

XOANONS® Solvent-based dispersing agent

Used for preparing LFP/LMFP battery homogenate. Disperse carbon nanotube slurry, conductive carbon black slurry, and ceramic slurry.

Model number

XOANONS®LD 1128

Specification

Composition Block copolymers with conjugated groups

Active substance 60%

Solvent 1-Methyl-2-pyrrolidone

Note: This data sheet is intended to give typical results, not standard. Subject to COA.

Application system

LFP/LMFP pulping, carbon nanotube slurry, conductive carbon black slurry, alumina and boehmite slurry

Properties

- Provide spatial hindrance and adding it to the slurry can significantly reduce the viscosity of the positive electrode slurry; Improve the fluidity of the slurry;
- Reduce adverse phenomena such as sedimentation and flocculation of the slurry; Improve the processing performance of slurry coating, increase the yield rate, and help reduce costs and increase efficiency;
- Can increase the solid content of LFP slurry by about 8%. Can increase the solid content of LMFP slurry by about 5%; Reduce the amount of NMP used, reduce losses during the NMP recovery process, and help reduce costs and increase efficiency;

Incorporation

Add dispersing agent XOANONS®LD 1128 to NMP, mix and dissolve at 10% solid content, and then add it to the slurry according to the formula amount, grind and disperse together. The suitability of the dispersant system can be determined based on the particle size and viscosity of the slurry.

This product is a high molecular polymer that can partially replace adhesives. In order to maintain consistency in energy density, after adding wetting dispersant, the corresponding amount of binder PVDF should be recalculated based on its active substance content.

The calculation method is: PVDF dosage = PVDF (dosage without dispersant) - amount of dispersant added × Active substance content

Suggest addition

Addition quantity based on

Alumina, Boehmite	0.5-2.0%
LFP/LMFP cathode material	0.2-0.8%
Conductive carbon black	20-60%
Carbon nanotubes	20-60%

The recommended dosage above has little impact on the resistance, and the optimal dosage needs to be determined through a series of experiments.

Storage stability

Keep intact 24 months in original package. Products beyond the storage period may continue to be used after inspection. The container must be closed immediately after use.

package

20KG / 50KG

This information is given to the best of our knowledge. Because of the multitude of formulations, production, and application conditions, all the above mentioned statements have to be adjusted to the circumstances of the processor.

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Number: JZXXN-JSWJ-XS-ZJ-01 Effective Date: February 27, 2023

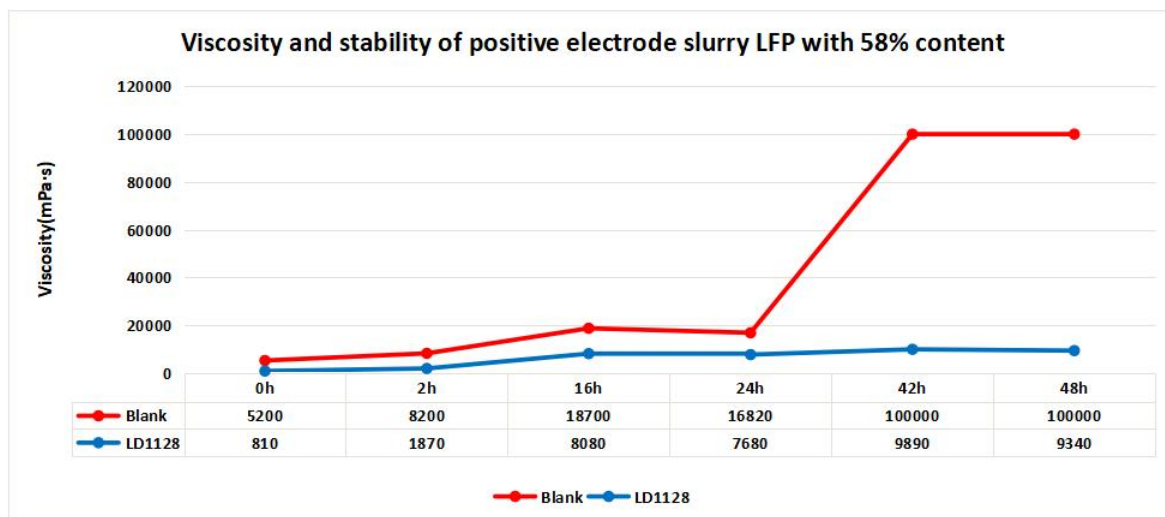
Application Cases of LFP Positive Electrode Slurry

1. Slurry formula and process

material	blank	add dispersing agent
PVDF (HSV900)	1.45	1.31
NMP	13.05	13.05
disperse at high speed to prepare PVDF solution		
XOANONS®LD 1128	/	0.24
NMP	28.66	28.56
evenly disperse and add the following components		
LFP	55.1	55.1
SP	0.87	0.87
grind for a certain time and add the following components		
Carbon tube slurry	0.87	0.87
Total	100	100
Content	58%	58%

Note: The performance of LFP varies among different production enterprises, and the solid content of the homogenate needs to be determined after evaluation and screening.

2. Slurry viscosity and stability



The initial viscosity of the slurry prepared by LD 1128 is much lower than that of the slurry containing the same solid without dispersant. And the stability of the viscosity of the slurry remained good after 48 hours, while the viscosity increased significantly after 16 hours without the addition of dispersants. After 24 hours, the slurry becomes slurry and cannot be coated.

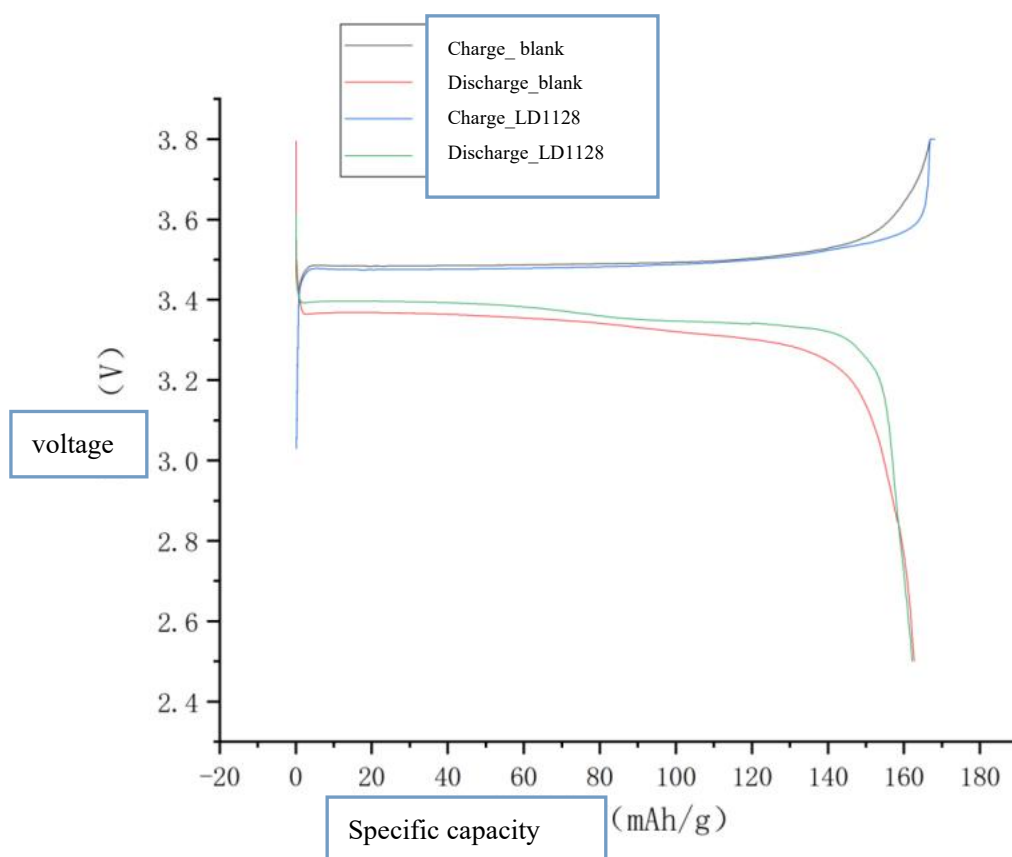
3. First discharge specific capacity and resistivity

	0.1C Discharge specific capacity, mAh/g	resistivity, $\Omega \cdot \text{cm}$
Blank	161.34	0.007
XOANONS®LD 1128	160.6	0.006

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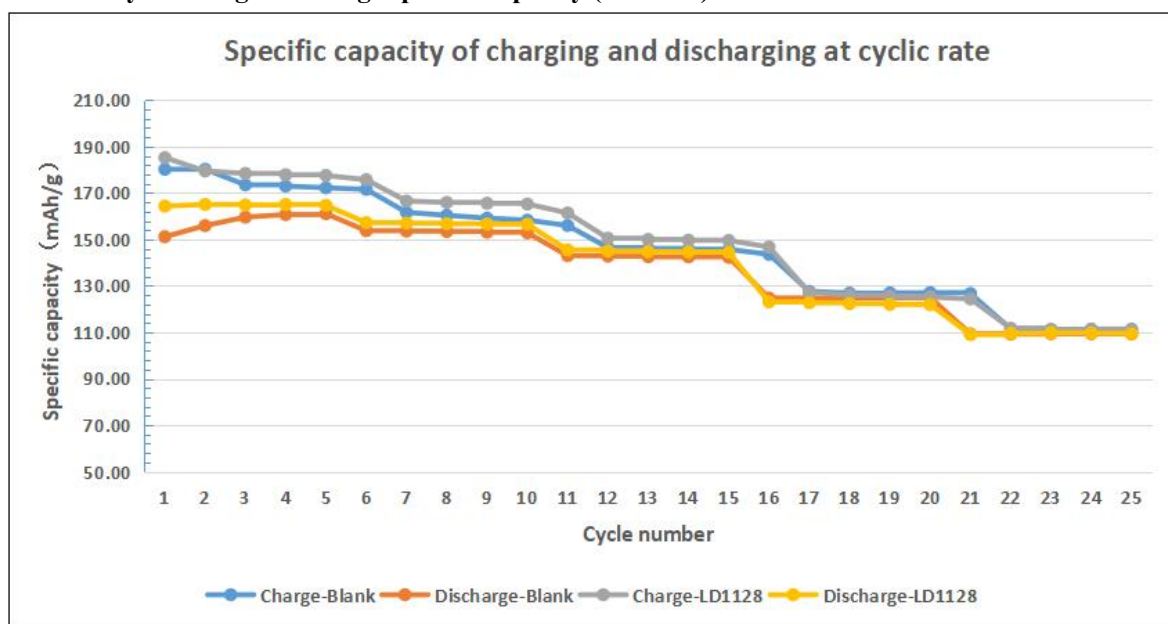
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First charge discharge curve

4. Ratio cycle charge discharge specific capacity (0.2C-3C)

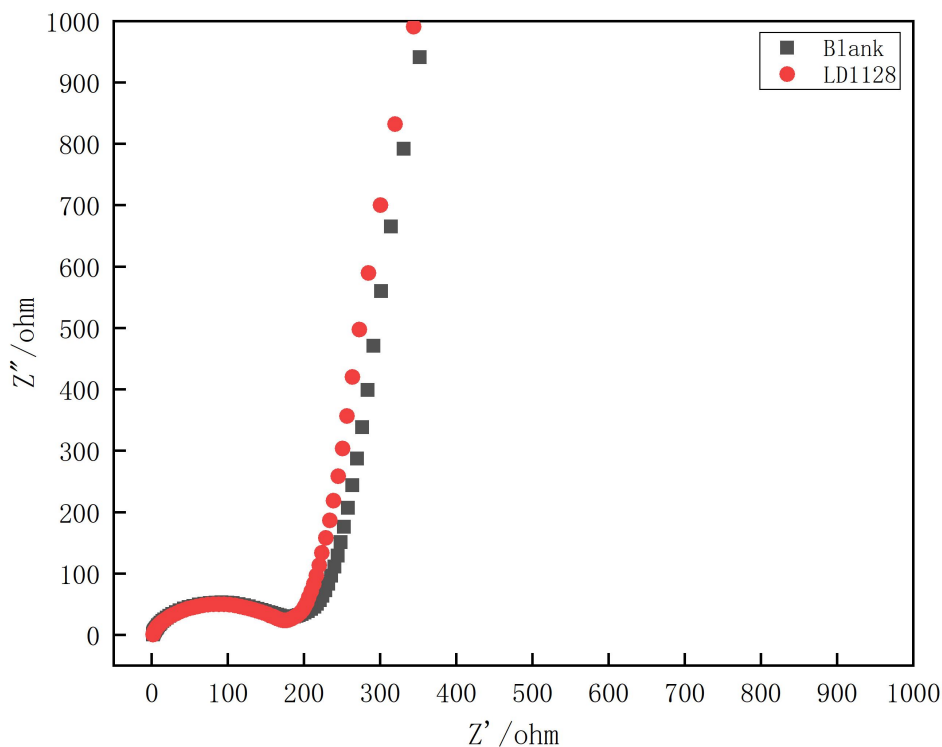


5. AC impedance

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Application Cases of LFP Positive Electrode Slurry

1. Slurry formula and process

material	blank	add dispersing agent
PVDF (HSV900)	1.38	1.25
NMP	12.38	12.38
disperse at high speed to prepare PVDF solution		
XOANONS®LD 1128	/	0.22
NMP	32.32	32.23
evenly disperse and add the following components		
LMFP	52.26	52.26
SP	0.83	0.83
grind for a certain time and add the following components		
Carbon tube slurry	0.83	0.83
Total	100	100
Content	55%	55%

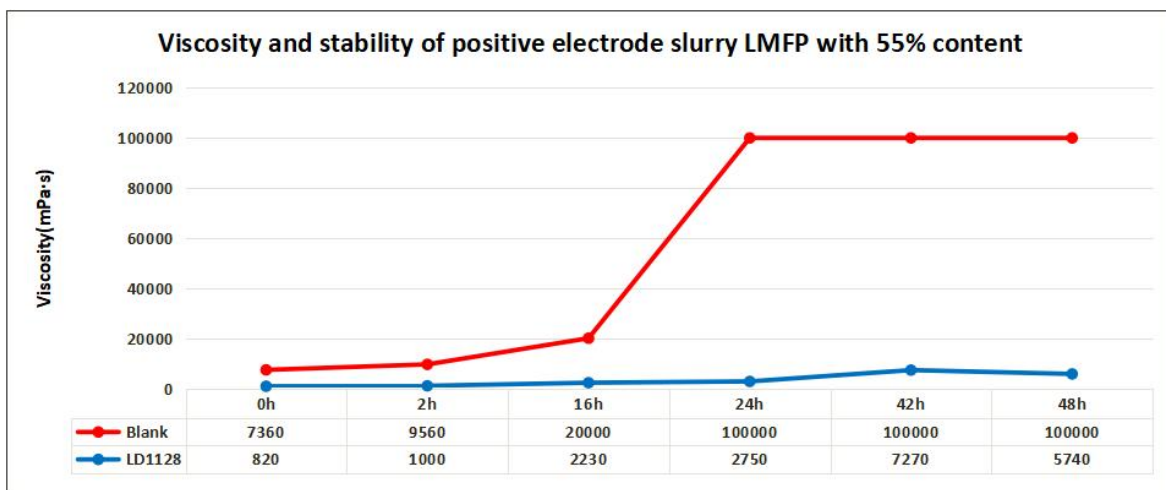
Note: The performance of LMFP varies among different production enterprises, and the solid content of the homogenate needs to be evaluated and screened before confirmation.

2. Slurry viscosity and stability

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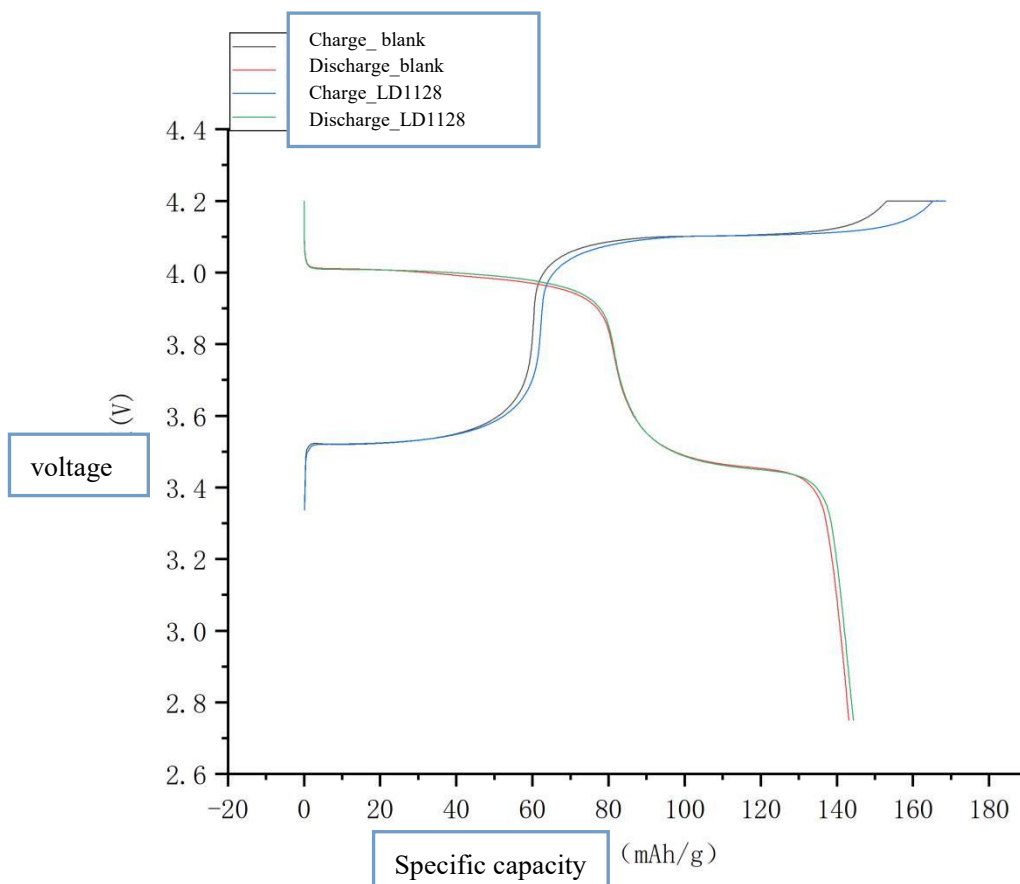
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3.First discharge specific capacity and resistivity

	0.1C Discharge specific capacity, mAh/g	resistivity, $\Omega \cdot \text{cm}$
Blank	143.16	0.09
XOANONS®LD 1128	144.36	0.09



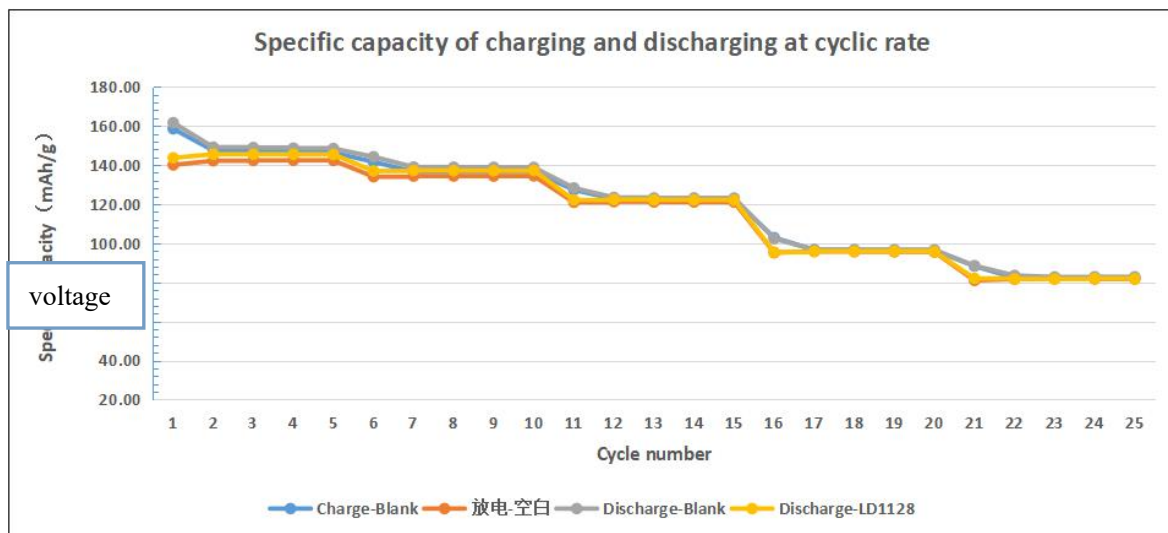
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First charge discharge curve

4. Ratio cycle charge discharge specific capacity (0.2C-3C)



5.AC impedance

