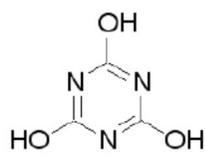
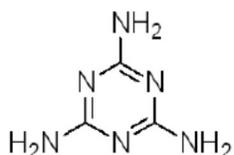


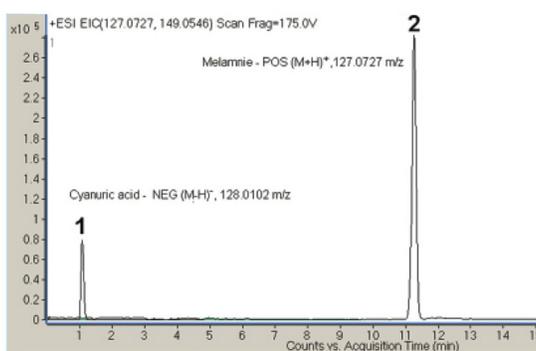
# Simple ANP Method for Determinations of Cyanuric Acid and Melamine



1. Cyanuric acid



2. Melamine



**Notes:** Melamine is not a food product but was found in the past in pet food and also in infant food formulas. It was alleged that melamine was added intentionally to protein products to gain protein content (test is done for nitrogen content). Melamine itself has low or no toxicity however melamine production byproducts often contain cyanuric acid, which together with melamine causes toxicity (forming insoluble crystals in the kidneys). Due to the adverse effects of melamine/Cyanuric acid contamination imported products for infants have to be tested for the presence of these potentially harmful compounds.

## Method Conditions

**Column:** Cogent Diamond Hydride™, 4µm, 100Å

**Catalog No.:** 70000-15P-2

**Dimensions:** 2.1 x 150 mm

**Solvents:** A: DI H<sub>2</sub>O + 0.1% acetic acid

B: Acetonitrile + 0.1% acetic acid

Gradient:	time (min.)	%B
	0	100
	15	50

**Post Time:** 5 min

**Flow rate:** 0.4 mL/min

**Detection:** ESI - NEG for cyanuric acid and ESI - POS for melamine:  
Agilent 6210 MSD TOF mass spectrometer.

**Peaks:** 1. Cyanuric acid 1.5 microg/mL

NEG (M-H)<sup>-</sup> 128.0102 m/z analyzed in Neg mode, RT = 1.278 min

2. Melamine 3 microg/mL

POS (M+H)<sup>+</sup> 127.0727 m/z analyzed in Pos mode, RT = 11.260 min

**t<sub>0</sub>:** 0.8 min

## Discussion

The benefits of using the method in this application note include:

1. Short equilibration time between gradient runs
2. Excellent repeatability of the results.
3. Use of LC-MS detection eliminates the need for derivatization (as is needed with a GC- MS method),
4. Higher flow rates without compromising the efficiency (higher sample throughput possible)
5. Columns used in this method have very long life and are good for over 2000 injections of real life samples. When analyzing melamine alone, a simple isocratic method can be used. When using the Cogent Diamond Hydride column melamine is retained at 80% B mobile phase. The resulting peak shape is very symmetrical.