

Column: **MEGA-SE30 - 0.15mm, 0.10 $\mu$ m, 15m**  
Catalog Code: C-SE30-015-010-15

#### Conditions:

Injection: PTV 50°C (0.05min), 14.5°C/min, 250°C (5min),  
20mL/min split flow.

Sample: standard mix, 1mg/L.

Detector: Ion trap MS, transfer line and source 250°C, 70eV EI,  
50-350 amu scan rate.

Oven Program: 100°C, 12°C/min, 300°C (5min).

Carrier Gas: Helium, programmed pressure, 100kPa (0.05min),  
1000kPa/min, 170kPa (10min), 7kPa/min, 220kPa (0.4min).

1. Benzophenone
2. Diisopropylnaphthalene (isomer I)
3. Diisopropylnaphthalene (isomer II)
4. 2-hydroxybenzophenone
5. Diisopropylnaphthalene (isomer III)
6. Diisopropylnaphthalene (isomer IV + V)
7. Diisopropylnaphthalene (isomer VI)
8. 4-methylbenzophenone
9. Diisobutylphthalate
10. Dibutylphthalate
11. Benzylbutylphthalate
12. Diethylhexylphthalate
13. 4,4'-bis(diethylamino)benzophenone

Acknowledgement: Prof. M. Boccacci Mariani, Dr. Vanessa Giannetti, Università di Roma "Sapienza", Laboratorio di Merceologia, Dipartimento di Management, Via del Castro Laurenziano, 9, 00161 Roma.



## Analytical method steps:

### 1. Sampling

- multilayer recycled cardboard

### 2. Extraction

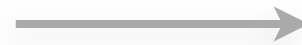
- accelerated solvent extraction (ASE)

### 3. Evaporation of the extracted sample

- pressure gradient rotary evaporation

### 4. GC/MS analysis

- Analysis with short (15m), 0.15mm I.D., MEGA-SE30 GC column



- **Faster analysis time**
- **Faster sample preparation**
- **Reduction of solvents use**
- **Method automation**
- **Higher throughput**

Acknowledgement: Prof. M. Boccacci Mariani, Dr. Vanessa Giannetti, Università di Roma "Sapienza", Laboratorio di Merceologia, Dipartimento di Management, Via del Castro Laurenziano, 9, 00161 Roma.



## Contaminant compounds:

Benzophenone  
2-hydroxybenzophenone  
4-methylbenzophenone  
4,4'-bis(diethylamino)benzophenone (DEAB)

Dibutylphthalate (DBP)  
Diethylhexylphthalate (DEHP)  
Diisobutylphthalate (DIBP)  
Benzylbutylphthalate (BBP)

Diisopropylnaphthalens (DIPNs, six isomers mix)

Mineral Oils (MOSH, MOAH)

## Role of the selectivity of the stationary phase:

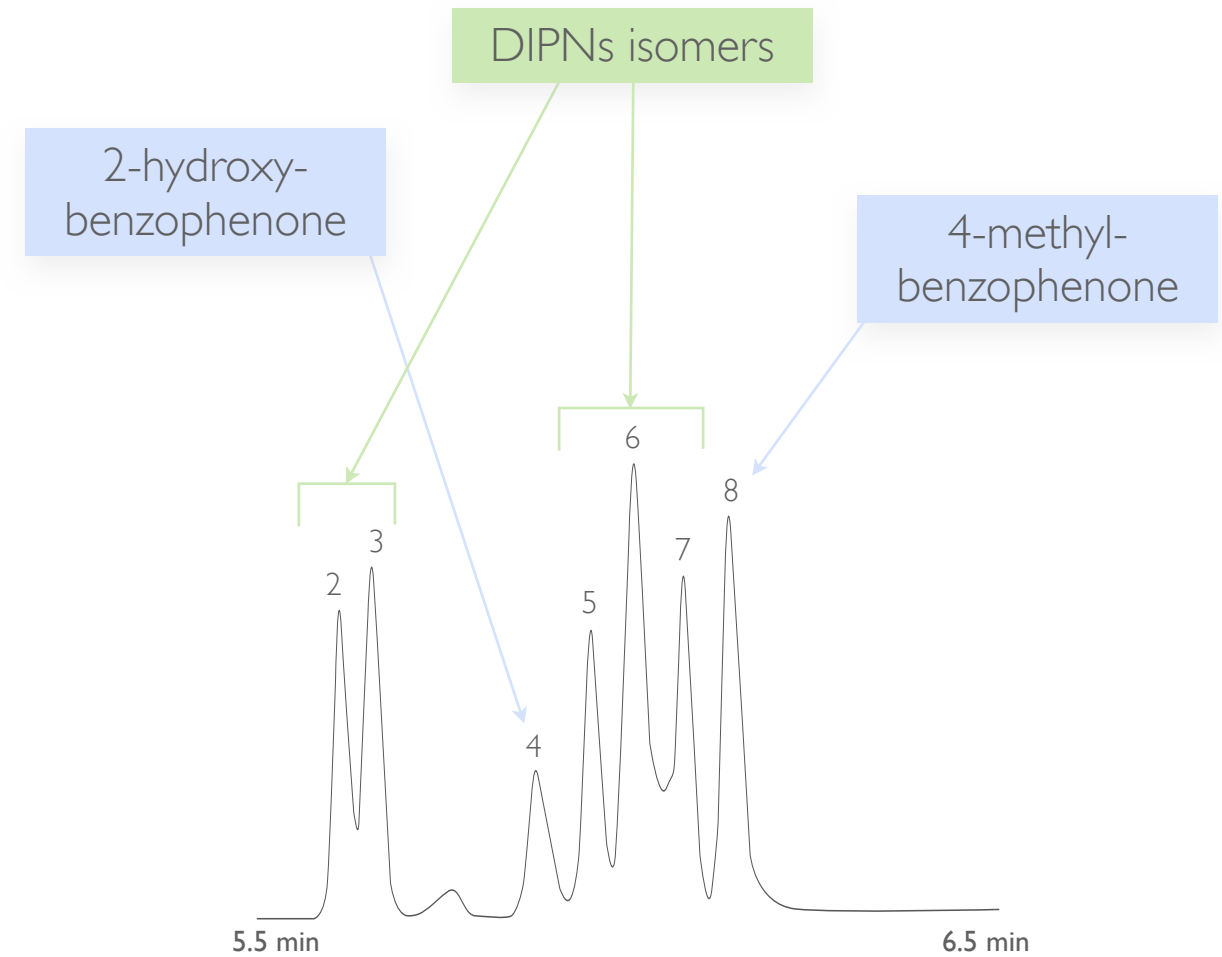


Figure reported from page I (see page I for the analytical conditions).

Acknowledgement: Prof. M. Boccacci Mariani, Dr. Vanessa Giannetti, Università di Roma "Sapienza", Laboratorio di Merceologia, Dipartimento di Management, Via del Castro Laurenziano, 9, 00161 Roma.

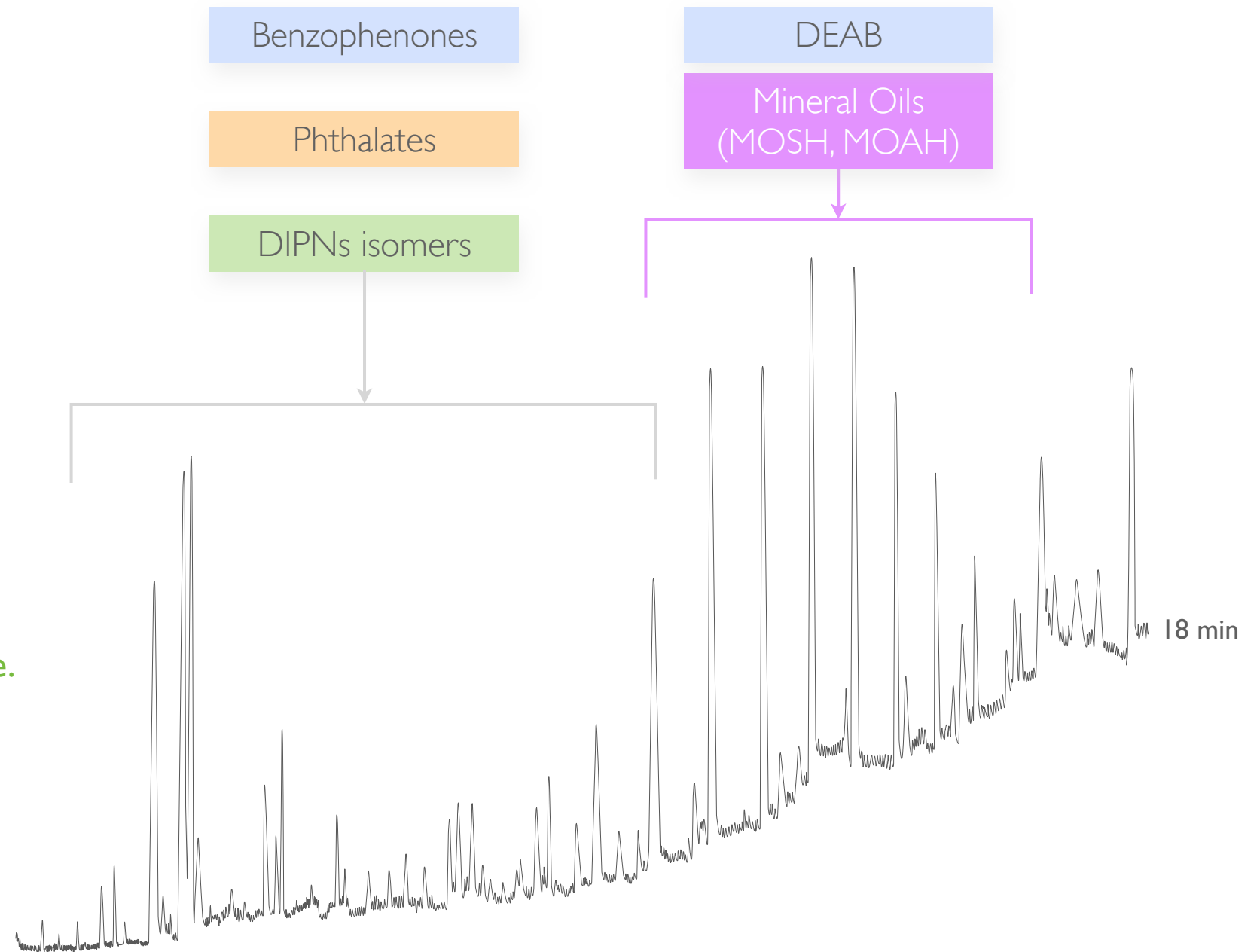


Column: **MEGA-SE30 - 0.15mm, 0.10µm, 15m**  
Catalog Code: C-SE30-015-010-15

### Conditions:

Injection: PTV 50°C (0.05min), 14.5°C/min, 250°C (5min),  
20mL/min split flow.  
Detector: Ion trap MS, transfer line and source 250°C, 70eV EI,  
50-350 amu scan rate.  
Oven Program: 100°C, 12°C/min, 300°C (5min).  
Carrier Gas: Helium, programmed pressure, 100kPa (0.05min),  
1000kPa/min, 170kPa (10min), 7kPa/min, 220kPa (0.4min).

**Real multilayer recycled cardboard sample.**



Acknowledgement: Prof. M. Boccacci Mariani, Dr. Vanessa Giannetti, Università di Roma "Sapienza", Laboratorio di Merceologia, Dipartimento di Management, Via del Castro Laurenziano, 9, 00161 Roma.



contact us: [info@mega.mi.it](mailto:info@mega.mi.it)

 follow us [@MEGAColumns](https://twitter.com/MEGAColumns)

[www.mega.mi.it](http://www.mega.mi.it)

*since*  
**1980** 