



優必克科技股份有限公司

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Cathode Material (LiMn_2O_4)

Product name : Cathode Material (LiMn_2O_4)

Model : LMO-19S

Chemical formula : LiMn_2O_4



Analysis:

| Project | | Unit | Standard value | Typical value | Test equipment and methods |
|----------------------------|------------------|------------------------|----------------|---------------|---|
| chemical components | Li | % | 3.80~4.60 | 4.13 | AAS/ICP |
| | Mn | % | 58.00~60.00 | 58.40 | Ferrous Sulfate Titration |
| Impurities | Fe | ppm | ≤ 100 | 30 | AAS/ICP |
| | Ni | ppm | ≤ 100 | 40 | AAS/ICP |
| | Na | ppm | ≤ 3500 | 2200 | AAS/ICP |
| | Cu | ppm | ≤ 20 | 7 | AAS/ICP |
| Particle size distribution | D ₁₀ | μm | ≥ 5.00 | 7.0 | MasterSize2000, Particle Size analyser; Hydro2000MU; Sample-size: 2Kg Dispersant: water Refractive index : 1.330 |
| | D ₅₀ | μm | 17.00~22.00 | 19.0 | |
| | D ₉₀ | μm | ≤ 45.00 | 38.0 | |
| | D _{max} | μm | ≤ 75.00 | 61.0 | |
| Crystal structure | | / | Measured | / | XRD |
| pH | | / | 7.0~10.0 | 7.55 | pH |
| Moisture | | ppm | ≤ 700 | 400 | (150°C Vacuum drying 2h) |
| Specific surface area | | m^2/g | 0.20~0.70 | 0.45 | 3H-2000 type Adsorption: high purity N ₂ :He=4:1 BET tube: 9mm U-shaped tube |
| Tap density | | g/cm^3 | ≥ 1.7 | 1.8 | Tap density meter |

| | | | | |
|---------------------------------|--------------|--------------------------------|--------------|--|
| | | | | Vibration frequency : 100~300 times/min amplitude : 3mm , Vibration times: 4000 , Graduated cylinder : 100ml , Sample size : 100g |
| First discharge capacity | mAh/g | ≥ 117.0 | 118.0 | CR2032 battery |
| First efficiency | % | ≥ 93.0 | 95.0 | 0.1C/0.1C , 4.3~3.0V |