

# Cathode, Anode, Solid Electrolyte Materials for Lithium Ion Battery

1. Powder
2. Ink, paste for printing (please consult with us to modify particle size, concentration of active materials, viscosity, resin, water base, organic solvent base..)
3. Surface coating such as silica, alumina, conductive carbon, carbon nanotube etc...
4. Metal doing of active materials
5. Oxide materials synthesis besides below table materials as customer request.

## Cathode for Lithium Ion Battery

Material	size in powder	size in liquid (particle sol in water or organic solvent)
$\text{LiCoO}_2$	1-10 $\mu\text{m}$ (powder)	< 150 nm (liquid dispersion)
$\text{LiMn}_2\text{O}_4$	1-10 $\mu\text{m}$ (powder)	< 150 nm (liquid dispersion)
$\text{LiNi}_{1/3}\text{Mn}_{1/3}\text{Co}_{1/3}\text{O}_2$	1-5 $\mu\text{m}$ (powder)	< 150 nm (liquid dispersion)
$\text{LiMnPO}_4$ , $\text{LiFePO}_4$	1-10 $\mu\text{m}$ (powder)	< 150 nm (liquid dispersion)
$\text{LiCoPO}_4$	1-10 $\mu\text{m}$ (powder)	< 150 nm (liquid dispersion)
$\text{LiNi}_{0.5}\text{Mn}_{1.5}\text{O}_4$	1-10 $\mu\text{m}$ (powder)	< 150 nm (liquid dispersion)
$\text{LiNi}_{0.13}\text{Mn}_{0.54}\text{Co}_{0.13}\text{O}_2$ Li Rich Cathode	1-10 $\mu\text{m}$ (powder)	< 150 nm (liquid dispersion)
$\text{LiNi}_{0.6}\text{Co}_{0.2}\text{Mn}_{0.2}\text{O}_2$	1-10 $\mu\text{m}$ (powder)	< 150 nm (liquid dispersion)
$\text{LiNi}_{0.8}\text{Co}_{0.1}\text{Mn}_{0.1}\text{O}_2$	1-10 $\mu\text{m}$ (powder)	< 150 nm (liquid dispersion)
$\text{LiNi}_{0.5}\text{Co}_{0.2}\text{Mn}_{0.3}\text{O}_2$	1-10 $\mu\text{m}$ (powder)	< 150 nm (liquid dispersion)
$\text{LiNi}_{0.8}\text{Co}_{0.15}\text{Al}_{0.05}\text{O}_2$	1-10 $\mu\text{m}$ (powder)	< 150 nm (liquid dispersion)
$\text{Li}_2\text{FeP}_2\text{O}_7$	1 - 10 $\mu\text{m}$ (powder)	< 200 nm (liquid dispersion)

## Anode for Lithium Ion Battery

Material	size in powder	size in liquid (particle sol in water or organic solvent)
$\text{Li}_4\text{Ti}_5\text{O}_{12}$	1-10 $\mu\text{m}$ (powder)	< 150 nm (liquid dispersion)

## Magnesium, Sodium Ion Battery Electrode

$\text{Mg}_x\text{Co}_y\text{O}$ , $\text{Mg}_x\text{Ni}_y\text{O}$ etc...	1-10 $\mu\text{m}$ (powder)	< 200 nm (liquid dispersion)
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## Lithium Ion Battery Solid Electrolyte

Material	size in powder	size in liquid (particle sol in water or organic solvent)
$\text{Li}_{3x}\text{La}_{2/3-x}\text{TiO}_3$	1-10 $\mu\text{m}$ (powder)	< 150 nm (liquid dispersion)
$\text{Li}_7\text{La}_3\text{Zr}_2\text{O}_{12}$		

GS Alliance Co., Ltd.

2-22-11 Obana, Kawanishi, Hyogo 666-0015 JAPAN

Phone: 072- 759-8501 Facsimile: 072- 759-9008

Web : <http://www.gsalliance.co.jp/>