

# CHROMATOGRAMS, COLUMNS & GUARDS

## ➔ CARBAMATE PESTICIDE ANALYSIS COLUMNS

Pickering Laboratories carbamate columns are guaranteed to produce the separation of carbamate residues, specified by EPA 531.1, EPA 531.2 and AOAC 985.23 methods.

### Post-column conditions for pesticide analysis:

Reagent 1: Hydrolysis reagent CB130 or CB130.2

Reagent 2: 100 mg of OPA, 2 g Thiofluor™ in 950 mL of CB910

Reactor 1: 100 °C, 0.5 mL

Reactor 2: ambient, 0.1 mL

Reagents flow rate: 0.3 mL/min

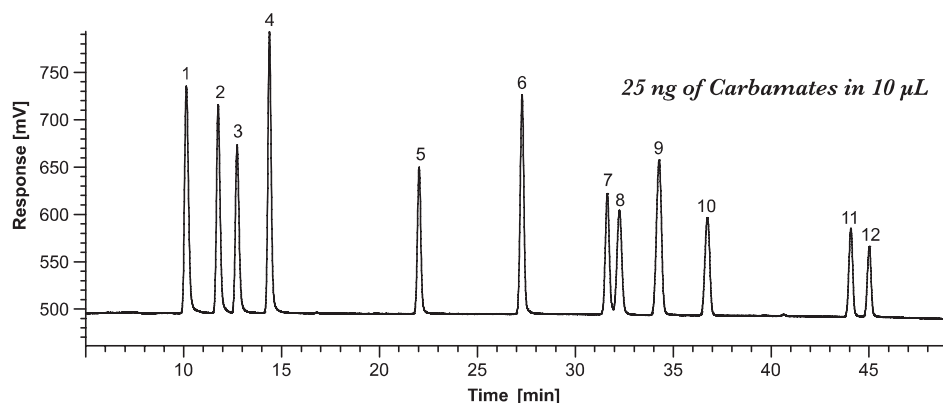
### Detection:

Fluorometer:  $\lambda_{ex}$  330 nm,  $\lambda_{em}$  465 nm

The recommended gradient conditions are subject to change without notice. This may happen because of lot-specific changes in the columns, or improvements in the overall method.

*The recommended gradient for the column will always be included in the column package, and it supersedes the information in this catalog.*

HIGH RESOLUTION / CAPACITY CARBAMATE COLUMN 0846250 (4.6 X 250 mm), C<sub>8</sub>, 5 µm



- |                      |                       |               |
|----------------------|-----------------------|---------------|
| 1 Aldicarb sulfoxide | 5 3-Hydroxycarbofuran | 9 Carbaryl    |
| 2 Aldicarb sulfone   | 6 Aldicarb            | 10 1-Naphthol |
| 3 Oxamyl             | 7 Propoxur            | 11 Methiocarb |
| 4 Methomyl           | 8 Carbofuran          | 12 BDMC       |

| CONDITIONS FOR AQUEOUS SAMPLES |         |        |
|--------------------------------|---------|--------|
| TIME (Min)                     | WATER % | MeOH % |
| 0                              | 100     | 0      |
| 1                              | 100     | 0      |
| 1,1                            | 82      | 18     |
| 36                             | 30      | 70     |
| 39                             | 30      | 70     |
| 39,1                           | 0       | 100    |
| 41                             | 0       | 100    |
| 41,1                           | 100     | 0      |
| 55                             | 100     | 0      |

FLOW RATE: 1 mL/min,  
COLUMN TEMP: 42 °C,  
INJECTION VOLUME: Up to 400 µL

| CONDITIONS FOR METHANOLIC SAMPLES |         |        |
|-----------------------------------|---------|--------|
| TIME (Min)                        | WATER % | MeOH % |
| 0                                 | 85      | 15     |
| 1                                 | 85      | 15     |
| 44                                | 25      | 75     |
| 44,1                              | 0       | 100    |
| 49                                | 0       | 100    |
| 49,1                              | 85      | 15     |
| 57                                | 85      | 15     |

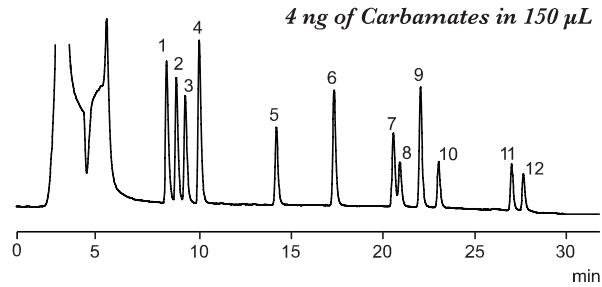
FLOW RATE: 1 mL/min,  
COLUMN TEMP: 42 °C,  
INJECTION VOLUME: 10 µL

# CHROMATOGRAMS, COLUMNS & GUARDS

## RAPID ANALYSIS CARBAMATE COLUMN 1846150 (4.6 X 150 mm), 5 µm

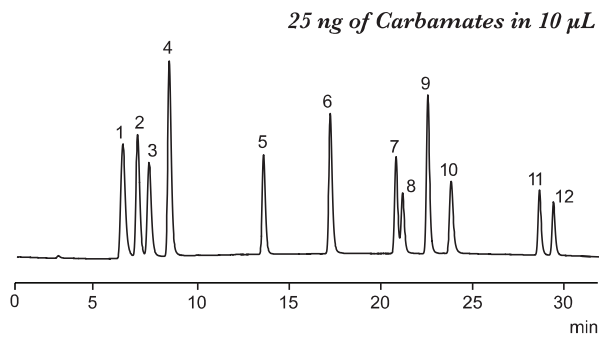
| CONDITIONS FOR AQUEOUS SAMPLES |         |        |
|--------------------------------|---------|--------|
| TIME (Min)                     | WATER % | MeOH % |
| 0                              | 100     | 0      |
| 1                              | 100     | 0      |
| 1,1                            | 88      | 12     |
| 26                             | 30      | 70     |
| 26,1                           | 0       | 100    |
| 28                             | 0       | 100    |
| 28,1                           | 100     | 0      |
| 38                             | 100     | 0      |

FLOW RATE: 1 mL/min,  
COLUMN TEMP.: 42 °C,  
INJECTION VOLUME: Up to 250 µL



| CONDITIONS FOR METHANOLIC SAMPLES |         |        |
|-----------------------------------|---------|--------|
| TIME (Min)                        | WATER % | MeOH % |
| 0                                 | 85      | 15     |
| 0,5                               | 85      | 15     |
| 28,5                              | 30      | 70     |
| 28,6                              | 0       | 100    |
| 33,5                              | 0       | 100    |
| 33,6                              | 85      | 15     |
| 41                                | 85      | 15     |

FLOW RATE: 1 mL/min,  
COLUMN TEMP.: 42 °C,  
INJECTION VOLUME: 10 µL



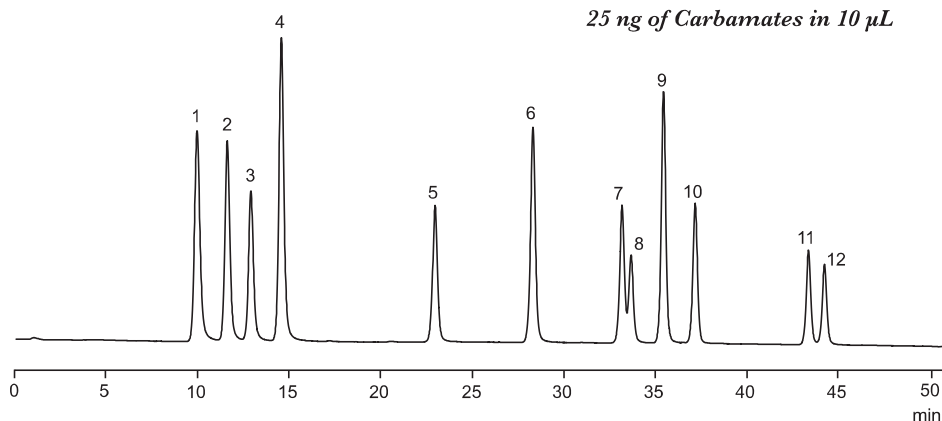
- |                       |                             |
|-----------------------|-----------------------------|
| 1 Aldicarb sulfoxide  | 7 Propoxur                  |
| 2 Aldicarb sulfone    | 8 Carbofuran                |
| 3 Oxamyl              | 9 Carbaryl                  |
| 4 Methomyl            | 10 1-Naphthol               |
| 5 3-Hydroxycarbofuran | 11 Methiocarb               |
| 6 Aldicarb            | 12 BDMC (internal standard) |

# CHROMATOGRAMS, COLUMNS & GUARDS

## EXPANDED RESOLUTION CARBAMATE COLUMN 0840250 (4.0 X 250 mm), 5 µm

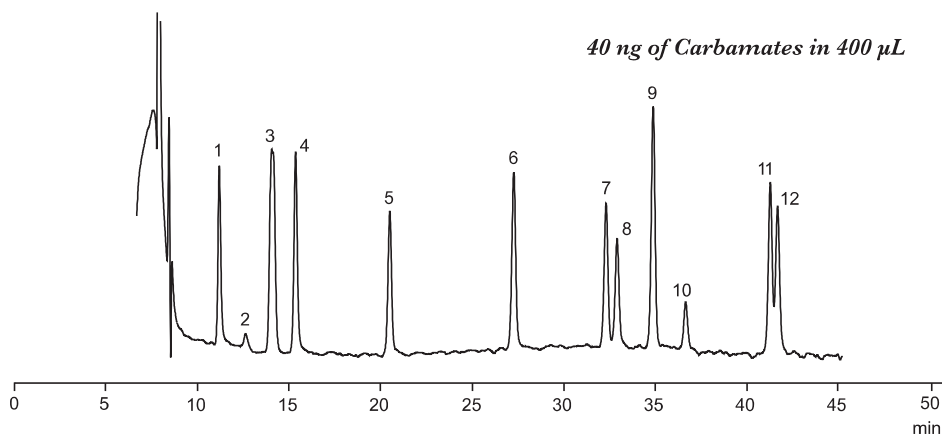
| CONDITIONS FOR WATER/METHANOL GRADIENT |         |        |
|--|---------|--------|
| TIME (Min)                             | WATER % | MeOH % |
| 0                                      | 85      | 15     |
| 2                                      | 85      | 15     |
| 42                                     | 30      | 70     |
| 46                                     | 30      | 70     |
| 46.1                                   | 0       | 100    |
| 51                                     | 0       | 100    |
| 51.1                                   | 85      | 15     |
| 59                                     | 85      | 15     |

FLOW RATE: 0.8 mL/min,  
COLUMN TEMP.: 50 °C,  
INJECTION VOLUME: 10 µL for  
methanolic and up to 400 µL for  
aqueous samples



| CONDITIONS FOR WATER/ACETONITRILE GRADIENT |         |       |
|--|---------|-------|
| TIME (Min)                                 | WATER % | ACN % |
| 0  | 90      | 10    |
| 2  | 90      | 10    |
| 46   | 49      | 51    |
| 46.1                                       | 30      | 70    |
| 49   | 30      | 70    |
| 49.1                                       | 90      | 10    |
| 59   | 90      | 10    |

FLOW RATE: 0.8 mL/min,  
COLUMN TEMP.: 50 °C,  
INJECTION VOLUME: 10 µL for  
methanolic and up to 400 µL for  
aqueous samples



- |                             |                              |                                    |
|-----------------------------|------------------------------|------------------------------------|
| <b>1</b> Aldicarb sulfoxide | <b>5</b> 3-Hydroxycarbofuran | <b>9</b> Carbaryl                  |
| <b>2</b> Aldicarb sulfone   | <b>6</b> Aldicarb            | <b>10</b> 1-Naphthol               |
| <b>3</b> Oxamyl             | <b>7</b> Propoxur            | <b>11</b> Methiocarb               |
| <b>4</b> Methomyl           | <b>8</b> Carbofuran          | <b>12</b> BDMC (internal standard) |

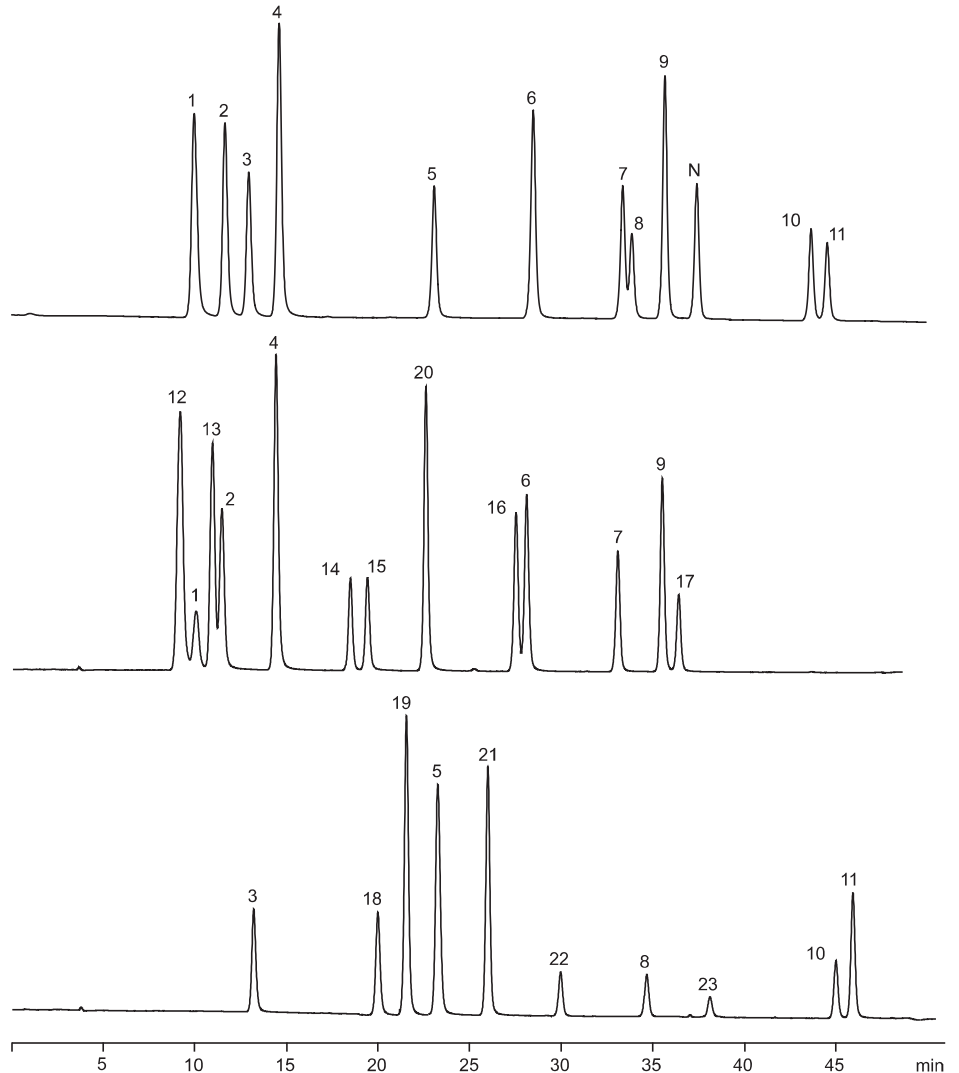
# CHROMATOGRAMS, COLUMNS & GUARDS

## SEPARATION OF 23 CARBAMATES USING 0840250 COLUMN (4.0 X 250 mm)

| CONDITIONS FOR WATER/METHANOL GRADIENT |         |        |
|--|---------|--------|
| TIME (Min)                             | WATER % | MeOH % |
| 0                                      | 85      | 15     |
| 2                                      | 85      | 15     |
| 42                                     | 30      | 70     |
| 46                                     | 30      | 70     |
| 46.1                                   | 0       | 100    |
| 51                                     | 0       | 100    |
| 51.1                                   | 85      | 15     |
| 59                                     | 85      | 15     |

FLOW RATE: 0.8 mL/min,  
COLUMN TEMP.: 50 °C,  
INJECTION VOLUME: 10 µL for  
methanolic and up to 400 µL for  
aqueous samples

- 1 Aldicarb sulfoxide
- 2 Aldicarb sulfone
- 3 Oxamyl
- 4 Methomyl
- 5 3-Hydroxy
- 6 Aldicarb
- 7 Propoxur
- 8 Carbofuran
- 9 Carbaryl
- 10 Methiocarb
- 11 BDMC internal standard
- 12 Butocarboxim sulfoxide
- 13 Butocarboxim sulfone
- 14 Ethiofencarb sulfoxide
- 15 Ethiofencarb sulfone
- 16 Butocarboxim
- 17 Ethiofencarb
- 18 Thiofanox sulfoxide
- 19 Thiofanox sulfone
- 20 Methiocarb sulfoxide
- 21 Methiocarb sulfone
- 22 3-Ketocarbofuran
- 23 Thiofanox
- N 1-Naphthol



| CARBAMATE COLUMNS CATALOG INFORMATION |  |
|---------------------------------------|--|
| CATALOG NO.                           | DESCRIPTION  |
| 0840250                               | Carbamate Column, expanded resolution, C <sub>18</sub> , 4.0 × 250 mm & 1700-0063 Carbamate Test Mixture, 2.5 µg/mL, 1.5 mL      |
| 0846250                               | Carbamate Column, high resolution/capacity, C <sub>18</sub> , 4.6 × 250 mm & 1700-0063 Carbamate Test Mixture, 2.5 µg/mL, 1.5 mL |
| 1846150                               | Carbamate Column, rapid analysis, C <sub>18</sub> , 4.6 × 150 mm & 1700-0063 Carbamate Test Mixture, 2.5 µg/mL, 1.5 mL           |
| 18ECG001                              | Guard Cartridge Holder with 3 guard cartridges   |
| 18ECG002                              | Guard Cartridges, 2/pk,  |