dispose this solvent waste certain guidelines need to be followed. In case the solvent waste exceeds a certain heat value, the solvent waste may be used to be burned for waste-to-energy (energy production). In most cases the determination of the heat value of this solvent waste is made by measurements with a bomb calorimeter. Those measurements take up to 1 hour and require a complex sample logistic. The result is a difficult process control and high costs for doing the measurements.

Solution

Compared to determination of the heat value by a bomb calorimeter with measuring cycles of up to 1 hour, the NIR spectroscopy offers measurement times of under 1 second. Online measurement in real time. By means of the solvent-proof probe 661.790-NIR, a spectrophotometer and a multi-linear calibration model the heat value of the solvent waste and solvent waste mixtures can be determined fast and efficient. By the immersed probe, the spectrophotometer gets a characteristic spectrum of the different heat values. By software using mathematical methods one creates a calibration model by different spektral data. After that this calibration model will be used to measure the current heat value of a certain solvent waste mixture online. With this method the heat value can be measured very fast without the effort of sample handling and complex sample logistics.



Solvent-proof process probe 661.790

Advantages


- ▶ High savings due to omission of classical analysis
- ▶ Efficient energy recovery by waste-to-energy
- ▶ Minimal operational costs and almost maintenance free
- ▶ Fast and flexible

Fields of application


Combustors	Determination of heat value of solvent-waste-mixtures
Internal and external waste disposal companies	Determination of heat value of solvent-waste-mixtures
Surrogate fuel	Determination of heat value of solvent-waste-mixtures
Waste air purification plants	Determination of heat value of solvent-waste-mixtures

Experience more about Hellma Analytics


Product Brochures




Product Catalogue
BestCells 2011




TrayCell
Ultra-Micro-Cell




UV/VIS Calibration
Standards



Fibre optical Systems

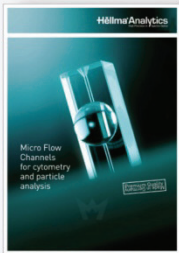


Microplates




Hellmanex III
Cleaning Concentrate

Thematic information



Micro Flow
Channels
for cytometry
and particle
analysis



Technology.
Expertise.
Innovation.

Our brochures provide detailed information about the appropriate product groups and in addition, offer thematic information as well as handling advice. www.hellma-analytics.com/download

Contact

Hellma GmbH & Co. KG
 Klosterrunsstraße 5
 79379 Müllheim / Germany
 Phone: +49 7631 182-0
 Fax: +49 7631 13546
 E-Mail: info.analytics@hellma.com
www.hellma-analytics.com