

**Date:** 2016-05-12  
 (YYYY-MM-DD / AAAA-MM-JJ)

## Certificate of Analysis / Certificat d'analyse

**Product code / Code du produit:** VHE054C  
**Batch No. / No. de lot:** MP-07-0057  
**Trade name / Nom commercial:** Essential Oil of Celery / Huile essentielle de céleri  
**Botanical name / Nom botanique:** *Apium graveolens* var. dulce  
**INCI name / Nom INCI:** APIUM GRAVEOLENS SEED OIL  
**Use of product / Utilisation:** Cosmetics / Cosmétique  
**Country of origin / Pays d'origine:** India/Inde  
**Certification:** None (Conventional crop) / Aucune (agriculture conventionnelle)

### 1. Method of production / Méthode d'obtention

Essential Oil obtained by steam distillation of the seed of *Apium graveolens* var. dulce. / Huile essentielle obtenue par distillation à la vapeur d'eau de la semence d'*Apium graveolens* var. dulce.

### 2. Certificate of Purity and Origin / Certificat de pureté et d'origine

- 100% pure and natural without any additive, and not sprayed with chemicals. / 100% pur et naturel sans aucun additif, et sans arrosage chimique.
- Certified India origin / Origine Inde certifiée.

### 3. Organoleptic and Physical Properties / Caractéristiques organoleptiques et physiques

| Requirements / Spécifications   |   | Results / Résultats                   |
|---|---|---------------------------------------|
| <b>Physical appearance / Aspect physique:</b>                         | <b>Clear Mobile Liquid / Liquide mobile limpide</b>                       | <b>Compliant / Conforme</b>           |
| <b>Colour / Couleur:</b>  | <b>Almost colorless to pale yellow</b><br>/ Presque incolore à jaune pâle | <b>Compliant / Conforme</b>           |
| <b>Odor / Odeur:</b>  | <b>Fresh, typical of the plant</b><br>/ Fraîche, typique de la plante     | <b>Compliant / Conforme</b>           |
| <b>Specific Gravity at 68°F (20°C) / Densité à 20°C:</b>              | <b>0,860 to/à 0,905</b>   | <b>Not Available / Non disponible</b> |
| <b>Refractive Index at 68°F (20°C) / Indice de réfraction à 20°C:</b> | <b>1,480 to/à 1,495</b>   | <b>1,485</b>                          |
| <b>Optical Rotation at 68°F (20°C) / Pouvoir rotatoire à 20°C:</b>    | <b>+30 ° to/à +75 °</b>   | <b>Not Available / Non disponible</b> |

© UNION NATURE AROMA-PHYTO INC. Celery Essential Oil / Huile essentielle de céleri  
 Lot MP-07-0057

UNION NATURE Aroma-Phyto inc.  
 C.P. / P.O. BOX 444, Succ. Mt-Royal Station, Mt-Royal (QC) Canada H3P 3C6  
 Tel: (514) 344-7777 - Fax: (514) 344-8111  
 info@union-nature.com - [www.union-nature.com](http://www.union-nature.com)

#### 4. Analysis Properties / Caractéristiques d'analyse

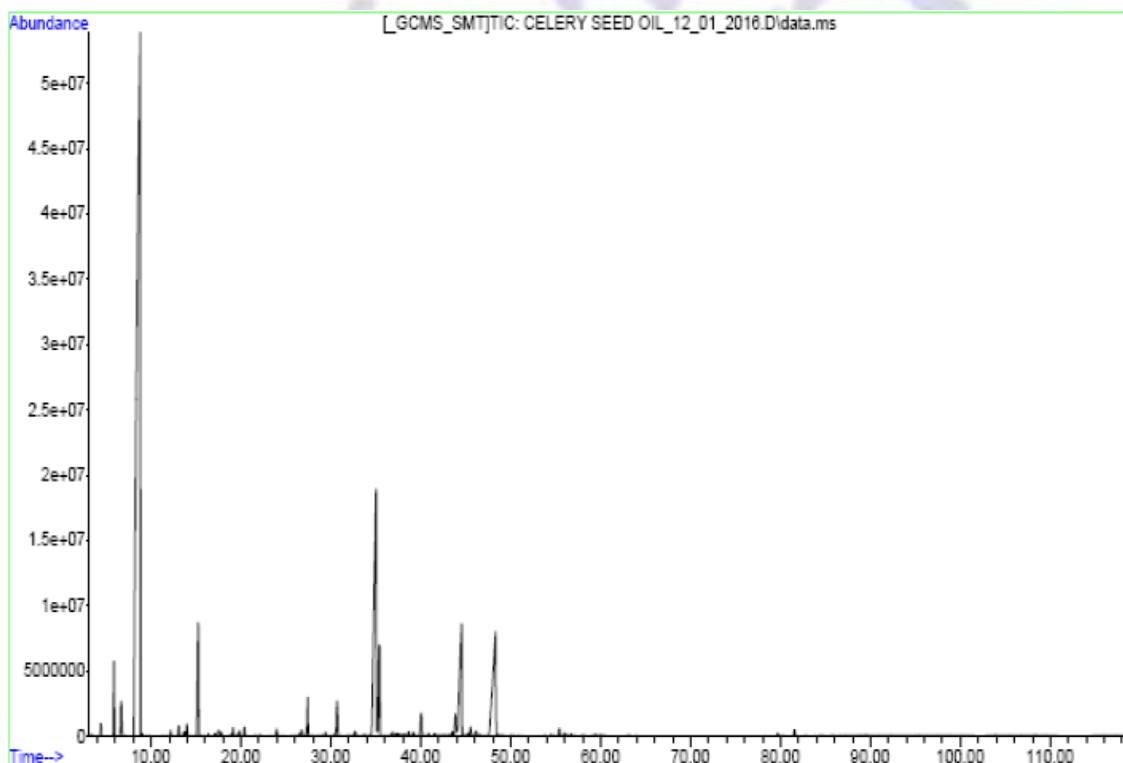
##### 4.1 Métaux Lourds

| Test       | Specification | Test Result        | Method   | Analyst Date  |
|------------|---------------|--------------------|----------|---------------|
| Pesticides | Meets USP     | Compliant/conforme | USP<561> | TN 2016-03-13 |
| Arsenic    | N/A           | <0,03 ppm          | ICP-MS   | GK 2016-03-16 |
| Cadmium    | N/A           | <0,02 ppm          | ICP-MS   | GK 2016-03-16 |
| Lead       | N/A           | 0,23 ppm           | ICP-MS   | GK 2016-03-16 |
| Mercury    | N/A           | 0,05 ppm           | ICP-MS   | GK 2016-03-16 |
| Antimony   | N/A           | 0,03 ppm           | ICP-MS   | GK 2016-03-16 |

##### 4.2.1 Analysis Conditions

|                          |  |
|--------------------------|--|
| MS 5970 Column           | HP-5MS 5% Phenyl Methyl Silox : 30 m x 250 µm x 0.25 µm                        |
| Oven Program             | 50 °C for 4 min => 3 °C/min to 230 °C for 4min => 10 °C/min to 280 °C for 7min |
| Carrier gas              | He : 12.348 psi / MS   |
| Sample injection / split | 1 µl of 5% solution in solvent   |
| Mass range               | 35 to 450  |

##### 4.2.2 Mass spectra / Spectre de Masse



© UNION NATURE AROMA-PHYTO INC. Celery Essential Oil / Huile essentielle de céleri  
Lot MP-07-0057

UNION NATURE Aroma-Phyto inc.  
C.P. / P.O. BOX 444, Succ. Mt-Royal Station, Mt-Royal (QC) Canada H3P 3C6  
Tel: (514) 344-7777 - Fax: (514) 344-8111

info@union-nature.com - [www.union-nature.com](http://www.union-nature.com)

#### 4.3. Chromatographic analysis (GC/FID) / Analyse chromatographique (CG/FID)

| RT             | Constituents / Constituants        | %              |
|----------------|------------------------------------|----------------|
| 3.3453         | Benzene <ethyl->                   | 0.0167         |
| 4.4098         | Pinene <alpha->                    | 0.1534         |
| <b>5.8622</b>  | <b>Pinene &lt;beta-&gt;</b>        | <b>1.2618</b>  |
| <b>6.6606</b>  | <b>Myrcene</b>                     | <b>1.2506</b>  |
| 7.1016         | Menthatriene <1,3,8-para->         | 0.0154         |
| <b>8.7745</b>  | <b>Limonene</b>                    | <b>57.9200</b> |
| 9.0216         | Pinene <alpha->                    | 0.0224         |
| 11.7514        | Mentha-3,8-diene <p->              | 0.0146         |
| 12.1735        | Linalool                           | 0.1076         |
| 13.0745        | Mentha-2,8-dien-1-ol <trans-, p->  | 0.2213         |
| 13.6942        | Limonene oxide <cis->              | 0.1096         |
| 13.9718        | Mentha-2,8-dien-1-ol <cis-, para-> | 0.2764         |
| <b>15.2340</b> | <b>Pentyl cyclohexa-1,3-diene</b>  | <b>3.1170</b>  |
| 16.3670        | Farnesal <(E,E)->                  | 0.0528         |
| 17.1160        | Isocarveol <trans->                | 0.0216         |
| 17.5038        | Carvone <(Z)-, dihydro->           | 0.1910         |
| 17.7966        | Hasmigone isomer II                | 0.0724         |
| 19.1045        | Carveol <trans->                   | 0.1591         |
| 19.6595        | Mentha-2,8-dien-1-ol <trans-, p->  | 0.0124         |
| 19.8154        | Carveol <cis->                     | 0.0750         |
| 20.3781        | Carvone                            | 0.1977         |
| 21.6176        | Linalyl isovalerate                | 0.0249         |
| 22.1270        | Perillaldehyde                     | 0.0322         |
| 23.5490        | Limonen-10-ol                      | 0.0140         |
| 23.9481        | Myrtenyl acetate                   | 0.1731         |
| 26.5487        | Carvyl acetate <trans->            | 0.0430         |
| 26.7616        | Linalool <(Z)-8-hydroxy->          | 0.1121         |
| 27.1038        | Dihydrochavicol                    | 0.0189         |
| 27.4118        | Valerophenone                      | 0.8736         |
| 28.5409        | Daucene                            | 0.0204         |
| 29.0086        | Grandlure I                        | 0.0320         |
| 29.4116        | Elemene <beta->                    | 0.0878         |
| 30.1035        | Cedrene <alpha->                   | 0.0185         |
| 30.4533        | Phellandral                        | 0.0144         |
| <b>30.6853</b> | <b>Caryophyllene &lt;(Z)-&gt;</b>  | <b>1.0030</b>  |
| 32.4380        | Terpin-1-en-4-yl acetate           | 0.0100         |
| 32.6813        | Humulene <alpha->                  | 0.1088         |
| 33.7192        | Aristolochene <4,5-di-epi->        | 0.0547         |
| <b>35.0233</b> | <b>Selinene &lt;beta-&gt;</b>      | <b>13.4679</b> |
| <b>35.3921</b> | <b>Selinene &lt;alpha-&gt;</b>     | <b>2.2022</b>  |

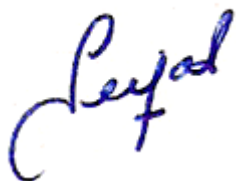
© UNION NATURE AROMA-PHYTO INC. Celery Essential Oil / Huile essentielle de céleri  
Lot MP-07-0057

UNION NATURE Aroma-Phyto inc.  
C.P. / P.O. BOX 444, Succ. Mt-Royal Station, Mt-Royal (QC) Canada H3P 3C6  
Tel: (514) 344-7777 - Fax: (514) 344-8111  
info@union-nature.com - [www.union-nature.com](http://www.union-nature.com)

|                |   |                |
|----------------|---|----------------|
| 36.4262        | Selinene <7-epi-alpha->                         | 0.0148         |
| 36.7646        | Furan <2-acetyl->                               | 0.0131         |
| 36.9205        | Furoate <alpha-pentyl->                         | 0.0307         |
| 37.4528        | Sibirene  | 0.0345         |
| 37.7949        | Selina-3,7(11)-diene                            | 0.0385         |
| 38.6504        | Hasmigone isomer II                             | 0.1074         |
| 39.1713        | Hedycaryol                                      | 0.1178         |
| 40.0267        | Caryophyllene oxide                             | 0.6041         |
| 40.3879        | Borneol   | 0.0123         |
| 40.8593        | Carotol   | 0.0793         |
| 41.4943        | Humulene epoxide II                             | 0.0753         |
| 42.7185        | Vetiselinol                                     | 0.0102         |
| 43.5169        | Asarone <(E)->                                  | 0.1124         |
| 43.8439        | Eudesmol <beta->                                | 0.4704         |
| <b>44.5282</b> | <b>Benzaldehyde &lt;2,4-dimethyl-&gt;</b>       | <b>5.6979</b>  |
| 45.2544        | Butylidene phthalide <(3Z)->                    | 0.0396         |
| 45.5206        | Cresol acetate <o->                             | 0.1938         |
| 46.1251        | Anisole <para-methyl->                          | 0.1372         |
| 46.6003        | Asarone <(E)->                                  | 0.0350         |
| <b>48.3074</b> | <b>Phenol &lt;2-propyl-&gt;</b>                 | <b>7.8243</b>  |
| 48.5811        | Ligustilide <(Z)->                              | 0.0213         |
| 54.4552        | Phytol acetate <(E)->                           | 0.0331         |
| 54.7479        | Phytone   | 0.0214         |
| 55.3981        | Furan <3-acetyl-, 2,5-dimethyl->                | 0.1903         |
| 55.9874        | Toluene, 3,5-dimethoxy-                         | 0.0676         |
| 56.6983        | Diisobutenyl ketone                             | 0.0498         |
| 59.3787        | Pyran-4-one <4H-, 2-methyl-, 3-(1-oxopropoxy)-> | 0.0594         |
| 59.9794        | Pyrazine <2-methylmercapto->                    | 0.0352         |
| 60.4015        | Ferula lactone I                                | 0.0215         |
| 81.5518        | Isomyristicin                                   | 0.2679         |
|                | <b>Total</b>                                    | <b>99.9964</b> |

Note: The allergens are identified in bold / *Les allergènes sont identifiés en caractères gras.*

**Analysis Date / Date de l'analyse:** 2016-12



**Tomas Seijas, Chemist/Chimiste, OCQ #2003-041**

© UNION NATURE AROMA-PHYTO INC. Celery Essential Oil / Huile essentielle de céleri  
Lot MP-07-0057

UNION NATURE Arom-Phyto inc.  
C.P. / P.O. BOX 444, Succ. Mt-Royal Station, Mt-Royal (QC) Canada H3P 3C6  
Tel: (514) 344-7777 - Fax: (514) 344-8111  
info@union-nature.com - [www.union-nature.com](http://www.union-nature.com)