



# Solutions for Rubber and Plastics

Wet Chemistry Analyses for producers or users of rubber and plastics

## Nitrogen (N)

OP SIS LiquidLINE has solutions for determination of the nitrogen content in raw natural rubber and in natural rubber latex using variants of the Kjeldahl process.

A known mass of the sample is digested with a mixture of sulphuric acid, potassium sulphate, and catalytic amounts of copper sulphate and selenium or sodium selenate, thereby converting nitrogen compounds into ammonium sulphate from which the ammonia is distilled after making the mixture alkaline. The distilled content is followed by a titration.

### Our Solution

- The KjelROC Digestor Advanced motor lift makes the digestion efficient.
- OP SIS LiquidLINE Kjeldahl catalyst tablets and glass tubes ensure stable and reliable results.
- KjelROC Analyzer with integrated Titration offers titration with low relative standard deviation saving time and costs.

Standards  
ISO 1656:1996

Application Notes  
LA1000 Application Guide Kjeldahl  
Further Notes on request

## Extraction of Plasticizers in PVC tubing

A plasticiser is a substance which when added to a material, usually a plastic, makes it flexible, resilient and easier to handle.

Examples: extraction of plasticisers from PVC-tubing

### 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.
- The SoxROC is designed for industrial use with Borosilicate glass and PTFE material.

### Standards

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### Application Notes

LA1002, Appl. Guide Solvent Extraction  
Further Notes on request

## Extraction of Ethylene Vinyl Acetate (EVA)

OP SIS LiquidLINE provides instruments for extractions of Ethylene Vinyl Acetate (EVA). EVA is commonly used in Hot melt adhesives, additive in plastic wraps and EVA foam for padding. EVA is also used to encapsulate the photovoltaic cells in solar panels.

### 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.
- The SoxROC is designed for industrial use with Borosilicate glass and PTFE material. Please order optional PTFE sealing rings.

### Standards

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### Application Notes

LA1002, Appl. Guide Solvent Extraction  
LA1014 Determining the gel content of Ethylene Vinyl Acetate

## Extraction from Rubber

OP SIS LiquidLINE provides instruments for hot solvent extractions from rubber. This can be a sample preparation for further analysis with other instruments such as GC or LC.

### 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.
- The SoxROC is designed for industrial use with Borosilicate glass and PTFE material. Please order optional PTFE sealing rings.

### Standards

ISO 1407:1992

### Application Notes

LA1002, Appl. Guide Solvent Extraction  
Further Notes on request

## Extraction from Plastics

OP SIS LiquidLINE provides instruments for hot solvent extractions from different plastic materials.

### Examples:

- Extraction from styrene plastics, melamine and polymers.
- Extraction of antioxidants in polypropylene production
- Extraction of migration components in plastics packaging
- Extraction of plasticisers and additives in plastic parts used in car production
- Extraction of plastics and resins in electronic devices

### 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.
- The SoxROC is designed for industrial use with Borosilicate glass and PTFE material. Please order optional PTFE sealing rings.

### Standards

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### Application Notes

LA1002, Appl. Guide Solvent Extraction  
Further Notes on request

## OP SIS LIQUIDLINE - INNOVATIVE WET CHEMISTRY

OP SIS 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.

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



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2023 07