

P700

HIGH ENERGY DENSITY LFP CATHODE MATERIAL



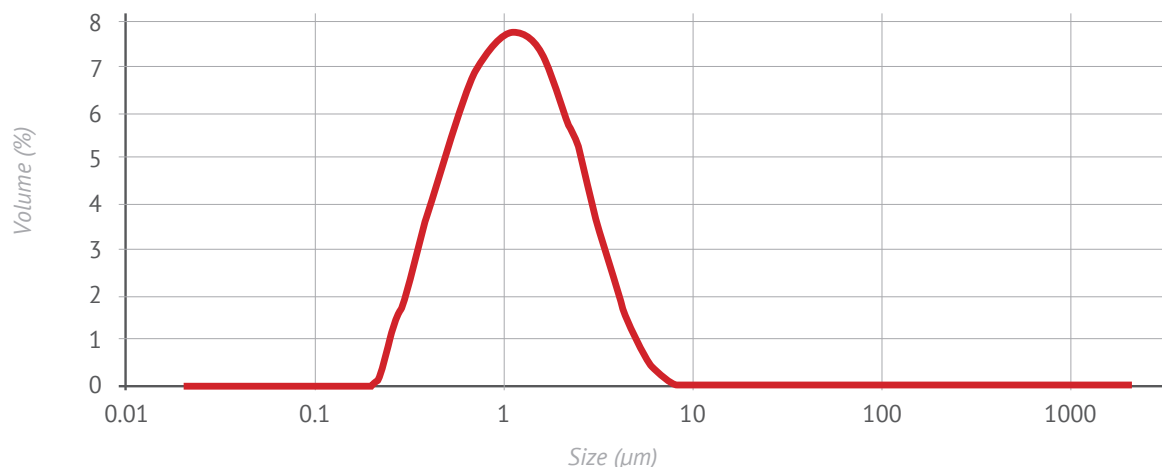
September 2019 edition

OPTIMIZED PARTICLE SIZE DISTRIBUTION FOR AN INCREASED
PRESSED DENSITY AND AN EXCELLENT ENERGY DENSITY FOR
HIGH PERFORMANCE BUS APPLICATIONS.
LICENSED WORLDWIDE FROM $\text{LiFePO}_4 + \text{C}$ LICENSING AG.

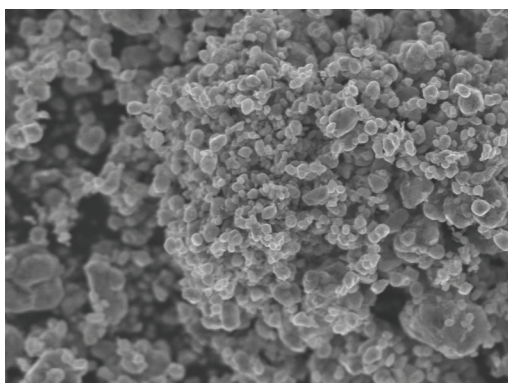
P700			Unit	Typical Value
Physical parameters	Particle size distribution	D10	μm	0.40
		D50	μm	1.10
		D90	μm	3.50
		D99	μm	12.0
	Specific surface area		m^2/g	11.0
	Carbon content		wt.%	1.35
	Tap density		g/cm^3	1.10
	Magnetic materials		ppm	0.30
	Resistivity		$\Omega \text{ cm}$	30
Water content		ppm	300	
Chemical parameters	pH		/	9.2
	Electrochemical performances (half cell)	Initial specific charge capacity	mAh/g	158.0
		Initial specific discharge capacity	mAh/g	157.0
		Initial efficiency	%	97

Discharge Capacity	0.1C	0.2C	1C	2C	5C
P700 (mAh/g)	159.0	157.1	138.7	126.8	103.9

TYPICAL PARTICLE SIZE DISTRIBUTION MEASURED BY MALVERN LASER DIFFRACTION

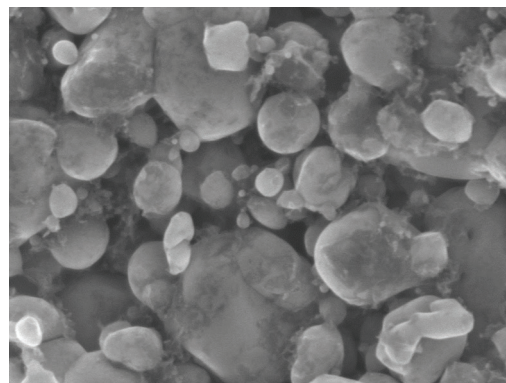


SEM - DISTRIBUTION OF 200 AND 1000 NM PRIMARY PARTICLES FOR OPTIMIZED ENERGY DENSITY



x 10,000

1µm



x 50,000

100nm

About Prayon

Prayon is a fully integrated global phosphate producer headquartered in Belgium, with manufacturing operations in Belgium, France and the United States. Jointly owned by OCP (Morocco) and SRIW (Belgium), Prayon manufactures and markets an extensive range of purified phosphoric acids, phosphate salts and fluorine products that are used in food, fertilisers and a range of industrial applications. Prayon also manufactures lithium iron phosphate, a cathode material used in hybrid and electric vehicle batteries as well as stationary applications. Prayon is constantly exploring new products designed to serve emerging market trends. www.prayon.com

About Pulead

Established in 1999 by Oriental Investment Co. Ltd and Peking University, Pulead Technology Industry is one of China's leading Li-ion battery cathode producers. Together with its strategically positioned subsidiaries and JVs in cathodes and separators as well as in upstream lithium resources and downstream large format battery packs, Pulead is becoming a key player in the Li-ion battery supply chain. www.pulead.com.cn/en/

About Prayon-Pulead

Prayon - Pulead is a joint venture created for the manufacture and sale of phosphate-based materials for lithium-ion batteries.

WORLDWIDE LICENSE FROM LiFePO_4+C LICENSING AG

In May 2012, Prayon obtained a worldwide license for its product from LiFePO_4+C Licensing AG.

LiFePO_4+C Licensing (an affiliate of Clariant AG) represents patent owners Hydro-Québec (Canada), Université de Montréal (Canada) and the Centre National de la Recherche Scientifique (France).

The LFP patent rights associated with the license include worldwide protection for LFP technology, patents on the invention of basic LFP materials, carbon-coating patents usable with LFP materials and carbon coating process patents.

Prayon is so one of the very few to reach such an agreement with LiFePO_4+C , which grants a limited number of sublicenses to suitable LFP/LMP producers capable to address the market demand with high quality products.