

Test method of Acetyl-L-Carnitine HCL

1. **Appearance:** white crystal or white crystalline powder
2. **Specific rotation:**
10g Acetyl-L-Carnitine, accurately weighted, dissolved in 100ml volume, make up 10% water solution, calculate the specific rotation, then calculate according to the calculating formula.
3. **PH:** make up water solution (1:50), PH value should be 2.0-3.0.
4. **Residue on ignition:** take sample of 1g, to crucible of ignition to constant weight, Ignition slowly to carbonize, cool to house temperature, add H_2SO_2 0.5-1ml, make it Humidity, heat with low temperature until the vapour of H_2SO_2 has all disappeared, then Ignition at $700-800^\circ\text{C}$ until totally carbonize. Move into desiccator, make cool to house Temperature. finally ignition at $700-800^\circ\text{C}$ to constant temperature. Residue on ignition Should be less than 0.5%.
5. **Melting point:**
 - a. Take 10g of sample accurately weighted to a glass mortar oven to be grinded into fine powder, then dried on the oven for 2 hours, at the temperature of $90-100^\circ\text{C}$.
 - b. Take the sample out the oven when it is still heat, fill into three piece of capillary quickly, the filling height is 1cm.
 - c. Take the filled capillary into the full automatic measure equipmet for testing the Melting point. Setting the temperature at $1.5^\circ\text{C}/\text{min}$, then we can get the result.
6. **Loss on drying:** take sample properly weighted, dried under 105°C for 3 hours, loss on drying should be less than 0.5%.
7. **Heavy metal:**

Prepare sample 1g, two colorimetric tube.

Tube A: adding 1ml of standard solution of lead, mixture with 2ml of acetate (PH 3.5), then adding Water, dissolved into 25ml.

Tube B: adding test solution 25ml, adding 2ml thioacetamide into each tube of tube A and Tube B, lay for 2 minutes, put on white paper, compare the colour of the tube from up to Down, solution colour of tube A should be more slight then solution colour of tube B, Heavy metal not more than 10ppm.
8. **Arsenic:** take 1g of sample, add 1g of $\text{Ca}(\text{OH})_2$, mixture and stir with little water, heat with light Fire, then ignition to carbonize, then cool, add HCL 5ml and water 23ml, calculate according to Analysis of arsenic, content not more than 2ppm.
9. **Assay:**
About 0.5g sample to be analyzed to a taper bottle, accurately weighted, dissolved in 50ml distilled water, add two drop of phenothalin, titrate with 0.1mol/L NaOH to a slight red endpoint, calculate the assay of Acetyl-L-Carnitine HCL according to the used volume of NaOH solution.

Calculation:

$$C: \frac{(\text{NaOH} \times V_{\text{NaOH}} \times 239)}{W_{\text{sample}} \times 1000} \times 100\%$$

C: Assay

V: Volume

W: Weight