



SPECIALTY ALUMINAS FOR
BATTERY SEPARATORS

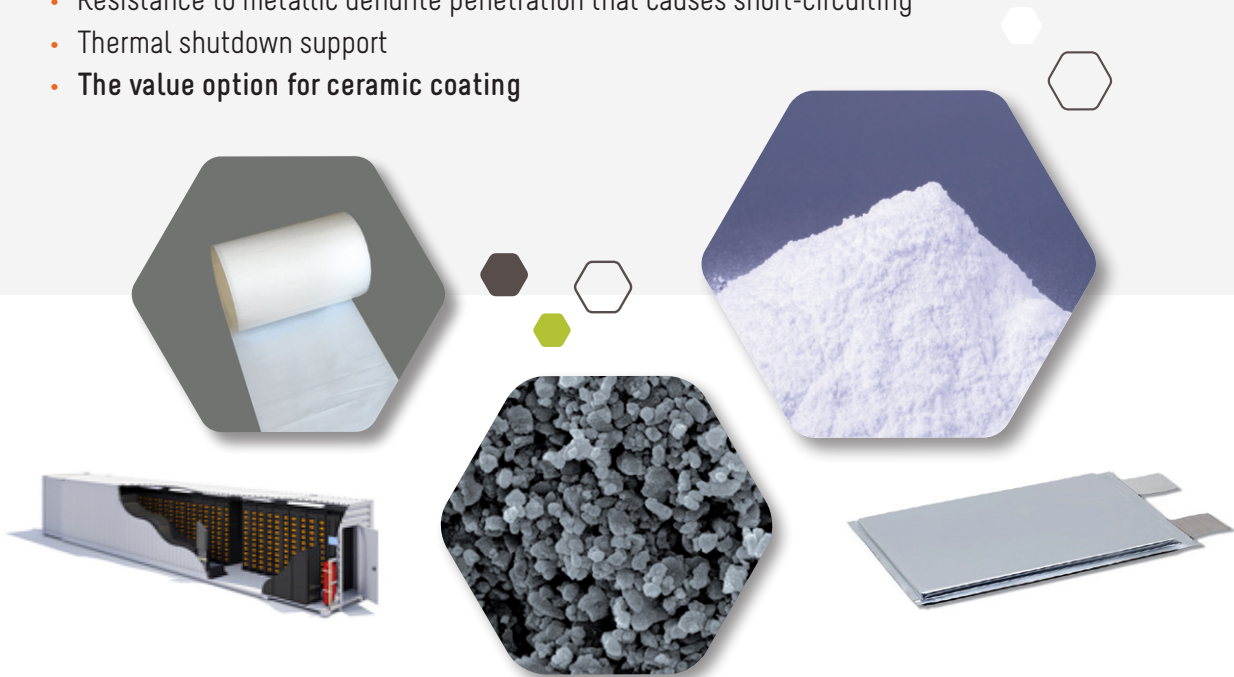
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Alteo's SepAl ceramic coating

for lithium-ion battery separators

The SepAl range has been developed as a ceramic coating for LIB separators. Special attention is paid to particle size distribution, moisture level and iron content. SepAl ceramic coating for LIB separators provides:

- Improved thermal stability (>130-150°C)
- Resistance to metallic dendrite penetration that causes short-circuiting
- Thermal shutdown support
- **The value option for ceramic coating**



		SEPAL-60	SEPAL-70
Ceramic coating for separator films			
Unit			
Physical Properties			
Specific Surface Area BET	m ² /g	5.5	7.5
Particle Size D10 (Sedigraph)	μm	0.28	0.18
Particle Size D50 (Sedigraph)	μm	0.55	0.40
Particle Size D90 (Sedigraph)	μm	1.10	0.90
Particle Size D95 (Sedigraph)	μm	1.50	1.40
Loss on Drying 20-105°C	%	0.10	0.15
Loss on Ignition 20-1000°C	%	0.40	0.50
Chemical Properties			
Al ₂ O ₃ on dry basis	%	99.9	99.9
Na	ppm	220	300
Ca	ppm	150	150
Si	ppm	165	150
Fe	ppm	125	115
Mg	ppm	15	15
Zn	ppm	<5	<5
Cu	ppm	<5	<5
Cr	ppm	<5	<5
Ni	ppm	<5	<5
Magnetic Fe	ppm	<1	<1
pH	-	9.2	9.7

Typical data

SepAl-60 & SepAl-70

Separator coating aluminas provide

- Very fine crystal size (0.4 - <1μm)
- Strictly controlled
 - D90 value (close to 1μm)
 - Chemical analysis
 - Process management to avoid contamination issues

KEY BENEFITS

- High quality product
- Expandable production capacity with local facilities
- Cost efficient solutions