| Chemistry | Lithium cobalt oxide | Lithium polymer | Nickel cadmium | Zinc carbon | Alkaline | Lithium thionyl chloride |
|---|---|---|---|---|---|---|
| **Type** | Secondary | Primary | Primary | Primary | Primary | Primary |
| **Voltage** | 3.20V – 3.8V | 3.20V – 3.8V | 1V -1.5V | 1.2V – 1.8V | 1V-1.8V | 3.2-3.8V |
| **Specific energy** | 150–200Wh/kg | 100–150Wh/kg | 45–80Wh/kg | 250Wh/kg | 250Wh/kg | 500 Wh/kg |
| **Discharge rate** | 1C (1h) | 1C, 10C possible | Can be above 1C | Can be above 1C | 1C | 1C, 10C possible |
| **Self-discharge per month @ 25°C** | <5% | <5% | 20% | 7% | <0.3% | <0.3% |
| **Operating temperature** | -20°C to 50°C | -20°C to 50°C | -20°C to 50°C | -4°C to 50°C | 0°C to 60°C | -55 °C to +85 °C |
| **Peak load current / Best result** | 2C /<1C | >10C/<5C | 20C/1C | 10C/1C | 20C/1C | >10C/<5C |
| **Packaging** | Prismatic and pouch cell | Prismatic | A, AA, C, also in fractional sizes | A, AA button cells | AA, AAA, C, D, 9V | A, AA, C, also in fractional sizes |
| **Applications** | Mobile phones, tablets, laptops, cameras | Power tools, medical devices, powertrains, sensors, TV remotes | Main battery in aircraft (flooded), wide temperature range | Primary: Watches, memory backup; Secondary: Aerospace, missiles, military, TV cameras | Flashlights, toys, entertainment devices | Sensors, Flashlights, toys, medical and entertainment devices |
| **Characteristics** | High energy, limited power; market share has stabilized | High power, lower capacity; safer than lithium cobalt; often mixed with NMC to improve performance | Robust, forgiving, high maintenance; only battery that you can charge ultrafast with little stress | Low cost, high production; poor performance in low temperatures, low energy density | Should not be charged; danger of leakage, gas, explosion; high production, popular; moderate cost | Greater energy density and higher capacity; wide temperature range; moderate cost |

Source: Batteryuniversity.com