Waters™

Acrylamide in Potato Chips

Waters Corporation

This is an Application Brief and does not contain a detailed Experimental section.

Abstract

This application brief demonstrates the analysis of acrylamide in potato chips.

Introduction

The compound analyzed in this study is acrylamide.

Experimental

LC Conditions

Column: Atlantis dC$_{18}$, 2.1 x 150 mm, 5 μm

Part number: 186001297

Mobile phase :   0.1% Formic Acid in water

Flow rate: 0.2 mL/min

Injection volume: 20 μL

Temperature: 30 °C

Instrument: Alliance 2695

MS Conditions

MS instrument: Micromass ZMD

Ion source: ESI+
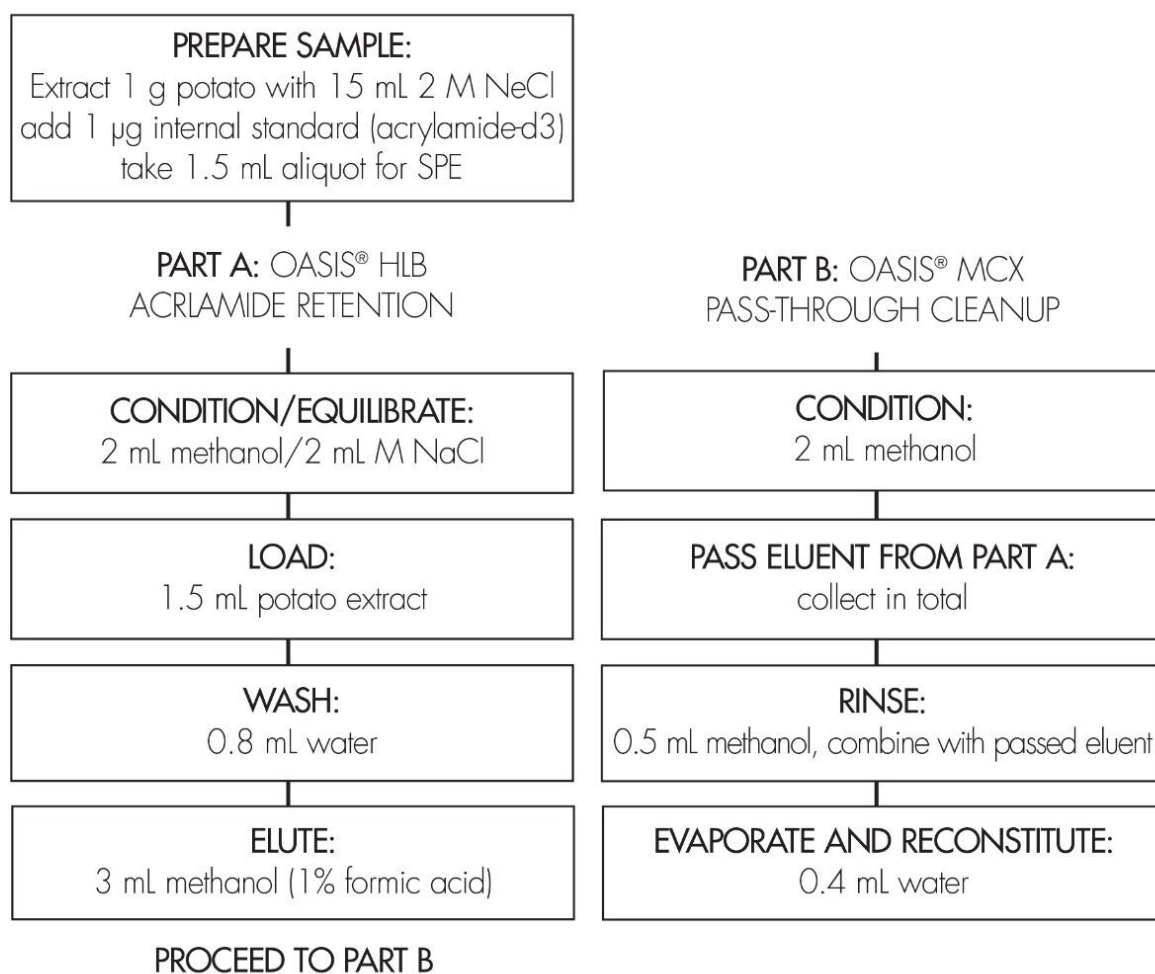
Mode: Multiple selected-ion recording

Source temp.:   150 °C

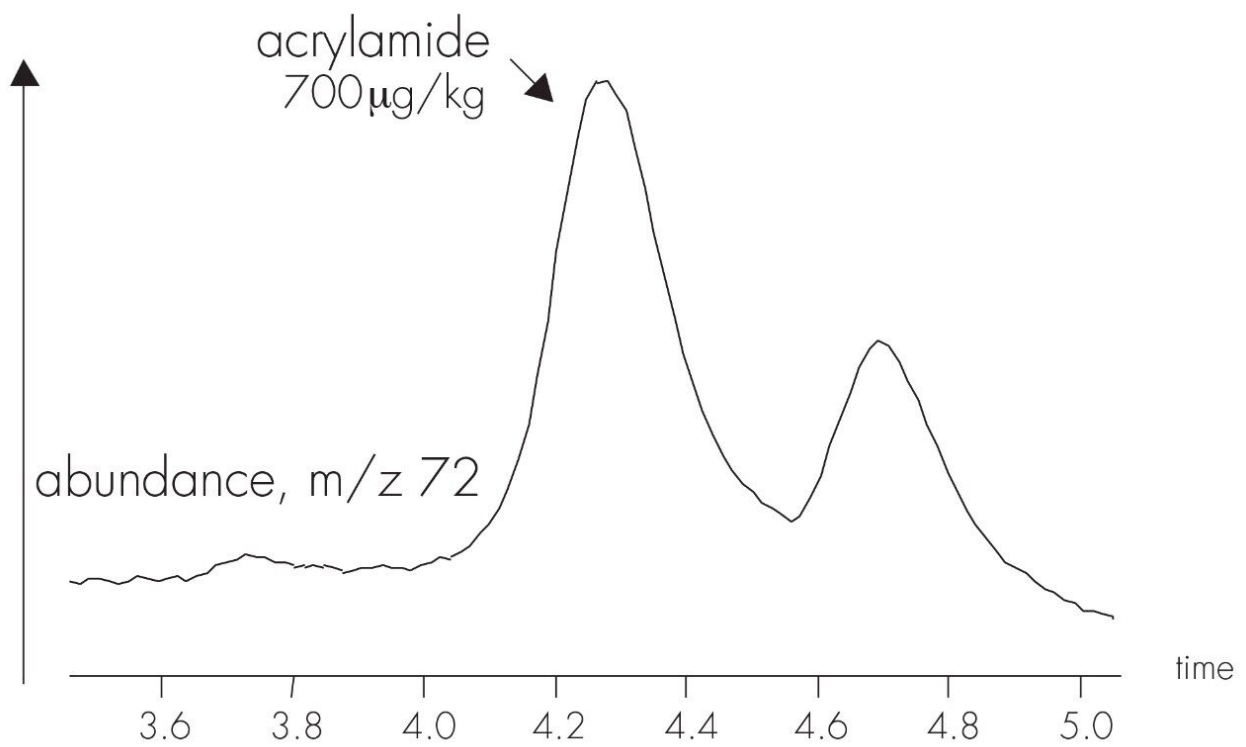|	
Desolvation temp.:	350 ˚C
Desolvation gas:	500 L/hr

OASIS® EXTRACTION METHOD
Oasis® HLB Extraction Cartridge, 6 cc/200 mg
Oasis® MCX Extraction Cartridge, 3 cc/60 mg

PREPARE SAMPLE:
Extract 1 g potato with 15 mL 2 M NeCl
add 1 µg internal standard (acrylamide-d3)
take 1.5 mL aliquot for SPE

PART A: OASIS® HLB
ACRLAMIDE RETENTION

PART B: OASIS® MCX
PASS-THROUGH CLEANUP

CONDITION/EQUILIBRATE:
2 mL methanol/2 mL M NaCl

CONDITION:
2 mL methanol

LOAD:
1.5 mL potato extract

PASS ELUENT FROM PART A:
collect in total

WASH:
0.8 mL water

RINSE:
0.5 mL methanol, combine with passed eluent

ELUTE:
3 mL methanol (1% formic acid)

EVAPORATE AND RECONSTITUTE:
0.4 mL water

PROCEED TO PART B

Results and Discussion

Internal standard calculation (n=5)		
Fortification level (µg/kg)	Amount found (µg/kg)	% RSD
100	96	12
200	211	8.7
500	488	5.8
1000	1010	8.0
2000	2000	6.5

acrylamide
700 µg/kg

abundance, m/z 72

time

3.6   3.8   4.0   4.2   4.4   4.6   4.8   5.0

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