

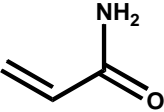
Suggested SPE method for the extraction of acrylamide from cooked foodstuffs using SiliaPrep™ SAX/SCX-2/C18 [SPM-R28800130B-03J]

We describe here a method for the clean up of “**acrylamide from cooked foodstuffs**” using a SPE mixed-mode based on multimode retention mechanism; anion and cation exchange (SAX and SCX-2) and hydrophobic retention (C18) for the retention of interfering food components. Analysis of the sample can be done using the analytical technique LC-MS.

This is a recommended method for the development of SPE. This method has not been verified in SiliCycle® laboratories but is based on methods used with similar matrices and analytes. Therefore, before trying the procedure directly on the matrix, you should first develop a procedure using pure solvent containing the analyte. You will find below, tips for the choice of solvent that you should use to establish your SPE method development:

- ↳ **Non-aqueous samples**
 - Use a solvent similar to sample matrix and spike it with the analyte.
- ↳ **Aqueous samples**
 - If you are using a buffer during the equilibration step, spike it with the analyte to 10 to 20 mM of this buffer.
 - Or use distilled water containing the analyte.

EXTRACTION PROCEDURE

↳ SPE Column:	<ul style="list-style-type: none"> • SiliaPrep™ SAX/SCX-2/C18 [SPM-R28800130B-03J] <p>Note: Other phases can be used for the extraction of this compound. This is a general procedure that can be applied to most SPE columns.</p>
↳ Analyte structure:	<ul style="list-style-type: none"> • Acrylamide <div style="text-align: center;">  </div>
↳ Analyte structural considerations:	<ul style="list-style-type: none"> • Analytes falling under these considerations may be extracted with this method : <ul style="list-style-type: none"> ⇒ Very small molecules; ⇒ Highly water soluble molecules; ⇒ Negligible hydrophobic character.
↳ Matrix considerations:	<ul style="list-style-type: none"> • Aqueous matrix containing interferences may be analysed
↳ SPE column pre-treatment:	<ul style="list-style-type: none"> • Preparation steps before the extraction : <ul style="list-style-type: none"> ⇒ Homogenise the sample with water (2-4 g of the sample in 40 mL of water) ⇒ Add internal standard (~ 800 µL) ⇒ Homogenise again before extracting the sample (~ 2 min. by stirring) ⇒ Centrifuge the extract (~ 10 min.)* ⇒ Collect the supernatant

↵ Solvation:	<ul style="list-style-type: none">• The column must be solvated with ~ 1 mL of acetonitrile (HPLC-grade).
↵ Equilibration:	<ul style="list-style-type: none">• Rinse with two times 2 mL of water for the equilibration step.
↵ Sample application:	<ul style="list-style-type: none">• Apply the supernatant containing the analyte on the column (~ 3 mL).
↵ Interference elution:	<ul style="list-style-type: none">• N / A
↵ Analyte elution:	<ul style="list-style-type: none">• Steps for the elution of the analyte :<ul style="list-style-type: none">⇒ Discard the first 1 mL of the solution.⇒ Collect the remaining solution.⇒ Pass the remaining solution through a syringe filter (0.22 µm).⇒ Centrifuge the filtrate until sufficient volume is collected for analysis (~ 10-20 min.).
↵ Analytical method:	<ul style="list-style-type: none">• Generally analysed by LC-MS
↵ Reagents used:	<ul style="list-style-type: none">• For this extraction method, you will need:<ul style="list-style-type: none">⇒ Acetonitrile (HPLC-grade)⇒ Distilled water⇒ Internal standard in water for the analytical technique
↵ * General comments:	<ul style="list-style-type: none">• Store sample at -20°C for further analysis.• Extra centrifugation may be required with potato crisp foodstuffs (Tip: freeze the extract before centrifuging). <p><u>Reference</u> : Rosen, J. and al., Analysis of acrylamide in cooked foods by liquid chromatography tandem mass spectrometry, <i>Analyst</i>, 2002, 127; 880-882.</p>
