



# Solutions for Agricultural

Wet Chemistry Analyses for Farms and Producers of Corn, Wheat, Rice, Plants, Syrups and similar products

## Crude Protein

OP SIS LiquidLINE has solutions for determination of Kjeldahl (TKN) protein following standard methods.

The samples are digested with sulphuric acid to convert nitrogen into ammonium sulphate. The samples are further distilled by steam distillation followed by titration.

Examples: Protein in grain, oats, barley, wheat, sugars, syrups, straw, plants and forage. Protein in cottonseed, cottonseed meals, ground cake or pellets from cottonseed.

### Our Solution

- The KjelROC Digestor Advanced motor lift makes the digestion efficient and saves valuable operator time.
- KjelROC Analyzer with integrated Titration offers titration with low relative standard deviation.

### Standards

ISO 5983-2, AOCS Aa 5-91  
AOAC 920.87, AOAC 920.176  
AOAC 945.23, AOAC 978.04  
AOAC 979.09, AOAC 2001.11  
Analytica-EBC 3.3.1

### Application Notes

LA1000 Application Guide Kjeldahl  
LA1010 Determ. of nitrogen in wheat  
Further Notes on request

## Total Fat

OP SIS LiquidLINE provides instruments to determine Total Fat according to standard methods.

The sample is hydrolysed and thereafter extracted in hot solvents. Calculation of total fat content follows after the extract has been dried to a constant weight.

Examples: Fat in Corn, Maize, Rice, Peas and Wheat, Durum, Rye, Barley and Oats.

### Our Solution

- The HydROC hydrolysis unit offers a unique filter technology that saves time and reduces the risk of errors when moving samples between hydrolysis and extraction.
- The SoxROC extraction unit with batch handling and full automation facilitates the extraction.

### Standards

ISO 6492

### Application Notes

LA1002, Appl. Guide Solvent Extraction  
LA1005, Extr. of Total Fat in Petfood  
Further Notes on request

## Crude Fat

OP SIS LiquidLINE provides instruments to determine Crude Fat with Hot Solvent extraction.

The sample is prepared and thereafter extracted in hot solvents. Calculation of fat content follows after the extract has been dried to a constant weight.

Examples: Fat in Wheat, Corn, and Soy Flour, Feeds, and Mixed Feeds

### Our Solution

- The SoxROC extraction unit with batch handling and full automation facilitates the extraction.
- The instrument provides significant time savings versus cold extraction and a recovery of over 90% of used solvents.

### Standards

AOAC 920.39  
AOAC 2003.06  
AACC 30-25  
AOCS Ba 3-38

### Application Notes

LA1002, Appl. Guide Solvent Extraction  
Further Notes on request

## Extraction of Oil in Cereal Adjuncts

OPSIS LiquidLINE provides instruments to extract oil, using hot solvent extraction, from cereal adjuncts.

### Our Solution

- The SoxROC extraction unit with batch handling and full automation facilitates the extraction.
- The instrument provides significant time savings versus cold extraction and a recovery of over 90% of used solvents.

### Standards

AOAC 945.16

### Application Notes

LA1002, Appl. Guide Solvent Extraction  
Further Notes on request



## OPSIS LIQUIDLINE - INNOVATIVE WET CHEMISTRY

OPSIS AB, founded in 1985 in Sweden, took the concept of measuring gases with light and developed it into a commercially viable product. In 2013, we took another step and moved our innovative technology into Wet Chemistry and Liquids. We can offer:

- AN APPLICATION LABORATORY READY TO ASSIST
- CUSTOMIZED TRAINING AND SUPPORT FROM SWEDEN
- THE LATEST IN MAINTENANCE
- A COMPLETE PORTFOLIO

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