Case Study
Determination of Ammonia and Nitrogen

Customer: CAE Grand Ouest, France
CAE is a laboratory of the Veolia Group located in Western France. The laboratory is specializing in environmental analysis, especially in water and soil analysis.

Application: Determination of Ammonia and TKN in waste water and soil
Total Kjeldahl Nitrogen (TKN) and Ammonia are common parameters for the evaluation of the pollution of soil and water. The samples require digestion with sulfuric acid to convert nitrogen into ammonium sulfate. After conversion to ammonia through alkalization with sodium hydroxide the ammonia is distilled into a boric acid receiver via steam distillation, followed by a titration with a sulfuric acid solution.

Equipment: KjelMaster K-375 with KjelSampler K-377, Digest Automat K-438 and Scrubber B-414
The determination of ammonia and TKN is a routine analysis. To cope with a sample load of up to 120 samples a day the equipment used must be fully automated. The complete system comprising the Digest Automat K-438, the KjelMaster K-375 and the KjelSampler K-377 allows to reduce user interaction during analysis to a minimum. This frees up a lot of time and maximizes the productivity of the laboratory.

Benefit / Conclusion: Time Saving
The sample transfer based on steam overpressure is extremely convenient and helps to decrease maintenance time. The compatibility of the K-438 rack with the 48 position autosampler K-377 as well as the potentiometric and colorimetric titration mode of the K-375 are real advantages compared to competitor systems. The autosampler guarantees a continuous workflow.

“The highlight of BUCHI’s automated Kjeldahl system is the 48 position autosampler that allows us to work in a continuous way and thus frees up a lot of time.”
M. Piedor, Manager of the laboratory