

## Troubleshooting – screening of organic constituents in paper, plastics and packages

In order to analyze complex organic samples, we use pyrolysis-gas chromatography/mass spectrometry (Py-GC/MS). With analytical pyrolysis high molecular mass material is degraded thermally to smaller fragments. The pyrogram obtained gives a unique fingerprint which allows identification of unknown samples. The technique can be used for all kinds of samples; deposits, plastics or solutions. Innventia has utilized Py-GC/MS for about 20 years and during this period we have been able to build a very large reference library, which makes us one of the world leading actors within this analytical field.

### What can we do for you?

We can offer detailed investigations regarding qualitative and quantitative properties of unknown samples:

- Polymer characterisation
- Identification of additives
- Characterisation of deposits and scaling on process equipment
- Characterization of stickies and white pitch
- Characterisation of defects in products, such as spots and specks
- Analysis of the composition of process chemicals

For samples containing significant amounts of inorganic material, the pyrolysis investigation is complemented by inorganic analysis for example by electron microscopy (ESEM), X-ray analysis for elemental composition, metal analysis or ion-exchange chromatography.

The investigation requires very small sample amounts, often below 1 mg.

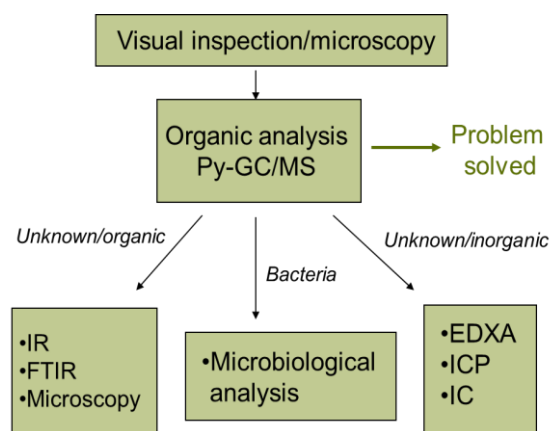
Please contact us for a discussion about how we may help you!

### Contact

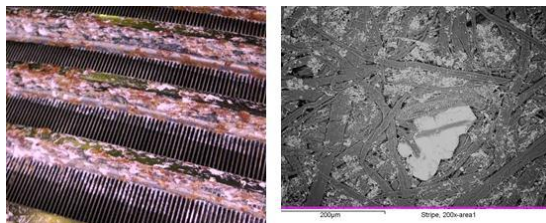
For more information, please contact Anders Reimann (anders.reimann@innventia.com, +46 8 676 7445), or Anna Jacobs (anna.jacobs@innventia.com, +46 8 676 7152). We look forward to your inquiries!



Insertion of a sample into the pyrolysis chamber.



Flow scheme for a typical troubleshooting investigation.



Typical samples: Deposits on a screen (left) and an unknown particle in paper (right)

INNVENTIA AB is a world leader in research and development relating to pulp, paper, graphic media, packaging and biorefining. Our unique ability to translate research into innovative products and processes generates enhanced value for our industry partners. We call our approach *boosting business with science*. Innventia is based in Stockholm, Bäckhammar and in Norway and the U.K. through our subsidiaries PFI and Edge respectively.

