

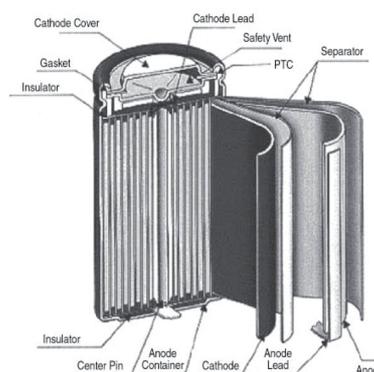
INPUT

Battery Specification

Name:	Lithium-ion Battery
Category:	lithium ion rechargeable battery
Nominal Voltage:	3.7 V
Energy Density:	100-190 Wh/kg
Anode:	graphite
Cathode:	lithium compounds (e.g. LiCoO ₂ , LiNi _x Mn _y Co _z O ₂ , LiNi _x Co _y Al _z O ₂ , etc.)
Electrolyte:	lithium salt (e.g. LiPF ₆ , LiClO ₄ or LiBF ₄) dissolved in organic solvents (e.g. ethylene carbonate EC, propylene carbonate PC, etc.)
Discharge Reaction:	Li_{1-x}CoO₂ + Li_xC -> LiCoO₂ + C (opposite direction for charging) Li_{1-a}Ni_xMn_yCo_zO₂ + Li_aC -> LiNi_xMn_yCo_zO₂ + C (opposite direction for charging)
Structure:	spiral or laminate



Sample of Li-ion Battery



TREATMENT



OUTPUT

Component	Input wt [%]	Output Form	Recycling Path	Recycling Efficiency [%]
Steel	23,6 %	steel scrap	steel works	20,3 %
Copper foils	15,2 %	Cu scrap	Cu works	14,3 %
Aluminum foils	4,3 %	Al scrap	Al works	0,3 %
Plastics, electrolyte solvents	18,5 %	pyrolysed gas	thermal use	-
Cobalt	12,1 %	powder / pellets	nonferrous works	11,6 %
Nickel	6,7 %			6,5 %
Graphite/Carbon	15,5 %			12,2 %
Others (Oxygen, etc.)	4,1 %			-

Total: 100,0 %

RE*: 65,2 %

* Calculation according to EU/66/2006 and EU/493/2012