

Reducing Environmental Impact in CDR

Analytical Methods

CDR: Sustainable Innovation in Quality Control

At CDR, sustainability drives every stage of technological development. It is not only a matter of energy savings or environmental care, but of creating analytical solutions that offer concrete benefits to users. By employing micro-sample volumes and adopting the principles of green chemistry, our systems drastically reduce chemical reagent consumption while increasing safety, efficiency, and analytical precision.

Our ongoing research commitment allows for minimized energy consumption and waste production, contributing to a more sustainable production cycle. The analytical methods developed by CDR provide the same accuracy as reference methods, with significantly lower use of chemical substances and reduced toxicological risk.

Application Examples

- **Peroxide value determination in oils and fats:** The CDR method for peroxide value determination reduces the use of toxic solvents by 30 times compared to traditional methods, eliminating operator exposure to hazardous substances such as chloroform and glacial acetic acid.
- **Secondary oxidation determination in oils and fats:** The p-anisidine value is determined using low-toxicity reagents, avoiding the direct use of pure p-anisidine, classified as a CMR substance.
- **Brewing sector:** The CDR method for bitterness (IBU) determination requires only 1 mL of beer and 1 mL of solvent, compared to 200-300 mL of beer and 20 mL of solvent required by the official method, offering significantly faster analysis times and enhanced operational safety.

An Approach Adopted Across Multiple Sectors

Starting from chemical analyses for olive oil quality control at milling plants, CDR methods have been successfully extended to the food industry, as well as to coffee producers, and companies in the wine, brewing, and beverage sectors. This enables both specialized and non-specialized personnel to efficiently manage quality control at every stage of production.

Concrete Benefits for Our Customers

The reduction in reagent volumes, improved safety, and simplified procedures allow CDR customers to achieve more agile, safer, and more sustainable quality control. The significantly lower use of solvents, such as iso-octane, enables cost-effective and safe management without the need for complex recycling processes.



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Conclusions

The CDR approach combines scientific innovation, operational safety, and environmental responsibility. Through the continuous optimization of analytical methods, our customers can effectively meet the growing regulatory and market demands for sustainability, while contributing to the protection of both operator health and the environment.

References

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- [3] American Society of Brewing Chemists (ASBC). (2009). Beer-23: Bitterness Units. In Methods of the American Society of Brewing Chemists (Vol. 1). American Society of Brewing Chemists.



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