



# ACETIC ACID

**PRODUCT NUMBER: S010601**

**LOT NUMBER: 6111092**

**RELEASE DATE: December, 2011**

**EXPIRY DATE: December, 2014**

## CERTIFICATE OF ANALYSIS

| Tests                              | Maximum Specification | Actual Value | Units    | CH <sub>3</sub> COOH (≥99%): Properties |
|------------------------------------|-----------------------|--------------|----------|---|
| ASSAY (CH <sub>3</sub> COOH, w/w): | ≥ 99%                 | 99.9%        | % by w/w | Molar Mass: 60.05g/mol                  |
| Colour:                            | 10                    | < 10         | APHA     | Density: 1.05 g/ml                      |
|                                    |                       |              |          | Molarity: 18 moles/litre                |
|                                    |                       |              |          | Normality: 18 moles/litre               |

| Analyte         | Maximum Specification | Actual Value (in ppb) | Analyte           | Maximum Specification | Actual Value (in ppb) |
|-----------------|-----------------------|-----------------------|-------------------|-----------------------|-----------------------|
| Aluminum (Al)   | 1 ppb                 | < 0.5                 | Molybdenum (Mo)   | 0.5 ppb               | < 0.2                 |
| Antimony (Sb)   | 0.5 ppb               | < 0.1                 | Neodymium (Nd)    | 0.1 ppb               | < 0.1                 |
| Arsenic (As)    | 0.5 ppb               | < 0.1                 | Nickel (Ni)       | 0.5 ppb               | < 0.1                 |
| Barium (Ba)     | 0.5 ppb               | < 0.1                 | Platinum (Pt)     | 0.5 ppb               | < 0.1                 |
| Beryllium (Be)  | 0.1 ppb               | < 0.1                 | Potassium (K)     | 1 ppb                 | < 0.5                 |
| Bismuth (Bi)    | 0.1 ppb               | < 0.1                 | Praseodymium (Pr) | 0.1 ppb               | < 0.1                 |
| Cadmium (Cd)    | 0.5 ppb               | < 0.1                 | Rhenium (Re)      | 0.1 ppb               | < 0.1                 |
| Calcium (Ca)    | 1 ppb                 | < 0.5                 | Rhodium (Rh)      | 0.5 ppb               | < 0.1                 |
| Cerium (Ce)     | 0.1 ppb               | < 0.1                 | Rubidium (Rb)     | 0.1 ppb               | < 0.1                 |
| Cesium (Cs)     | 0.1 ppb               | < 0.1                 | Ruthenium (Ru)    | 0.5 ppb               | < 0.1                 |
| Chromium (Cr)   | 1 ppb                 | < 0.1                 | Samarium (Sm)     | 0.1 ppb               | < 0.1                 |
| Cobalt (Co)     | 0.1 ppb               | < 0.1                 | Scandium (Sc)     | 0.1 ppb               | < 0.1                 |
| Copper (Cu)     | 0.5 ppb               | < 0.2                 | Selenium (Se)     | 1 ppb                 | < 0.5                 |
| Dysprosium (Dy) | 0.1 ppb               | < 0.1                 | Silver (Ag)       | 1 ppb                 | < 0.1                 |
| Erbium (Er)     | 0.1 ppb               | < 0.1                 | Sodium (Na)       | 1 ppb                 | < 0.5                 |
| Europium (Eu)   | 0.1 ppb               | < 0.1                 | Strontium (Sr)    | 0.5 ppb               | < 0.1                 |
| Gadolinium (Gd) | 0.1 ppb               | < 0.1                 | Tellurium (Te)    | 0.5 ppb               | < 0.1                 |
| Gallium (Ga)    | 0.1 ppb               | < 0.1                 | Terbium (Tb)      | 0.1 ppb               | < 0.1                 |
| Germanium (Ge)  | 0.5 ppb               | < 0.1                 | Thallium (Tl)     | 0.1 ppb               | < 0.1                 |
| Hafnium (Hf)    | 0.1 ppb               | < 0.1                 | Thorium (Th)      | 0.1 ppb               | < 0.1                 |
| Holmium (Ho)    | 0.1 ppb               | < 0.1                 | Thulium (Tm)      | 0.1 ppb               | < 0.1                 |
| Indium (In)     | 0.1 ppb               | < 0.1                 | Tin (Sn)          | 0.5 ppb               | < 0.1                 |
| Iron (Fe)       | 1 ppb                 | < 0.5                 | Titanium (Ti)     | 0.5 ppb               | < 0.1                 |
| Lanthanum (La)  | 0.1 ppb               | < 0.1                 | Tungsten (W)      | 0.5 ppb               | < 0.1                 |
| Lead (Pb)       | 0.1 ppb               | < 0.1                 | Uranium (U)       | 0.1 ppb               | < 0.1                 |
| Lithium (Li)    | 0.1 ppb               | < 0.1                 | Vanadium (V)      | 0.5 ppb               | < 0.1                 |
| Lutetium (Lu)   | 0.1 ppb               | < 0.1                 | Ytterbium (Yb)    | 0.1 ppb               | < 0.1                 |
| Magnesium (Mg)  | 0.5 ppb               | < 0.2                 | Yttrium (Y)       | 0.1 ppb               | < 0.1                 |
| Manganese (Mn)  | 0.5 ppb               | < 0.1                 | Zinc (Zn)         | 1 ppb                 | < 0.5                 |
| Mercury (Hg)    | 1 ppb                 | < 1                   | Zirconium (Zr)    | 0.1 ppb               | < 0.1                 |

| Analyte                                    | Maximum Specification | Actual Value (in ppm) | Analyte   | Maximum Specification | Actual Value (in ppm) |
|--|-----------------------|-----------------------|---|-----------------------|-----------------------|
| Chloride (Cl <sup>-</sup> )                | 1 ppm                 | < 1                   | Substances Reducing Dichromate (K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> ) | To Pass Test          | Passes Test           |
| Phosphate (PO <sub>4</sub> <sup>3-</sup> ) | 1 ppm                 | < 1                   | Substances Reducing Permanganate (KMnO <sub>4</sub> )                           | To Pass Test          | Passes Test           |
| Sulphate (SO <sub>4</sub> <sup>2-</sup> )  | 0.5 ppm               | < 0.5                 |   |                       |                       |

Element concentrations are at the point of bottling. Concentrations of some elements will increase due to the storage container.  
 Glass bottles: Al, B, Ca, K, Mg, Mn, Na & Si. Polyethylene bottles: Al, Ca, Fe, Na & Zn.

*B McKelvey*  
 Dr. B. McKelvey  
 QA/QC Manager

