

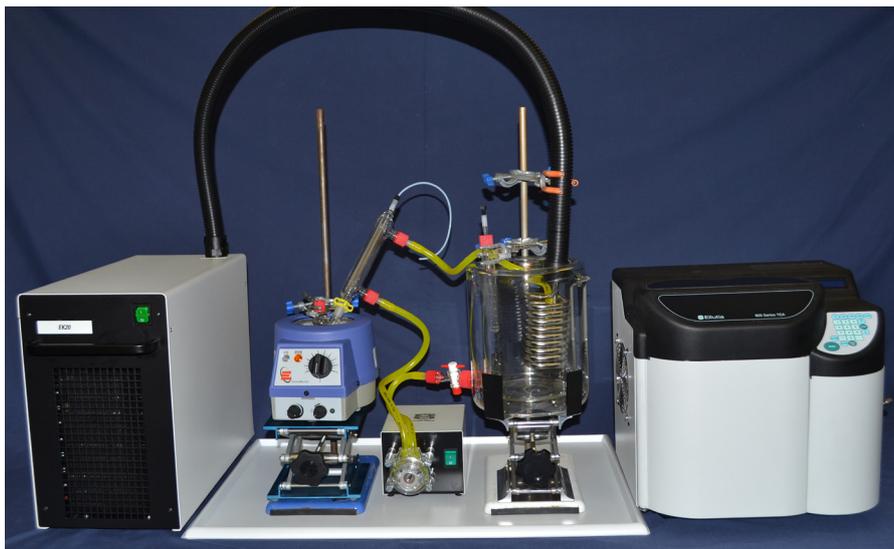


# Chemical Stripping System

For 800 Series TEA



# Chemical Stripping System



## Total Nitrosamine Analysis

### Cosmetics

Raw materials for the production of cosmetics have been found to contain nitrosamine impurities. Both Europe and Canada have banned nitrosamines in any cosmetic product, therefore, these raw materials need to be screened before use. However, formation of secondary nitrosamines can occur from reactions between some proteins and the preservatives, such as diethanolamine or triethanolamine. These compounds are common additives in cosmetics used to adjust pH or act as a wetting agent. It is reported, that one in every 10 products may still contain the compounds that can combine to form nitrosamines. A range of inhibitors can be added to the cosmetics to prevent formation of n-nitroso compounds, but the effect of each is not completely predictable. Therefore a substantial amount of testing for nitrosamines must be carried out within the cosmetics industry.

### Agrochemical

In the manufacture of pesticides and herbicides, secondary amine dinitroanilines are commonly used as precursors. These can contain nitrosamine impurities with surprisingly high levels. Also in the presence of nitrites, another substance commonly employed in the production process, nitrosamines can be produced. In the agrochemical industry, it is often not essential to know the exact profile of nitrosamine species, but a total composition is often reported.

## Chemical Stripping TEA Analysis

The Ellutia Chemical Stripping System can be used in unison with an 800 Series TEA to perform total nitrosamine analysis. Instead of using a pyrolyser to heat the nitrosamine to remove the NO group, a chemical reaction can be employed. The alleviation of NO from the nitrosamine is performed by a reflux reaction with hydrobromic acid in ethyl acetate. The nitrosamine sample is injected into the reaction vessel and produces NO, a secondary amine and bromine. The NO is then carried in a gas stream through a cold trap (removing any vapour) to the TEA.

