



Facultad de Veterinaria  
Universidad Zaragoza



# ANEXOS

¿Son seguras las cápsulas de café comerciales y reutilizables?:  
Estudios de migración

Are commercial, reusable coffee capsules safe?:  
Migration studies

Autor/es

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Tabla A1. Resultados obtenidos (áreas) para la **muestra F** con fibra GRIS y fibra ROJA, a 60 – 70 – 80 °C y un tiempo de extracción de 15 min.

| tR<br>(min) | Compuestos*   | Fibra GRIS |           |           | Fibra ROJA |           |           |
|-------------|---|------------|-----------|-----------|------------|-----------|-----------|
|             |   | F1_60_15m  | F2_70_15m | F3_80_15m | F4_60_15m  | F5_70_15m | F6_80_15m |
| 17,210      | 2,4-di-tert-butylphenol                                   | 6,80E+05   | 5,33E+05  | 3,82E+05  | 4,10E+06   | 1,57E+06  | 6,68E+05  |
| 17,274      | BHT <sup>1</sup>  | 5,81E+04   | 6,12E+04  | 3,07E+04  | 2,75E+05   | 2,28E+05  | 2,71E+04  |
| 18,263      | TXIB <sup>2</sup>   |            |           |           | 6,33E+05   | 2,62E+05  | 1,28E+05  |
| 19,226      | 1,3-di-iso-propylnaphthalene                              |            |           |           | 1,22E+06   | 6,92E+05  | 4,17E+05  |
| 19,290      | 1,7-di-iso-propylnaphthalene                              |            |           |           | 1,15E+06   | 9,57E+05  | 5,04E+05  |
| 19,299      | dodecyl acrylate  |            |           |           |            |           |           |
| 19,717      | 2,6-DiPNs <sup>3</sup>                                    |            |           |           | 3,23E+06   | 2,21E+06  | 1,59E+06  |
| 20,937      | hexahydrofarnesyl acetone                                 |            |           |           | 1,30E+06   | 3,92E+05  | 2,02E+05  |
| 21,161      | galaxolide  |            |           |           | 5,90E+05   | 4,21E+05  | 2,10E+05  |
| 21,225      | phthalic acid, hept-4-yl isobutyl ester                   |            |           |           | 1,02E+06   | 4,90E+05  | 1,98E+05  |
| 21,279      | 1-hexadecanol   |            |           |           | 3,45E+06   | 2,88E+06  | 2,42E+06  |
| 21,770      | 7,9-di-tert-butyl-1-oxaspiro(4,5)deca-6,9-diene-2,8-dione |            |           |           | 1,09E+06   | 4,40E+05  | 1,97E+05  |
| 22,060      | hexadecanoic acid   | 4,62E+06   | 8,44E+06  | 5,48E+06  | 4,05E+06   | 2,06E+05  |           |
| 22,405      | hexadecanoic acid, ethyl ester                            |            |           |           | 9,20E+05   | 1,06E+06  | 9,08E+05  |
| 23,250      | 1-octadecanol   | 1,56E+06   | 8,63E+06  | 1,00E+07  | 1,15E+07   | 8,11E+06  | 5,21E+06  |
| 23,541      | phytol  |            |           |           |            |           |           |
| 23,950      | octadecanoic acid   | 1,49E+06   | 4,41E+06  | 5,41E+06  | 1,11E+07   | 2,06E+06  |           |
| 24,140      | hexadecanamide  | 3,32E+05   | 6,53E+05  | 9,51E+05  |            |           |           |
| 25,721      | oleamide  | 4,67E+05   | 7,87E+05  | 1,79E+06  | 6,51E+06   | 6,62E+04  |           |
| 25,911      | stearamide  |            |           |           |            |           |           |
| 27,001      | 2,4-bis(dimethylbenzyl)phenol                             | 4,95E+05   | 1,00E+06  | 4,20E+05  | 2,71E+07   | 1,59E+07  | 7,33E+06  |
| 27,210      | diisooctyl phthalate                                      |            |           |           | 1,69E+06   | 9,14E+05  | 7,80E+05  |

\* Los compuestos están nombrados en inglés. <sup>1</sup> butylated hydroxytoluene; <sup>2</sup> 2,2,4-trimethyl-1,3-pentanediol diisobutyrate; <sup>3</sup> 2,6-diisopropylnaphthalene isomers

Tabla A2. Resultados obtenidos (áreas) para la **muestra L** con fibra GRIS y fibra ROJA, a 60 – 70 – 80 °C y un tiempo de extracción de 15 min.

| tR<br>(min) | Compuesto   | Fibra GRIS |           |           | Fibra ROJA |           |           |
|-------------|---|------------|-----------|-----------|------------|-----------|-----------|
|             |   | L1_60_15m  | L2_70_15m | L3_80_15m | L4_60_15m  | L5_70_15m | L6_80_15m |
| 17,210      | 2,4-di-tert-butylphenol                                   | 6,03E+05   | 5,31E+05  | 3,94E+05  | 2,71E+06   | 1,49E+06  | 7,18E+05  |
| 17,274      | BHT   | 7,68E+04   | 8,73E+04  | 7,51E+04  | 5,94E+05   | 4,71E+05  | 2,21E+05  |
| 18,263      | TXIB  |            |           |           | 4,50E+05   | 3,13E+05  | 1,76E+05  |
| 19,226      | 1,3-di-iso-propylnaphthalene                              |            |           |           | 6,20E+05   | 2,86E+05  | 2,01E+05  |
| 19,290      | 1,7-di-iso-propylnaphthalene                              |            |           |           | 6,88E+05   | 4,00E+05  | 4,07E+05  |
| 19,299      | dodecyl acrylate  |            |           |           |            |           |           |
| 19,717      | 2,6-DiPNs   |            |           |           | 1,96E+06   | 7,76E+05  | 8,04E+05  |
| 20,937      | hexahydrofarnesyl acetone                                 |            |           |           | 2,71E+05   | 1,77E+05  |           |
| 21,161      | galaxolide  |            |           |           | 4,09E+05   | 3,66E+05  | 1,92E+05  |
| 21,225      | phthalic acid, hept-4-yl isobutyl ester                   |            |           |           | 1,03E+06   | 6,40E+05  | 1,96E+05  |
| 21,279      | 1-hexadecanol   |            |           |           | 1,43E+06   | 2,03E+06  | 9,92E+05  |
| 21,770      | 7,9-di-tert-butyl-1-oxaspiro(4,5)deca-6,9-diene-2,8-dione |            |           |           | 4,64E+05   | 2,52E+05  | 1,26E+05  |
| 22,060      | hexadecanoic acid   | 2,28E+06   | 9,71E+06  | 6,65E+06  | 1,12E+06   |           |           |
| 22,405      | hexadecanoic acid, ethyl ester                            |            | 3,19E+05  | 4,45E+05  | 1,91E+06   | 2,71E+06  | 3,19E+06  |
| 23,250      | 1-octadecanol   | 1,20E+06   | 1,46E+07  | 1,45E+07  | 2,61E+06   | 2,69E+06  | 1,74E+06  |
| 23,541      | phytol  |            |           |           |            |           |           |
| 23,950      | octadecanoic acid   | 8,38E+05   | 5,58E+06  | 6,73E+06  | 5,13E+06   | 6,72E+05  | 1,98E+05  |
| 24,140      | hexadecanamide  | 1,85E+05   | 7,95E+05  | 1,49E+06  | 8,12E+05   | 5,31E+05  |           |
| 25,721      | oleamide  | 3,03E+05   | 9,13E+05  | 2,62E+06  | 4,40E+06   | 1,21E+06  |           |
| 25,911      | stearamide  |            |           | 1,21E+06  | 3,16E+05   | 1,74E+05  |           |
| 27,001      | 2,4-bis(dimethylbenzyl)phenol                             | 4,27E+05   | 1,28E+06  | 1,76E+06  | 3,32E+07   | 2,54E+07  | 1,49E+07  |
| 27,210      | diisooctyl phthalate                                      |            |           |           | 7,82E+05   | 1,23E+06  | 8,70E+05  |

Tabla A3. Resultados obtenidos (áreas) para la **muestra FO** con fibra GRIS y fibra ROJA, a 60 – 70 – 80 °C y un tiempo de extracción de 15 min.

| tR<br>(min) | Compuesto   | Fibra GRIS |            |            | Fibra ROJA |            |            |
|-------------|---|------------|------------|------------|------------|------------|------------|
|             |   | FO1_60_15m | FO2_70_15m | FO3_80_15m | FO4_60_15m | FO5_70_15m | FO6_80_15m |
| 17,210      | 2,4-di-tert-butylphenol                                   | 3,48E+05   | 3,05E+05   | 2,13E+05   | 1,89E+06   | 9,70E+05   | 4,52E+05   |
| 17,274      | BHT   | 9,85E+04   | 9,99E+04   | 9,00E+04   | 1,01E+06   | 8,00E+05   | 4,88E+05   |
| 18,263      | TXIB  |            |            |            | 1,17E+06   | 2,52E+05   | 1,19E+05   |
| 19,226      | 1,3-di-iso-propylnaphthalene                              |            |            |            | 1,13E+06   | 3,51E+05   | 6,84E+05   |
| 19,290      | 1,7-di-iso-propylnaphthalene                              |            |            |            | 1,52E+06   | 1,79E+06   |            |
| 19,299      | dodecyl acrylate  |            |            |            |            |            | 5,49E+06   |
| 19,717      | 2,6-DiPNs   |            |            |            | 4,09E+06   | 1,30E+06   | 3,19E+06   |
| 20,937      | hexahydrofarnesyl acetone                                 |            |            |            | 3,61E+05   | 5,71E+05   | 2,36E+02   |
| 21,161      | galaxolide  |            |            |            | 4,94E+05   | 2,88E+05   | 1,75E+05   |
| 21,225      | phthalic acid, hept-4-yl isobutyl ester                   |            |            |            | 7,35E+05   | 2,97E+05   | 1,30E+05   |
| 21,279      | 1-hexadecanol   |            |            |            | 2,08E+06   | 8,78E+05   | 2,25E+06   |
| 21,770      | 7,9-di-tert-butyl-1-oxaspiro(4,5)deca-6,9-diene-2,8-dione |            |            |            | 5,08E+05   | 3,10E+05   | 1,64E+05   |
| 22,060      | hexadecanoic acid   | 3,22E+06   | 6,27E+06   | 3,71E+06   | 4,03E+06   | 4,49E+05   | 2,09E+05   |
| 22,405      | hexadecanoic acid, ethyl ester                            |            | 2,04E+05   | 4,54E+05   | 2,60E+05   | 5,55E+05   | 3,95E+05   |
| 23,250      | 1-octadecanol   | 2,08E+06   | 6,30E+06   | 1,27E+07   | 6,06E+06   | 2,71E+06   | 4,13E+06   |
| 23,541      | phytol  |            |            |            |            |            | 1,95E+06   |
| 23,950      | octadecanoic acid   | 1,32E+06   | 5,06E+06   | 3,58E+06   | 1,16E+07   | 3,32E+06   | 1,35E+06   |
| 24,140      | hexadecanamide  | 2,62E+05   | 2,00E+06   | 5,38E+05   |            |            | 5,11E+06   |
| 25,721      | oleamide  | 3,07E+05   | 3,43E+06   | 9,10E+05   | 4,56E+06   |            | 3,47E+07   |
| 25,911      | stearamide  |            |            |            |            |            | 2,95E+07   |
| 27,001      | 2,4-bis(dimethylbenzyl)phenol                             | 4,67E+05   | 1,31E+06   | 3,78E+05   | 1,39E+07   | 8,16E+06   | 6,60E+06   |
| 27,210      | diisooctyl phthalate                                      |            |            |            | 1,33E+06   | 8,88E+05   | 1,85E+06   |

Tabla A4. Resultados obtenidos (áreas) para la **muestra N** con fibra GRIS y fibra ROJA, a 60 – 70 – 80 °C y un tiempo de extracción de 15 min.

| tR<br>(min) | Compuesto   | Fibra GRIS |           |           | Fibra ROJA |           |           |
|-------------|---|------------|-----------|-----------|------------|-----------|-----------|
|             |   | N4_60_15m  | N5_70_15m | N6_80_15m | N4_60_15m  | N5_70_15m | N6_80_15m |
| 17,210      | 2,4-di-tert-butylphenol                                   | 4,53E+06   | 4,02E+06  | 3,02E+06  | 1,26E+07   | 8,02E+06  | 3,62E+06  |
| 17,274      | BHT   |            |           |           | 5,84E+05   | 3,73E+05  | 2,57E+05  |
| 18,263      | TXIB  |            |           |           | 4,38E+05   | 3,09E+05  | 1,75E+05  |
| 19,226      | 1,3-di-iso-propylnaphthalene                              |            |           |           | 4,08E+05   | 5,91E+05  | 2,36E+05  |
| 19,290      | 1,7-di-iso-propylnaphthalene                              |            |           |           | 4,56E+05   | 7,50E+05  | 3,56E+05  |
| 19,299      | dodecyl acrylate  |            |           |           |            |           |           |
| 19,717      | 2,6-DiPNs   |            |           |           | 1,15E+06   | 2,51E+06  | 7,64E+05  |
| 20,937      | hexahydrofarnesyl acetone                                 |            |           |           |            |           | 3,63E+05  |
| 21,161      | galaxolide  |            |           |           | 4,22E+05   | 3,42E+05  | 2,58E+05  |
| 21,225      | phthalic acid, hept-4-yl isobutyl ester                   |            |           |           | 8,13E+05   | 4,96E+05  | 1,76E+05  |
| 21,279      | 1-hexadecanol   |            |           |           | 1,06E+06   | 1,40E+06  | 9,14E+05  |
| 21,770      | 7,9-di-tert-butyl-1-oxaspiro(4,5)deca-6,9-diene-2,8-dione | 2,25E+05   | 2,04E+05  | 1,77E+05  | 6,04E+05   | 4,39E+05  | 1,18E+05  |
| 22,060      | hexadecanoic acid   | 3,48E+06   | 3,61E+06  | 1,93E+06  | 1,89E+06   | 4,12E+05  |           |
| 22,405      | hexadecanoic acid, ethyl ester                            | 1,87E+05   | 5,48E+05  | 7,81E+05  | 5,46E+05   | 4,80E+05  | 4,40E+05  |
| 23,250      | 1-octadecanol   | 2,35E+06   | 5,14E+06  | 1,21E+07  | 1,85E+06   | 1,75E+06  | 3,36E+06  |
| 23,541      | phytol  |            |           |           | 3,34E+05   |           |           |
| 23,950      | octadecanoic acid   | 1,58E+06   | 3,02E+06  | 2,24E+06  | 8,83E+06   | 2,12E+06  | 1,05E+06  |
| 24,140      | hexadecanamide  | 3,27E+05   | 1,53E+06  | 1,11E+06  | 1,01E+07   | 3,33E+05  |           |
| 25,721      | oleamide  | 4,44E+05   | 2,53E+06  | 2,55E+06  | 4,32E+07   |           |           |
| 25,911      | stearamide  |            |           |           | 1,76E+07   |           | 5,12E+05  |
| 27,001      | 2,4-bis(dimethylbenzyl)phenol                             | 1,05E+06   | 2,03E+06  | 2,54E+06  | 1,46E+07   | 8,87E+06  | 4,78E+06  |
| 27,210      | diisooctyl phthalate                                      |            |           |           | 9,29E+05   | 9,82E+05  | 1,53E+06  |

Tabla A5. Resultados obtenidos (áreas) para la **muestra F** con fibra ROJA a 10 – 15 – 20 min de tiempo de extracción y temperatura extracción 60 °C.

| tR (min) | Compuesto   | F7_60_10m | F4_60_15m | F8_60_20m |
|----------|---|-----------|-----------|-----------|
| 17,210   | 2,4-di-tert-butylphenol                                   | 8,64E+05  | 4,10E+06  | 1,30E+06  |
| 17,274   | BHT   | 8,71E+04  | 2,75E+05  | 2,50E+05  |
| 18,263   | TXIB  | 1,11E+04  | 6,33E+05  | 8,19E+04  |
| 19,226   | 1,3-di-iso-propylnaphthalene                              |           | 1,22E+06  |           |
| 19,290   | 1,7-di-iso-propylnaphthalene                              |           | 1,15E+06  |           |
| 19,299   | dodecyl acrylate  |           |           |           |
| 19,717   | 2,6-DiPNs   |           | 3,23E+06  | 2,76E+05  |
| 20,937   | hexahydrofarnesyl acetone                                 |           | 1,85E+06  | 1,74E+06  |
| 21,161   | galaxolide  | 6,46E+04  | 5,90E+05  | 2,32E+05  |
| 21,225   | phthalic acid, hept-4-yl isobutyl ester                   | 1,72E+05  | 1,02E+06  | 7,42E+05  |
| 21,279   | 1-hexadecanol   |           | 3,45E+06  |           |
| 21,770   | 7,9-di-tert-butyl-1-oxaspiro(4,5)deca-6,9-diene-2,8-dione | 1,80E+05  | 1,09E+06  | 2,78E+05  |
| 22,060   | hexadecanoic acid   | 8,92E+05  | 4,05E+06  | 1,29E+06  |
| 22,405   | hexadecanoic acid, ethyl ester                            |           | 9,20E+05  | 2,50E+05  |
| 23,250   | 1-octadecanol   |           | 1,15E+07  | 1,43E+06  |
| 23,541   | phytol  |           |           |           |
| 23,950   | octadecanoic acid   | 6,06E+05  | 1,11E+07  | 3,95E+06  |
| 24,140   | hexadecanamide  |           |           |           |
| 25,721   | oleamide  |           | 6,51E+06  |           |
| 25,911   | stearamide  |           |           |           |
| 27,001   | 2,4-bis(dimethylbenzyl)phenol                             |           | 2,71E+07  | 6,98E+06  |
| 27,210   | diisooctyl phthalate                                      |           | 1,69E+06  | 6,15E+05  |

Tabla A6. Resultados obtenidos (áreas) para la **muestra L** con fibra ROJA a 10 – 15 – 20 min de tiempo de extracción y temperatura extracción 60 °C.

| tR (min) | Compuesto   | L7_60_10m | L4_60_15m | L8_60_20m |
|----------|---|-----------|-----------|-----------|
| 17,210   | 2,4-di-tert-butylphenol                                   | 8,99E+05  | 2,71E+06  | 1,52E+06  |
| 17,274   | BHT   | 1,97E+05  | 5,94E+05  | 5,55E+05  |
| 18,263   | TXIB  | 2,83E+04  | 4,50E+05  | 1,29E+05  |
| 19,226   | 1,3-di-iso-propylnaphthalene                              |           | 6,20E+05  |           |
| 19,290   | 1,7-di-iso-propylnaphthalene                              |           | 6,88E+05  |           |
| 19,299   | dodecyl acrylate  |           |           |           |
| 19,717   | 2,6-DiPNs   |           | 1,96E+06  |           |
| 20,937   | hexahydrofarnesyl acetone                                 |           |           |           |
| 21,161   | galaxolide  | 1,02E+05  | 4,09E+05  | 3,18E+05  |
| 21,225   | phthalic acid, hept-4-yl isobutyl ester                   | 2,33E+05  | 1,03E+06  | 4,41E+05  |
| 21,279   | 1-hexadecanol   |           | 1,43E+06  | 4,73E+05  |
| 21,770   | 7,9-di-tert-butyl-1-oxaspiro(4,5)deca-6,9-diene-2,8-dione | 2,54E+05  | 4,64E+05  | 3,93E+05  |
| 22,060   | hexadecanoic acid   | 2,79E+05  | 1,12E+06  | 4,80E+05  |
| 22,405   | hexadecanoic acid, ethyl ester                            | 7,73E+05  | 1,91E+06  | 5,10E+06  |
| 23,250   | 1-octadecanol   | 2,43E+06  | 2,61E+06  | 1,62E+07  |
| 23,541   | phytol  |           |           |           |
| 23,950   | octadecanoic acid   | 1,39E+06  | 5,13E+06  | 4,10E+06  |
| 24,140   | hexadecanamide  |           | 8,12E+05  |           |
| 25,721   | oleamide  |           | 4,40E+06  |           |
| 25,911   | stearamide  |           | 3,16E+05  |           |
| 27,001   | 2,4-bis(dimethylbenzyl)phenol                             | 9,12E+06  | 3,32E+07  | 2,97E+07  |
| 27,210   | diisooctyl phthalate                                      | 1,32E+06  | 7,82E+05  | 6,81E+05  |

Tabla A7. Resultados obtenidos (áreas) para la **muestra FO** con fibra ROJA a 10 – 15 – 20 min de tiempo de extracción y temperatura extracción 60 °C.

| tR (min) | Compuesto   | FO7_60_10m | FO4_60_15m | FO8_60_20m |
|----------|---|------------|------------|------------|
| 17,210   | 2,4-di-tert-butylphenol                                   | 6,72E+05   | 1,89E+06   | 8,23E+05   |
| 17,274   | BHT   | 2,85E+05   | 1,01E+06   | 7,34E+05   |
| 18,263   | TXIB  | 5,07E+04   | 1,17E+06   | 1,86E+05   |
| 19,226   | 1,3-di-iso-propylnaphthalene                              |            | 1,13E+06   |            |
| 19,290   | 1,7-di-iso-propylnaphthalene                              |            | 1,52E+06   |            |
| 19,299   | dodecyl acrylate  |            |            |            |
| 19,717   | 2,6-DiPNs   |            | 4,09E+06   |            |
| 20,937   | hexahydrofarnesyl acetone                                 |            |            | 3,12E+06   |
| 21,161   | galaxolide  |            | 4,94E+05   | 2,71E+05   |
| 21,225   | phthalic acid, hept-4-yl isobutyl ester                   | 2,15E+05   | 7,35E+05   | 3,55E+05   |
| 21,279   | 1-hexadecanol   |            | 2,08E+06   |            |
| 21,770   | 7,9-di-tert-butyl-1-oxaspiro(4,5)deca-6,9-diene-2,8-dione | 1,84E+05   | 5,08E+05   | 3,70E+05   |
| 22,060   | hexadecanoic acid   | 1,89E+06   | 4,03E+06   | 3,26E+06   |
| 22,405   | hexadecanoic acid, ethyl ester                            |            | 2,60E+05   | 3,86E+05   |
| 23,250   | 1-octadecanol   |            | 6,06E+06   | 4,41E+06   |
| 23,541   | phytol  |            |            |            |
| 23,950   | octadecanoic acid   | 2,20E+06   | 1,16E+07   | 8,90E+06   |
| 24,140   | hexadecanamide  |            |            |            |
| 25,721   | oleamide  |            | 4,56E+06   |            |
| 25,911   | stearamide  |            |            |            |
| 27,001   | 2,4-bis(dimethylbenzyl)phenol                             |            | 1,39E+07   | 6,30E+06   |
| 27,210   | diisooctyl phthalate                                      |            | 1,33E+06   | 5,93E+05   |

Tabla A8. Resultados obtenidos (áreas) para la **muestra N** con fibra ROJA a 10 – 15 – 20 min de tiempo de extracción y temperatura extracción 60 °C.

| tR (min) | Compuesto   | N7_60_10m | N4_60_15m | N8_60_20m |
|----------|---|-----------|-----------|-----------|
| 17,210   | 2,4-di-tert-butylphenol                                   | 6,82E+06  | 1,26E+07  | 1,04E+07  |
| 17,274   | BHT   | 3,70E+05  | 7,73E+05  | 6,94E+05  |
| 18,263   | TXIB  | 2,91E+04  | 4,38E+05  | 1,28E+05  |
| 19,226   | 1,3-di-iso-propylnaphthalene                              |           | 4,08E+05  |           |
| 19,290   | 1,7-di-iso-propylnaphthalene                              |           | 4,56E+05  |           |
| 19,299   | dodecyl acrylate  |           |           | 2,15E+06  |
| 19,717   | 2,6-DiPNs   |           | 1,15E+06  | 4,46E+05  |
| 20,937   | hexahydrofarnesyl acetone                                 | 3,09E+06  |           | 2,17E+06  |
| 21,161   | galaxolide  | 1,56E+05  | 4,22E+05  | 3,31E+05  |
| 21,225   | phthalic acid, hept-4-yl isobutyl ester                   | 2,64E+05  | 8,13E+05  | 3,69E+05  |
| 21,279   | 1-hexadecanol   | 3,26E+05  | 1,06E+06  | 2,60E+05  |
| 21,770   | 7,9-di-tert-butyl-1-oxaspiro(4,5)deca-6,9-diene-2,8-dione | 2,12E+05  | 6,04E+05  | 2,96E+05  |
| 22,060   | hexadecanoic acid   | 5,40E+06  | 1,89E+06  | 7,77E+06  |
| 22,405   | hexadecanoic acid, ethyl ester                            | 2,48E+05  | 5,46E+05  | 5,25E+05  |
| 23,250   | 1-octadecanol   | 3,51E+07  | 1,85E+06  | 2,79E+06  |
| 23,541   | phytol  |           | 3,34E+05  | 4,37E+06  |
| 23,950   | octadecanoic acid   | 1,10E+07  | 8,83E+06  | 2,46E+07  |
| 24,140   | hexadecanamide  |           | 1,01E+07  | 1,51E+07  |
| 25,721   | oleamide  |           | 4,32E+07  | 7,60E+07  |
| 25,911   | stearamide  |           | 1,76E+07  | 2,92E+07  |
| 27,001   | 2,4-bis(dimethylbenzyl)phenol                             | 2,59E+06  | 1,46E+07  | 7,96E+06  |
| 27,210   | diisooctyl phthalate                                      | 5,54E+05  | 9,29E+05  | 1,39E+06  |

Tabla A7. Resultados obtenidos (áreas y desviación estándar) para las cápsulas F y L tras 1ª y 3ª migración mediante análisis SPME-GC/MS.

| t <sub>R</sub> (min) | Compuestos   | FM1_media | ds       | FM3_media | ds       | LM1_media | ds       | LM3_media | ds       |
|----------------------|--|-----------|----------|-----------|----------|-----------|----------|-----------|----------|
| 9,07                 | tetraethyl silicate  |           |          |           |          | 2,46E+06  | 5,69E+05 | 2,38E+06  | 8,02E+05 |
| 16,71                | 2,6-di-tert-butylbenzoquinone  | 2,09E+05  | 2,29E+04 | 2,08E+05  | 1,26E+05 | 4,56E+05  | 1,96E+05 | 2,28E+05  | 8,75E+04 |
| 17,20                | 2,4-di-tert-butylphenol <sup>1</sup>                                 | 2,64E+06  | 5,09E+05 | 2,78E+06  | 1,54E+06 | 4,73E+06  | 9,11E+05 | 1,59E+06  | 3,00E+05 |
| 17,25                | BHT <sup>2</sup>   |           |          |           |          | 7,32E+05  | 1,18E+05 | 7,89E+05  | 1,55E+05 |
| 18,25                | TIXB <sup>3</sup>  | 7,09E+04  | 1,51E+04 | -         | -        |           |          |           |          |
| 18,79                | butanamide, N-methyl-4-(methylthio)-2-(2,2-dimethylpropylidene)amino | 1,61E+05  | 1,47E+04 | 3,43E+05  | 2,69E+05 |           |          |           |          |
| 19,22                | 1,3-di-iso-propylnaphthalene   |           |          |           |          |           |          |           |          |
| 19,28                | 1,7-di-iso-propylnaphthalene   |           |          |           |          |           |          |           |          |
| 19,7-19,9            | 2,6-DiPNs <sup>4</sup>   |           |          |           |          |           |          |           |          |
| 20,60                | 2-ethylhexyl salicylate  |           |          |           |          |           |          |           |          |
| 21,14                | galaxolide   |           |          |           |          | 5,17E+05  | 1,69E+05 | -         | -        |
| 21,22                | DiBP <sup>5</sup>  |           |          |           |          |           |          |           |          |
| 21,46                | homosalate (3,3,5-trimethyl cyclohexyl salicylate)                   |           |          |           |          |           |          |           |          |
| 21,76                | 7,9-di-tert-butyl-1-oxaspiro (4,5)deca-6,9-diene-2,8-dione           | 1,38E+05  | 4,93E+04 | -         | -        | 6,86E+05  | 2,63E+05 | -         | -        |
| 21,96                | Ralox35 <sup>6</sup>   | 3,23E+05  | 4,54E+04 | 3,22E+05  | 1,36E+05 | 7,16E+05  | 2,07E+05 | 5,32E+05  | 1,48E+05 |
| 22,05                | hexadecanoic acid  |           |          |           |          |           |          |           |          |
| 22,39                | hexadecanoic acid, ethyl ester                                       |           |          |           |          |           |          |           |          |
| 23,24                | hexadecen-1-ol, trans-9  |           |          |           |          |           |          |           |          |
| 23,93                | octadecanoic acid  |           |          |           |          |           |          |           |          |
| 24,23                | octadecanoic acid, ethyl ester                                       | 2,34E+05  | 1,84E+05 | -         | -        |           |          |           |          |
| 25,98                | Kodaflex DOA <sup>7</sup>  | 2,77E+05  | 1,01E+05 | -         | -        | 3,11E+06  | 1,29E+06 | 1,86E+06  | 3,32E+04 |
| 26,88                | hexadecanoic acid, 2-hydroxy-1-(hydroxymethyl)ethyl ester            |           |          |           |          | 9,48E+05  | 3,34E+05 | -         | -        |
| 26,99                | 2,4-bis(dimethylbenzyl)phenol  | 2,30E+06  | 1,42E+06 | -         | -        | 1,64E+07  | 3,99E+06 | -         | -        |
| 27,19                | DiOP <sup>8</sup>  |           |          |           |          | 1,42E+06  | 2,02E+05 | -         | -        |
| 28,20                | octocrylene <sup>9</sup>   |           |          |           |          |           |          |           |          |
| 28,43                | octadecanoic acid, 2,3-dihydroxy propyl ester                        |           |          |           |          |           |          | -         | -        |

<sup>1</sup> Antioxidante 33; <sup>2</sup> Butylated hydroxytoluene; <sup>3</sup> 2,2,4-trimethyl-1,3-pentanediol diisobutyrate; <sup>4</sup> 2,6-di-iso-propylnaphthalene isómeros; <sup>5</sup> Diisobutyl phthalate; <sup>6</sup> Methyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate; <sup>7</sup> Adipato de bis(2-etilhexilo); <sup>8</sup> Diisooctyl phthalate y <sup>9</sup> 2-Ethylhexyl 2-cyano-3,3-diphenylacrylate.

Tabla A8. Resultados obtenidos (áreas y desviación estándar) para las cápsulas FO y N tras 1ª y 3ª migración mediante análisis SPME-GC/MS.

| t <sub>R</sub> (min) | Compuestos   | FOM1_media | ds       | FOM3_media | ds       | NM1_media | ds       | NM3_media | ds       |
|----------------------|--|------------|----------|------------|----------|-----------|----------|-----------|----------|
| 9,07                 | tetraethyl silicate  | 3,48E+05   | 1,61E+05 | 1,55E+06   | 1,23E+05 | 3,40E+05  | 1,97E+05 | -         | -        |
| 16,71                | 2,6-di-tert-butylbenzoquinone  | 1,92E+05   | 2,60E+04 | 3,23E+04   | 7,11E+03 | 1,21E+05  | 2,16E+04 | 1,28E+05  | 7,65E+04 |
| 17,20                | 2,4-di-tert-butylphenol <sup>1</sup>                                 | 1,53E+06   | 5,44E+05 | 4,37E+05   | 4,51E+04 | 7,05E+06  | 3,71E+05 | 7,20E+06  | 7,92E+05 |
| 17,25                | BHT <sup>2</sup>   | 6,22E+05   | 1,26E+04 | 4,06E+05   | 2,42E+04 |           |          |           |          |
| 18,25                | TIXB <sup>3</sup>  | 1,20E+05   | 6,77E+04 | -          | -        | 5,65E+04  | 4,15E+04 | 6,48E+04  | 4,65E+04 |
| 18,79                | butanamide, N-methyl-4-(methylthio)-2-(2,2-dimethylpropylidene)amino |            |          |            |          | 5,56E+04  | 4,50E+04 | 1,63E+05  | 6,06E+04 |
| 19,22                | 1,3-di-iso-propylnaphthalene   |            |          |            |          |           |          |           |          |
| 19,28                | 1,7-di-iso-propylnaphthalene   |            |          |            |          |           |          |           |          |
| 19,7-19,9            | 2,6-DiPNs <sup>4</sup>   |            |          |            |          |           |          |           |          |
| 20,60                | 2-ethylhexyl salicylate  |            |          |            |          |           |          |           |          |
| 21,14                | galaxolide   |            |          |            |          |           |          |           |          |
| 21,22                | DiBP <sup>5</sup>  |            |          |            |          |           |          |           |          |
| 21,46                | homosalate (3,3,5-trimethyl cyclohexyl salicylate)                   |            |          |            |          |           |          |           |          |
| 21,76                | 7,9-di-tert-butyl-1-oxaspiro (4,5)deca-6,9-diene-2,8-dione           | 5,87E+03   | 6,67E+00 | -          | -        | 3,19E+05  | 1,47E+05 | 4,26E+05  | 2,20E+05 |
| 21,96                | Ralox35 <sup>6</sup>   | 2,41E+05   | 1,02E+04 | 1,31E+05   | 2,69E+03 | 9,62E+04  | 7,77E+03 | 1,30E+05  | 2,86E+04 |
| 22,05                | hexadecanoic acid  | 7,91E+04   | 2,26E+04 | 6,77E+05   | 1,61E+05 |           |          |           |          |
| 22,39                | hexadecanoic acid, ethyl ester                                       |            |          |            |          |           |          |           |          |
| 23,24                | hexadecen-1-ol, trans-9  |            |          |            |          |           |          |           |          |
| 23,93                | octadecanoic acid  |            |          |            |          |           |          |           |          |
| 24,23                | octadecanoic acid, ethyl ester                                       |            |          |            |          |           |          |           |          |
| 25,98                | Kodaflex DOA <sup>7</sup>  | -          | -        | 1,72E+05   | 2,97E+04 | 6,56E+05  | 3,10E+05 | 7,26E+05  | 2,10E+05 |
| 26,88                | hexadecanoic acid, 2-hydroxy-1-(hydroxymethyl)ethyl ester            | 1,11E+06   | 8,98E+05 | -          | -        | 5,53E+05  | 8,92E+04 | -         | -        |
| 26,99                | 2,4-bis(dimethylbenzyl)phenol  |            |          |            |          |           |          |           |          |
| 27,19                | DiOP <sup>8</sup>  |            |          |            |          |           |          |           |          |
| 28,20                | octocrylene <sup>9</sup>   |            |          |            |          |           |          |           |          |
| 28,43                | octadecanoic acid, 2,3-dihydroxy propyl ester                        | 1,11E+06   | 2,09E+05 | -          | -        | 4,46E+05  | 2,31E+05 | -         | -        |

<sup>1</sup> Antioxidante 33; <sup>2</sup> Butylated hydroxytoluene; <sup>3</sup> 2,2,4-trimethyl-1,3-pentanediol diisobutyrate; <sup>4</sup> 2,6-di-iso-propylnaphthalene isómeros; <sup>5</sup> Diisobutyl phthalate; <sup>6</sup> Methyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate; <sup>7</sup> Adipato de bis(2-etilhexilo); <sup>8</sup> Diisooctyl phthalate y <sup>9</sup> 2-Ethylhexyl 2-cyano-3,3-diphenylacrylate.