



Because you need Quality

Biosolve ULC/MS Products  
raise the quality standards  
for your valid high resolution  
gradient elution UHPLC-MS  
& UHPLC-UV applications

Water ULC/MS grade purified under 11 monitored steps.  
 High UV & Fluorescence transmittance  
 Low level of ionic background  
 TOC < 10 ppb  
 Resistivity > 18.2 MΩ\*cm

| Water                             | 232141          |
|-----------------------------------|-----------------|
| Test Description                  | Specifications  |
| Clear colorless liquid            | Complying       |
| Color (APHA Pt-Co)                | max. 5          |
| Resistivity (at manuf.)           | min. 18.2mho/cm |
| Residue after evaporation         | max. 0.0001%w/w |
| Acidity (as Acetic acid)          | max. 0.0002%    |
| Alkalinity (as Ammonia)           | max. 0.00005%   |
| TOC                               | max. 10ppb      |
| UHPLC/MS ESI/APCI+ (as Reserpine) | max. 5ppb       |
| UHPLC/MS ESI/APCI- (as Reserpine) | max. 20ppb      |
| UV Abs. 200 (Vs. air)             | max. 0.001AU    |
| UV Abs. 210 (Vs. air)             | max. 0.001AU    |
| UV Abs. 230 (Vs. air)             | max. 0.0005AU   |
| H.Peak by PDAD 210-400nm          | max. 0.001AU    |
| Grad. elution H.Peak at 210nm     | max. 0.001AU    |
| Grad. elution drift at 210nm      | max. 0.008AU    |
| Grad. elution H.Peak at 254nm     | max. 0.0005AU   |
| Grad. elution drift at 254nm      | max. 0.005AU    |
| Fluorescence 254nm (as Quinine)   | max. 0.3ppb     |
| Fluorescence 365nm (as Quinine)   | max. 0.3ppb     |
| Filter test                       | Complying       |
| Silver (Ag)                       | max. 50ppb      |
| Aluminum (Al)                     | max. 20ppb      |
| Barium (Ba)                       | max. 20ppb      |
| Bismuth (Bi)                      | max. 20ppb      |
| Calcium (Ca)                      | max. 50ppb      |
| Cadmium (Cd)                      | max. 30ppb      |
| Cobalt (Co)                       | max. 20ppb      |
| Chromium (Cr)                     | max. 20ppb      |
| Iron (Fe)                         | max. 30ppb      |
| Potassium (K)                     | max. 50ppb      |
| Lithium (Li)                      | max. 30ppb      |
| Magnesium (Mg)                    | max. 20ppb      |
| Manganese (Mn)                    | max. 20ppb      |
| Molybdenum (Mo)                   | max. 50ppb      |
| Sodium (Na)                       | max. 50ppb      |
| Nickel (Ni)                       | max. 20ppb      |
| Lead (Pb)                         | max. 20ppb      |
| Tin (Sn)                          | max. 50ppb      |
| Strontium (Sr)                    | max. 30ppb      |
| Zinc (Zn)                         | max. 50ppb      |
| Nitrate (NO3)                     | max. 0.1ppm     |
| Subs. reducing KMnO4              | Complying       |

| Methanol                          | 136841          |
|-----------------------------------|-----------------|
| Test Description                  | Specifications  |
| Clear colorless liquid            | Complying       |
| Color (APHA Pt-Co)                | max. 5          |
| Assay (GC on anhydrous basis)     | min. 99.98%     |
| Residue after evaporation         | max. 0.0001%w/w |
| Water (KF)                        | max. 0.03%w/w   |
| Acidity (as Acetic acid)          | max. 0.002%     |
| Alkalinity (as Ammonia)           | max. 0.0001%    |
| UHPLC/MS ESI/APCI+ (as Reserpine) | max. 6ppb       |
| UHPLC/MS ESI/APCI- (as Reserpine) | max. 20ppb      |
| H.Peak by PDAD 220-400nm          | max. 0.004AU    |
| Grad. elution H.Peak at 220nm     | max. 0.004AU    |
| Grad. elution drift at 220nm      | max. 0.05AU     |
| Grad. elution H.Peak at 235nm     | max. 0.002AU    |
| Grad. elution drift at 235nm      | max. 0.015AU    |
| Fluorescence 254nm (as Quinine)   | max. 0.5ppb     |
| Fluorescence 365nm (as Quinine)   | max. 0.3ppb     |
| UV Trans. 210nm                   | min. 40%        |
| UV Trans. 220nm                   | min. 65%        |
| UV Trans. 230nm                   | min. 80%        |
| UV Trans. 260nm                   | min. 98%        |
| Silver (Ag)                       | max. 50ppb      |
| Aluminum (Al)                     | max. 20ppb      |
| Barium (Ba)                       | max. 50ppb      |
| Bismuth (Bi)                      | max. 50ppb      |
| Calcium (Ca)                      | max. 50ppb      |
| Cadmium (Cd)                      | max. 50ppb      |
| Cobalt (Co)                       | max. 20ppb      |
| Chromium (Cr)                     | max. 20ppb      |
| Copper (Cu)                       | max. 20ppb      |
| Iron (Fe)                         | max. 20ppb      |
| Potassium (K)                     | max. 50ppb      |
| Lithium (Li)                      | max. 50ppb      |
| Magnesium (Mg)                    | max. 20ppb      |
| Manganese (Mn)                    | max. 20ppb      |
| Molybdenum (Mo)                   | max. 50ppb      |
| Sodium (Na)                       | max. 50ppb      |
| Nickel (Ni)                       | max. 20ppb      |
| Lead (Pb)                         | max. 20ppb      |
| Tin (Sn)                          | max. 50ppb      |
| Strontium (Sr)                    | max. 50ppb      |
| Zinc (Zn)                         | max. 50ppb      |

Our bottles are selected and treated to minimize ion release from the internal glass surface.

## NEW

| Ethanol absolute                  | 052541          |
|-----------------------------------|-----------------|
| Test Description                  | Specifications  |
| Clear colorless liquid            | Complying       |
| Color (APHA Pt-Co)                | max. 10         |
| Assay (GC on anhydrous basis)     | min. 99.95%     |
| Residue after evaporation         | max. 0.0001%w/w |
| Acidity (as Acetic acid)          | max. 0.002%     |
| Alkalinity (as Ammonia)           | max. 0.0005%    |
| UHPLC/MS ESI/APCI+ (as Reserpine) | max. 10ppb      |
| UHPLC/MS ESI/APCI- (as Reserpine) | max. 20ppb      |
| H.Peak by PDAD 235-400nm          | max. 0.002AU    |
| Grad. elution H.Peak at 235nm     | max. 0.002AU    |
| Grad. elution drift at 235nm      | max. 0.010AU    |
| Grad. elution H.Peak at 254nm     | max. 0.001AU    |
| Grad. elution drift at 254nm      | max. 0.005AU    |
| Fluorescence 254nm (as Quinine)   | max. 1ppb       |
| Fluorescence 365nm (as Quinine)   | max. 1ppb       |
| UV Trans. 210nm                   | min. 40%        |
| UV Trans. 225nm                   | min. 60%        |
| UV Trans. 240nm                   | min. 85%        |
| UV Trans. 260nm                   | min. 98%        |
| Water (KF)                        | max. 0.1%w/w    |
| Silver (Ag)                       | max. 50ppb      |
| Aluminum (Al)                     | max. 20ppb      |
| Barium (Ba)                       | max. 50ppb      |
| Bismuth (Bi)                      | max. 50ppb      |
| Calcium (Ca)                      | max. 50ppb      |
| Cadmium (Cd)                      | max. 50ppb      |
| Cobalt (Co)                       | max. 20ppb      |
| Chromium (Cr)                     | max. 20ppb      |
| Iron (Fe)                         | max. 20ppb      |
| Potassium (K)                     | max. 50ppb      |
| Lithium (Li)                      | max. 50ppb      |
| Magnesium (Mg)                    | max. 20ppb      |
| Manganese (Mn)                    | max. 20ppb      |
| Molybdenum (Mo)                   | max. 50ppb      |
| Sodium (Na)                       | max. 50ppb      |
| Nickel (Ni)                       | max. 20ppb      |
| Lead (Pb)                         | max. 20ppb      |
| Tin (Sn)                          | max. 50ppb      |
| Strontium (Sr)                    | max. 50ppb      |
| Zinc (Zn)                         | max. 50ppb      |

| 2-Propanol                        | 162641          |
|-----------------------------------|-----------------|
| Test Description                  | Specifications  |
| Clear colorless liquid            | Complying       |
| Color (APHA Pt-Co)                | max. 5          |
| Assay (GC on anhydrous basis)     | min. 99.95%     |
| Residue after evaporation         | max. 0.0001%w/w |
| Water (KF)                        | max. 0.05%w/w   |
| Acidity (as Acetic acid)          | max. 0.001%     |
| Alkalinity (as Ammonia)           | max. 0.0001%    |
| UHPLC/MS ESI/APCI+ (as Reserpine) | max. 10ppb      |
| UHPLC/MS ESI/APCI- (as Reserpine) | max. 20ppb      |
| H.Peak by PDAD 235-400nm          | max. 0.002AU    |
| Grad. elution H.Peak at 235nm     | max. 0.001AU    |
| Grad. elution drift at 235nm      | max. 0.010AU    |
| Grad. elution H.Peak at 254nm     | max. 0.001AU    |
| Grad. elution drift at 254nm      | max. 0.005AU    |
| Fluorescence 254nm (as Quinine)   | max. 0.5ppb     |
| Fluorescence 365nm (as Quinine)   | max. 0.5ppb     |
| UV Trans. 220nm                   | min. 80%        |
| UV Trans. 230nm                   | min. 90%        |
| UV Trans. 250nm                   | min. 99%        |
| Silver (Ag)                       | max. 50ppb      |
| Aluminum (Al)                     | max. 20ppb      |
| Barium (Ba)                       | max. 50ppb      |
| Bismuth (Bi)                      | max. 50ppb      |
| Calcium (Ca)                      | max. 50ppb      |
| Cadmium (Cd)                      | max. 50ppb      |
| Cobalt (Co)                       | max. 20ppb      |
| Chromium (Cr)                     | max. 20ppb      |
| Iron (Fe)                         | max. 20ppb      |
| Potassium (K)                     | max. 50ppb      |
| Lithium (Li)                      | max. 50ppb      |
| Magnesium (Mg)                    | max. 20ppb      |
| Manganese (Mn)                    | max. 20ppb      |
| Molybdenum (Mo)                   | max. 50ppb      |
| Sodium (Na)                       | max. 50ppb      |
| Nickel (Ni)                       | max. 20ppb      |
| Lead (Pb)                         | max. 20ppb      |
| Tin (Sn)                          | max. 50ppb      |
| Strontium (Sr)                    | max. 50ppb      |
| Zinc (Zn)                         | max. 50ppb      |

| Ethyl acetate                     | 054041          |
|-----------------------------------|-----------------|
| Test Description                  | Specifications  |
| Clear colorless liquid            | Complying       |
| Acidity (as Acetic acid)          | max. 0.002%     |
| Alkalinity (as Ammonia)           | max. 0.0005%    |
| Color (APHA Pt-Co)                | max. 10         |
| Assay (GC on anhydrous basis)     | min. 99.9%      |
| Residue after evaporation         | max. 0.0003%w/w |
| Water (KF)                        | max. 0.02%w/w   |
| Fluorescence 254nm (as Quinine)   | max. 2.0ppb     |
| Fluorescence 365nm (as Quinine)   | max. 1.0ppb     |
| UHPLC/MS ESI/APCI+ (as Reserpine) | max. 10ppb      |
| UHPLC/MS ESI/APCI- (as Reserpine) | max. 20ppb      |
| UV Trans. 255nm                   | min. 25%        |
| UV Trans. 260nm                   | min. 80%        |
| UV Trans. >275nm                  | min. 98%        |
| UV Abs. 255nm                     | max. 0.60AU     |
| UV Abs. 260nm                     | max. 0.10AU     |
| UV Abs. 275nm                     | max. 0.01AU     |
| Silver (Ag)                       | max. 50ppb      |
| Aluminum (Al)                     | max. 20ppb      |
| Barium (Ba)                       | max. 50ppb      |
| Bismuth (Bi)                      | max. 50ppb      |
| Calcium (Ca)                      | max. 50ppb      |
| Cadmium (Cd)                      | max. 50ppb      |
| Cobalt (Co)                       | max. 20ppb      |
| Chromium (Cr)                     | max. 20ppb      |
| Iron (Fe)                         | max. 20ppb      |
| Potassium (K)                     | max. 50ppb      |
| Lithium (Li)                      | max. 50ppb      |
| Magnesium (Mg)                    | max. 20ppb      |
| Manganese (Mn)                    | max. 20ppb      |
| Molybdenum (Mo)                   | max. 50ppb      |
| Sodium (Na)                       | max. 50ppb      |
| Nickel (Ni)                       | max. 20ppb      |
| Lead (Pb)                         | max. 20ppb      |
| Tin (Sn)                          | max. 50ppb      |
| Strontium (Sr)                    | max. 50ppb      |
| Zinc (Zn)                         | max. 50ppb      |

## Triethylamine 204141

| Test Description                  | Specifications |
|-----------------------------------|----------------|
| Clear colorless liquid            | Complying      |
| Assay (GC on anhydrous basis)     | min. 99.8%     |
| UV Trans. 250nm (0.1M)            | min. 40%       |
| UV Trans. 260nm (0.1M)            | min. 87%       |
| UV Trans. 270nm (0.1M)            | min. 96%       |
| UV Trans. 280nm (0.1M)            | min. 98%       |
| Grad. elution H.Peak at 254nm     | max. 0.005AU   |
| Water (KF)                        | max. 0.05%w/w  |
| UHPLC/MS ESI/APCI+ (as Reserpine) | max. 20ppb     |
| UHPLC/MS ESI/APCI- (as Reserpine) | max. 50ppb     |
| Aluminum (Al)                     | max. 0.2ppm    |
| Calcium (Ca)                      | max. 0.5ppm    |
| Iron (Fe)                         | max. 0.1ppm    |
| Potassium (K)                     | max. 0.5ppm    |
| Magnesium (Mg)                    | max. 0.1ppm    |
| Sodium (Na)                       | max. 0.5ppm    |
| Residue after evaporation         | max. 0.005%w/w |

## Tetrahydrofuran 202241 (unstabilized)

| Test Description                  | Specifications  |
|-----------------------------------|-----------------|
| Clear colorless liquid            | Complying       |
| Color (APHA Pt-Co)                | max. 10         |
| Assay (GC on anhydrous basis)     | min. 99.9%      |
| Acidity (as Acetic acid)          | max. 0.0020%    |
| Alkalinity (as Ammonia)           | max. 0.0005%    |
| Peroxides (as H2O2)               | max. 0.01%      |
| UHPLC/MS ESI/APCI+ (as Reserpine) | max. 20ppb      |
| UHPLC/MS ESI/APCI- (as Reserpine) | max. 50ppb      |
| Water (KF)                        | max. 0.02%w/w   |
| Fluorescence 254nm (as Quinine)   | max. 1ppb       |
| Fluorescence 365nm (as Quinine)   | max. 1ppb       |
| Grad. elution H.Peak at 254nm     | max. 0.01AU     |
| Grad. elution H.Peak at 280nm     | max. 0.003AU    |
| UV Trans. 215nm                   | min. 30%        |
| UV Trans. 235nm                   | min. 40%        |
| UV Trans. 245nm                   | min. 55%        |
| UV Trans. 250nm                   | min. 65%        |
| UV Trans. 265nm                   | min. 80%        |
| UV Trans. 275nm                   | min. 90%        |
| UV Trans. 280nm                   | min. 95%        |
| UV Trans. 310nm                   | min. 99%        |
| Residue after evaporation         | max. 0.0001%w/w |
| Silver (Ag)                       | max. 50ppb      |
| Aluminum (Al)                     | max. 20ppb      |
| Barium (Ba)                       | max. 50ppb      |
| Bismuth (Bi)                      | max. 50ppb      |
| Calcium (Ca)                      | max. 50ppb      |
| Cadmium (Cd)                      | max. 50ppb      |
| Cobalt (Co)                       | max. 20ppb      |
| Chromium (Cr)                     | max. 20ppb      |
| Iron (Fe)                         | max. 20ppb      |
| Potassium (K)                     | max. 50ppb      |
| Lithium (Li)                      | max. 50ppb      |
| Magnesium (Mg)                    | max. 20ppb      |
| Manganese (Mn)                    | max. 20ppb      |
| Molybdenum (Mo)                   | max. 50ppb      |
| Sodium (Na)                       | max. 50ppb      |
| Nickel (Ni)                       | max. 20ppb      |
| Lead (Pb)                         | max. 20ppb      |
| Tin (Sn)                          | max. 50ppb      |
| Strontium (Sr)                    | max. 50ppb      |
| Zinc (Zn)                         | max. 50ppb      |

# Formulations in Acetonitrile ULC/MS

| Product                           | Acetic acid<br>0.1% in Acetonitrile | Formic acid<br>0.1% in Acetonitrile | Trifluoroacetic acid<br>0.1% in Acetonitrile |
|-----------------------------------|-------------------------------------|-------------------------------------|----------------------------------------------|
| Cat. Number                       | 019141                              | 019341                              | 019541                                       |
| Test Description                  | Specifications                      | Specifications                      | Specifications                               |
| Assay (T)                         | 0.095-0.105%v/v                     | 0.095-0.105%v/v                     | 0.095-0.105%v/v                              |
| Water (KF)                        | max. 0.02%w/w                       | max. 0.02%w/w                       | max. 0.02%w/w                                |
| Residue after evaporation         | max. 0.0001%w/w                     | max. 0.0001%w/w                     | max. 0.0001%w/w                              |
| UHPLC/MS/ESI/APCI+ (as Reserpine) | max. 10ppb                          | max. 10ppb                          | max. 20ppb                                   |
| Grad. elution H.P.peak at 254nm   | max. 0.002AU                        | max. 0.002AU                        | max. 0.002AU                                 |
| Grad. elution drift at 254nm      | max. 0.010AU                        | max. 0.030AU                        | max. 0.030AU                                 |
| Fluorescence 254nm (as Quinine)   | max. 0.5ppb                         | max. 0.5ppb                         | max. 0.5ppb                                  |
| Fluorescence 365nm (as Quinine)   | max. 0.5ppb                         | max. 0.5ppb                         | max. 0.5ppb                                  |
| UV Trans. 210nm                   | min. 20%                            | min. 5%                             |                                              |
| UV Trans. 230nm                   | min. 50%                            | min. 15%                            | min. 50%                                     |
| UV Trans. 254nm                   | min. 98%                            | min. 90%                            | min. 90%                                     |
| Aluminum (Al)                     | max. 30ppb                          | max. 30ppb                          | max. 30ppb                                   |
| Calcium (Ca)                      | max. 100ppb                         | max. 100ppb                         | max. 100ppb                                  |
| Iron (Fe)                         | max. 50ppb                          | max. 50ppb                          | max. 50ppb                                   |
| Potassium (K)                     | max. 100ppb                         | max. 100ppb                         | max. 100ppb                                  |
| Magnesium (Mg)                    | max. 30ppb                          | max. 30ppb                          | max. 30ppb                                   |
| Sodium (Na)                       | max. 100ppb                         | max. 100ppb                         | max. 100ppb                                  |



| Ethyl acetate                     | 054041          |
|-----------------------------------|-----------------|
| Test Description                  | Specifications  |
| Clear colorless liquid            | Complying       |
| Acidity (as Acetic acid)          | max. 0.002%     |
| Alkalinity (as Ammonia)           | max. 0.0005%    |
| Color (APHA Pt-Co)                | max. 10         |
| Assay (GC on anhydrous basis)     | min. 99.9%      |
| Residue after evaporation         | max. 0.0003%w/w |
| Water (KF)                        | max. 0.02%w/w   |
| Fluorescence 254nm (as Quinine)   | max. 2.0ppb     |
| Fluorescence 365nm (as Quinine)   | max. 1.0ppb     |
| UHPLC/MS ESI/APCI+ (as Reserpine) | max. 10ppb      |
| UHPLC/MS ESI/APCI- (as Reserpine) | max. 20ppb      |
| UV Trans. 255nm                   | min. 25%        |
| UV Trans. 260nm                   | min. 80%        |
| UV Trans. >275nm                  | min. 98%        |
| UV Abs. 255nm                     | max. 0.60AU     |
| UV Abs. 260nm                     | max. 0.10AU     |
| UV Abs. 275nm                     | max. 0.01AU     |
| Silver (Ag)                       | max. 50ppb      |
| Aluminum (Al)                     | max. 20ppb      |
| Barium (Ba)                       | max. 50ppb      |
| Bismuth (Bi)                      | max. 50ppb      |
| Calcium (Ca)                      | max. 50ppb      |
| Cadmium (Cd)                      | max. 50ppb      |
| Cobalt (Co)                       | max. 20ppb      |
| Chromium (Cr)                     | max. 20ppb      |
| Iron (Fe)                         | max. 20ppb      |
| Potassium (K)                     | max. 50ppb      |
| Lithium (Li)                      | max. 50ppb      |
| Magnesium (Mg)                    | max. 20ppb      |
| Manganese (Mn)                    | max. 20ppb      |
| Molybdenum (Mo)                   | max. 50ppb      |
| Sodium (Na)                       | max. 50ppb      |
| Nickel (Ni)                       | max. 20ppb      |
| Lead (Pb)                         | max. 20ppb      |
| Tin (Sn)                          | max. 50ppb      |
| Strontium (Sr)                    | max. 50ppb      |
| Zinc (Zn)                         | max. 50ppb      |

| Triethylamine                     | 204141         |
|-----------------------------------|----------------|
| Test Description                  | Specifications |
| Clear colorless liquid            | Complying      |
| Assay (GC on anhydrous basis)     | min. 99.8%     |
| UV Trans. 250nm (0.1M)            | min. 40%       |
| UV Trans. 260nm (0.1M)            | min. 87%       |
| UV Trans. 270nm (0.1M)            | min. 96%       |
| UV Trans. 280nm (0.1M)            | min. 98%       |
| Grad. elution H.P. Peak at 254nm  | max. 0.005AU   |
| Water (KF)                        | max. 0.05%w/w  |
| UHPLC/MS ESI/APCI+ (as Reserpine) | max. 20ppb     |
| UHPLC/MS ESI/APCI- (as Reserpine) | max. 50ppb     |
| Aluminum (Al)                     | max. 0.2ppm    |
| Calcium (Ca)                      | max. 0.5ppm    |
| Iron (Fe)                         | max. 0.1ppm    |
| Potassium (K)                     | max. 0.5ppm    |
| Magnesium (Mg)                    | max. 0.1ppm    |
| Sodium (Na)                       | max. 0.5ppm    |
| Residue after evaporation         | max. 0.005%w/w |

| Tetrahydrofuran (unstabilized)    | 202241          |
|-----------------------------------|-----------------|
| Test Description                  | Specifications  |
| Clear colorless liquid            | Complying       |
| Color (APHA Pt-Co)                | max. 10         |
| Assay (GC on anhydrous basis)     | min. 99.9%      |
| Acidity (as Acetic acid)          | max. 0.0020%    |
| Alkalinity (as Ammonia)           | max. 0.0005%    |
| Peroxides (as H2O2)               | max. 0.01%      |
| UHPLC/MS ESI/APCI+ (as Reserpine) | max. 20ppb      |
| UHPLC/MS ESI/APCI- (as Reserpine) | max. 50ppb      |
| Water (KF)                        | max. 0.02%w/w   |
| Fluorescence 254nm (as Quinine)   | max. 1ppb       |
| Fluorescence 365nm (as Quinine)   | max. 1ppb       |
| Grad. elution H.P. Peak at 254nm  | max. 0.01AU     |
| Grad. elution H.P. Peak at 280nm  | max. 0.003AU    |
| UV Trans. 215nm                   | min. 30%        |
| UV Trans. 235nm                   | min. 40%        |
| UV Trans. 245nm                   | min. 55%        |
| UV Trans. 250nm                   | min. 65%        |
| UV Trans. 265nm                   | min. 80%        |
| UV Trans. 275nm                   | min. 90%        |
| UV Trans. 280nm                   | min. 95%        |
| UV Trans. 310nm                   | min. 99%        |
| Residue after evaporation         | max. 0.0001%w/w |
| Silver (Ag)                       | max. 50ppb      |
| Aluminum (Al)                     | max. 20ppb      |
| Barium (Ba)                       | max. 50ppb      |
| Bismuth (Bi)                      | max. 50ppb      |
| Calcium (Ca)                      | max. 50ppb      |
| Cadmium (Cd)                      | max. 50ppb      |
| Cobalt (Co)                       | max. 20ppb      |
| Chromium (Cr)                     | max. 20ppb      |
| Iron (Fe)                         | max. 20ppb      |
| Potassium (K)                     | max. 50ppb      |
| Lithium (Li)                      | max. 50ppb      |
| Magnesium (Mg)                    | max. 20ppb      |
| Manganese (Mn)                    | max. 20ppb      |
| Molybdenum (Mo)                   | max. 50ppb      |
| Sodium (Na)                       | max. 50ppb      |
| Nickel (Ni)                       | max. 20ppb      |
| Lead (Pb)                         | max. 20ppb      |
| Tin (Sn)                          | max. 50ppb      |
| Strontium (Sr)                    | max. 50ppb      |
| Zinc (Zn)                         | max. 50ppb      |

# Formulations in Acetonitrile ULC/MS

| Product                           | Acetic acid<br>0.1% in Acetonitrile | Formic acid<br>0.1% in Acetonitrile | Trifluoroacetic acid<br>0.1% in Acetonitrile |
|-----------------------------------|-------------------------------------|-------------------------------------|----------------------------------------------|
| Cat. Number                       | 019141                              | 019341                              | 019541                                       |
| Test Description                  | Specifications                      | Specifications                      | Specifications                               |
| Assay (T)                         | 0.095-0.105%v/v                     | 0.095-0.105%v/v                     | 0.095-0.105%v/v                              |
| Water (KF)                        | max. 0.02%w/w                       | max. 0.02%w/w                       | max. 0.02%w/w                                |
| Residue after evaporation         | max. 0.0001%w/w                     | max. 0.0001%w/w                     | max. 0.0001%w/w                              |
| UHPLC/MS/ESI/APCI+ (as Reserpine) | max. 10ppb                          | max. 10ppb                          | max. 20ppb                                   |
| Grad. elution H.Peak at 254nm     | max. 0.002AU                        | max. 0.002AU                        | max. 0.002AU                                 |
| Grad. elution drift at 254nm      | max. 0.010AU                        | max. 0.030AU                        | max. 0.030AU                                 |
| Fluorescence 254nm (as Quinine)   | max. 0.5ppb                         | max. 0.5ppb                         | max. 0.5ppb                                  |
| Fluorescence 365nm (as Quinine)   | max. 0.5ppb                         | max. 0.5ppb                         | max. 0.5ppb                                  |
| UV Trans. 210nm                   | min. 20%                            | min. 5%                             |                                              |
| UV Trans. 230nm                   | min. 50%                            | min. 15%                            | min. 50%                                     |
| UV Trans. 254nm                   | min. 98%                            | min. 90%                            | min. 90%                                     |
| Aluminum (Al)                     | max. 30ppb                          | max. 30ppb                          | max. 30ppb                                   |
| Calcium (Ca)                      | max. 100ppb                         | max. 100ppb                         | max. 100ppb                                  |
| Iron (Fe)                         | max. 50ppb                          | max. 50ppb                          | max. 50ppb                                   |
| Potassium (K)                     | max. 100ppb                         | max. 100ppb                         | max. 100ppb                                  |
| Magnesium (Mg)                    | max. 30ppb                          | max. 30ppb                          | max. 30ppb                                   |
| Sodium (Na)                       | max. 100ppb                         | max. 100ppb                         | max. 100ppb                                  |



## • Formulations in Water ULC/MS

| Product                           | Acetic Acid<br>0.1% in Water | Formic acid<br>0.1% in Water | Trifluoroacetic acid<br>0.1% in Water |
|-----------------------------------|------------------------------|------------------------------|---------------------------------------|
| Cat. Number                       | 232341                       | 232441                       | 232741                                |
| Test Description                  | Specifications               | Specifications               | Specifications                        |
| Assay (T)                         | 0.095-0.105%v/v              | 0.095-0.105%v/v              | 0.095-0.105%v/v                       |
| Residue after evaporation         | max. 0.0001%w/w              | max. 0.0001%w/w              | max. 0.0001%w/w                       |
| UHPLC/MS ESI/APCI+ (as Reserpine) | max. 10ppb                   | max. 10ppb                   | max. 20ppb                            |
| Grad. elution H.Peak at 254nm     | max. 0.002AU                 | max. 0.002AU                 | max. 0.002AU                          |
| Grad. elution drift at 254nm      | max. 0.010AU                 | max. 0.010AU                 | max. 0.010AU                          |
| Fluorescence 254nm (as Quinine)   | max. 0.5ppb                  | max. 0.5ppb                  | max. 0.5ppb                           |
| Fluorescence 365nm (as Quinine)   | max. 0.5ppb                  | max. 0.5ppb                  | max. 0.5ppb                           |
| UV Trans. 210nm                   | min. 20%                     | min. 5%                      | min. 25%                              |
| UV Trans. 230nm                   | min. 75%                     | min. 45%                     | min. 85%                              |
| UV Trans. 254nm                   | min. 99%                     | min. 99%                     | min. 99%                              |
| Aluminum (Al)                     | max. 30ppb                   | max. 30ppb                   | max. 30ppb                            |
| Calcium (Ca)                      | max. 100ppb                  | max. 100ppb                  | max. 100ppb                           |
| Iron (Fe)                         | max. 50ppb                   | max. 50ppb                   | max. 50ppb                            |
| Potassium (K)                     | max. 100ppb                  | max. 100ppb                  | max. 100ppb                           |
| Magnesium (Mg)                    | max. 30ppb                   | max. 30ppb                   | max. 30ppb                            |
| Sodium (Na)                       | max. 100ppb                  | max. 100ppb                  | max. 100ppb                           |

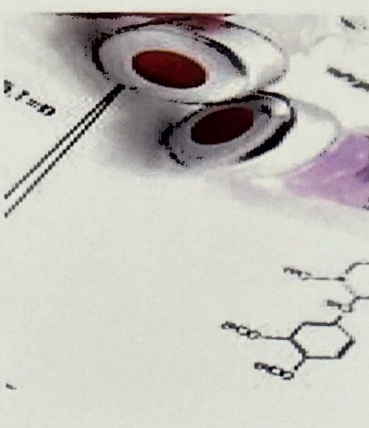


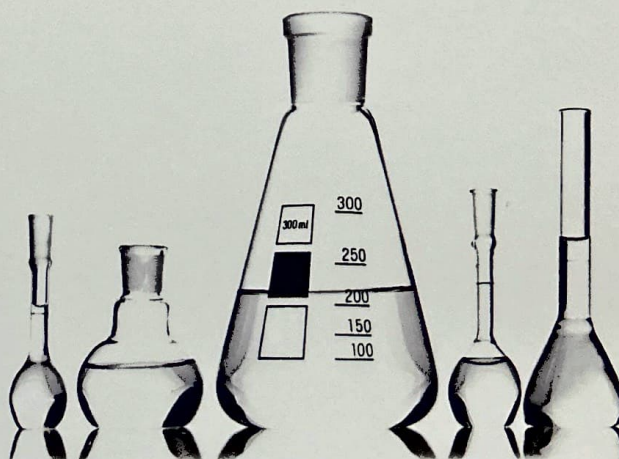
## Acids for ULC/MS

| Product                                | Acetic Acid     | Formic acid    | Trifluoroacetic acid |
|----------------------------------------|-----------------|----------------|----------------------|
| Cat. Number                            | 010741          | 069141         | 202341               |
| Test Description                       | Specifications  | Specifications | Specifications       |
| Assay                                  | min. 99.95%     | min. 99.0%     | min. 99.95%          |
| Residue after evaporation              | max. 0.0005%w/w | max. 0.001%w/w | max. 0.001%w/w       |
| Water (KF)                             | max. 0.05%w/w   | max. 1%w/w     | max. 0.02%w/w        |
| UV Trans. 254nm                        | min. 30%        |                |                      |
| UV Trans. 260nm                        | min. 80%        | min. 15%       | min. 10%             |
| UV Trans. 265nm                        | min. 95%        |                |                      |
| UV Trans. 270nm                        |                 | min. 83%       | min. 79%             |
| UV Trans. 275nm                        | min. 98%        |                |                      |
| UV Trans. 280nm                        |                 | min. 90%       | min. 93%             |
| UV Trans. 300nm                        |                 | min. 97%       | min. 95%             |
| UV Trans. 320nm                        |                 | min. 98%       | min. 96%             |
| UHPLC/MS ESI/APCI+ (0.1% as Reserpine) | max. 20ppb      | max. 20ppb     | max. 20ppb           |
| Grad. elution H.Peak at 254nm          | max. 0.002AU    | max. 0.002AU   | max. 0.002AU         |
| Grad. elution drift at 254nm           | max. 0.005AU    | max. 0.010AU   | max. 0.010AU         |
| Fluorescence 254nm (0.1% as Quinine)   | max. 0.5ppb     | max. 0.5ppb    | max. 1ppb            |
| Fluorescence 365nm (0.1% as Quinine)   | max. 0.5ppb     | max. 0.5ppb    | max. 1ppb            |
| Aluminum (Al)                          | max. 10ppb      | max. 0.05ppm   | max. 0.05ppm         |
| Calcium (Ca)                           | max. 50ppb      | max. 0.2ppm    | max. 0.2ppm          |
| Iron (Fe)                              | max. 20ppb      | max. 0.2ppm    | max. 0.3ppm          |
| Potassium (K)                          | max. 20ppb      | max. 0.1ppm    | max. 0.1ppm          |
| Magnesium (Mg)                         | max. 10ppb      | max. 0.05ppm   | max. 0.05ppm         |
| Sodium (Na)                            | max. 50ppb      | max. 0.5ppm    | max. 0.5ppm          |
| Lead (Pb)                              | max. 20ppb      | max. 0.2ppm    | max. 0.3ppm          |

## • Salts for ULC/MS

| Product                                | Ammonium formate      | Ammonium acetate      |
|----------------------------------------|-----------------------|-----------------------|
| <b>Cat. Number</b>                     | 019841                | 012441                |
| <b>Test Description</b>                | <b>Specifications</b> | <b>Specifications</b> |
| Assay (T dry)                          | min. 99.0% w/w        | min. 99.0% w/w        |
| pH (1M in water)                       | 5.5-7.5               | 6.0-7.5               |
| UHPLC/MS ESI/APCI+ (0.1% as Reserpine) | max. 30ppb            | max. 30ppb            |
| UHPLC/MS ESI/APCI- (0.1% as Reserpine) | max. 50ppb            | max. 50ppb            |
| Water (KF)                             | max. 2%w/w            | max. 2%w/w            |
| Grad. elution H.Peak at 254nm          | max. 0.002AU          | max. 0.002AU          |
| Grad. elution drift at 254nm           | max. 0.010AU          | max. 0.010AU          |
| Fluorescence 254nm (0.1% as Quinine)   | max. 0.5ppb           | max. 0.5ppb           |
| Fluorescence 365nm (0.1% as Quinine)   | max. 0.5ppb           | max. 0.5ppb           |
| UV Trans. 260nm (1M)                   | min. 98%              | min. 96%              |
| UV Trans. 280nm (1M)                   | min. 98%              | min. 98%              |
| Filter test (1M in Water)              | Complying             | Complying             |
| Solution (1M/Water)                    | Clear & colorless     | Clear & colorless     |
| Chloride (Cl)                          | max. 0.001%           | max. 0.0005%          |
| Sulfate (SO <sub>4</sub> )             | max. 0.005%           | max. 0.001%           |
| Aluminum (Al)                          | max. 1ppm             | max. 1ppm             |
| Calcium (Ca)                           | max. 5ppm             | max. 5ppm             |
| Iron (Fe)                              | max. 1ppm             | max. 1ppm             |
| Potassium (K)                          | max. 5ppm             | max. 5ppm             |
| Magnesium (Mg)                         | max. 1ppm             | max. 1ppm             |
| Sodium (Na)                            | max. 5ppm             | max. 5ppm             |

|                                                                                                                                                                                                                                                     |                                                                                     |                                                                                                                                                                                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Determination of volatile organic compounds in water and soils :<br/><b>"Purge and Trap"</b> method Methanol Purge &amp; Trap 136828</p>                                                                                                         |    | <p><b>Headspace</b></p> <p>A range of high boiling point solvents, such as DMA, DMI, DMSO, NMP, specially developed for Headspace analysis of organic volatile impurities.</p>            |
| <p><b>Solvents for trace organic analysis</b></p> <p>Pesti-S, Dioxins, Furans &amp; PCB'S, LV-GC SuperTrace® for trace organic analysis</p>                                                                                                         |   | <p><b>Hydroquant™</b></p> <p>Product line covers the whole range of volumetric and coulometric reagents for the determination of water by Karl-Fisher method.</p>                         |
| <p><b>Reference Standards for GC</b></p> <p>Biosolve offers a broad range of highly pure GC reference standards for various GC applications. The majority of our GC reference standards are completely synthetic and typically over 99.9% pure.</p> |  | <p><b>Shuttle drums ULC/MS</b></p> <p>Some stainless steel containers are available that can be equipped with dip pipe delivery devices from 25 l to 1500 l volume.<br/><b>Ask us</b></p> |





**Biosolve Chimie  
France**

20 Rue Roger Husson  
57260 Dieuze

Tel.: +33 - 3 - 878 675 80

Fax: +33 - 3 - 878 675 89

Email: [info@biosolve-chimie.com](mailto:info@biosolve-chimie.com)

**Biosolve BV  
The Netherlands**

Leenderweg 78,  
5555 CE Valkenswaard

Tel.: +31 - 40 - 207 1300

Fax: +31 - 40 - 204 8537

Email: [info@biosolve-chemicals.com](mailto:info@biosolve-chemicals.com)

**Biolab Chemicals India Private Ltd**

Sixth floor, A-603, Aakruti Kiran  
CHS, Kanakia Road, Mira Road,  
Thane, Maharashtra 401107.

Tel. + 917 680 942 446

Email: [ankur@biolabchemicals-india.com](mailto:ankur@biolabchemicals-india.com)

**Website:**

[www.biosolve-chemicals.com](http://www.biosolve-chemicals.com)