

Specification of Competency Standards
for the Testing, Inspection and Certification Industry
Unit of Competency

Functional Area - Testing Operations

Title	Apply separation and cleanup techniques to organic analysis
Code	105792L3
Range	This unit of competency (UoC) covers the abilities to apply suitable techniques and procedures on separation, chromatography and knowledge of column chemistry for sample cleanup to collect analytes ready and fit for organic analysis in testing laboratories.
Level	3
Credit	2 (For Reference Only)
Competency	<p>Performance Requirements</p> <p>1. Possess knowledge of sample separation and cleanup techniques</p> <ul style="list-style-type: none"> • Apply basic principles and working mechanisms of various separation and cleanup methods for organic analysis, e.g.: <ul style="list-style-type: none"> ○ column chromatography, ○ gel permeation chromatography, ○ thin layer chromatography (TLC), ○ solid phase extraction. • Apply the concepts of chromatographic separation, e.g.: <ul style="list-style-type: none"> ○ use and choice of suitable mobile phase and washing buffers, ○ operation and optimisation of chromatographic techniques. • Describe column chemistry, temperature control and varying mobile phase composition for enhancing separation and detection of the required analyte species. <p>2. Apply appropriate separation and cleanup techniques on samples in accordance with test requirements</p> <ul style="list-style-type: none"> • Identify test sample characteristics that may affect selection and application of separation and cleanup technique. • Apply and operate suitable separating systems, e.g.: <ul style="list-style-type: none"> ○ for chromatographic separation: sample injection / loading, mobile phase, sample preparation, washing of separated analyte, sample collection and detection, ○ for solid phase extraction: solvent selection, sample preparation, solid phase cartridge, sample collection. • Set operational parameters in accordance with specified methods/procedures for analyte separation and cleanup, e.g.: <ul style="list-style-type: none"> ○ sample injection temperature, ○ flow rate, ○ resolution. • Separate, cleanup and collect the analyte in a sample for organic analysis by using suitable separation / chromatographic procedures. <p>3. Exhibit professionalism</p> <ul style="list-style-type: none"> • Ensure separated analytes are ready and fit for organic analysis.
Assessment Criteria	<p>The integrated outcome requirements of this UoC are the abilities to:</p> <ul style="list-style-type: none"> • carry out sample separation and cleanup procedures on the sample by applying appropriate separation and/or chromatographic techniques according to the test requirements, • separate and collect analytes ready and fit for organic analysis.
Remark	