AESON POWER

Sodium Ion Starting Battery

Safer, Stronger, Go Longer

www.aesonpower.com

Sodium Ion Technology

Sodium Ion technology is the next step beyond traditional lead-acid starting batteries. It uses a similar electrochemical principle to lithium ion battery, but is intrinsically safer with no risk of thermal runaway. With strong cranking power across a wide temperature range, excellent high-rate performance, and long service life, Sodium ion batteries are a perfect fit for modern automotive starting applications.

Why Sodium Ion Batteries?

Technical Landscape of Mainstream Cathode Materials

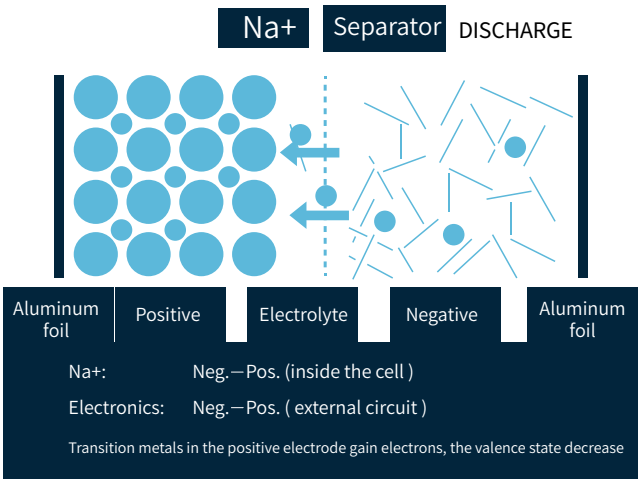
Positive Electrode Technology Routes	Advantages	Disadvantages
Layered Oxides (NFM)	High energy density	Poor safety, high cost, and low cycle life
Polyanion Compounds(NFPP)	**Good cycle life**	**Relatively Low energy density**
Prussian Blue Analogs (PBA)	High energy density	Difficulty in removing moisture during manufacturing, and toxic gases generated under specific conditions

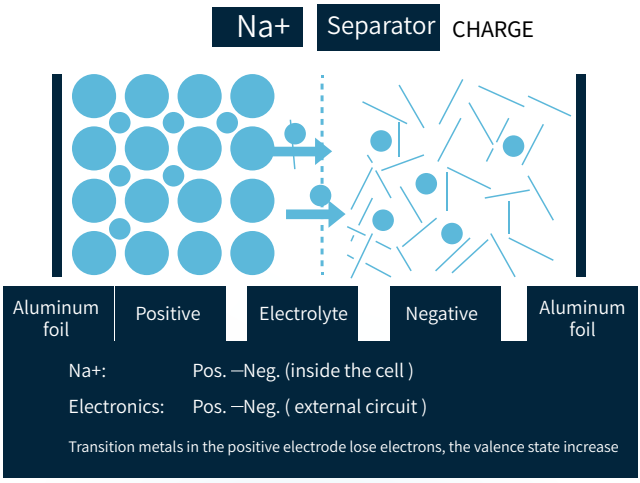
Lead-Acid, Lithium, and Sodium Ion Batteries Comparison

	AGM	LFP	NMC	NFPP
Energy Density (Wh/kg)	30~50	120~200	200~300	100~130
Cycle Life	>700	5000~6000	2500~5000	>5000
Voltage Range	1.75~2.4V	2.5~3.65V	2.8~4.3V	1.5~3.65V
High-Temperature Performance	Moderate	Limited	Poor	Good
Low-Temperature Performance	Moderate	Poor	Good	Good
Cost	Low	Relatively High	High	Low

Sodium ion Starting Batteries
Working Principle

Sodium ion starting batteries store and release electrical energy by moving sodium ion between positive and negative electrodes.





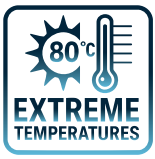
Sodium ion Cell Materials

Positive Electrode: Poly−anionic compounds (NFPP)
Negative Electrode: Hard carbon
Electrolyte: $NaPF_6$

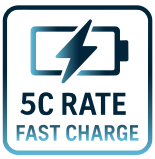
Separator: PP/ PE
Shell: PP+Aluminium+Nylon
Tab: Aluminium

ADVANTAGES OF SODIUM ION STARTING BATTERY

Long Life



High Temperature Operation up to 80°C



Fast Charge

Super Cranking Power

Light Weight– 60% of a Traditional Lead Battery

Recycling Friendly

Maintenance Free

Super High Cycles

Vibration Resistance Improved

Safe/Fire Resistant Thermal Stability

High Energy Across the Volt Range

Non Toxic

SODIUM ION BATTERIES SERIES

NaForce SS
Start-Stop Battery

NaForce
Starting Battery

TurboNa
Starting Battery for 24V

NaForce

Na⁺ (Sodium) is the 11th element on the periodic table and the 6th most abundant element on Earth. This essential element is at the heart of daily life, found everywhere from the sea to the soil and even within our own bodies.

NaForce means the Power of Sodium(Na⁺), representing the next generation of starting batteries built on cutting-edge sodium technology.

Built upon nature's abundant resources, NaForce delivers powerful, cost-effective, and sustainable power, providing a durable starting battery for the future.

Passenger car

NaForce
NaForce SS

1 Container:
PC+ABS, accommodation and fixation of internal structures

2 Lid:
PC+ABS

3 Cells:
Sodium ion cells (2.8V per cell), 4 cells in series

4 Fix kit:
Holding cells and control bar

5 Terminals:
Copper/aluminum terminal

NaForce SS

Replace D23, D26, NS40 EFB, and L2-L6 AGM

START STOP

60%
Lighter than lead-acid

3000Cycles
@50%DoD

FAST
Recharge

Temp.
Operation up to 80°C

0V
Recovery

Vibration Resistance
Improved

180K/120K
Start-stop cycles

SEALED
Maintenance Free

NaForce SS	Capacity (Wh)	Voltage (V)	CCA (A)	Dimensions (mm) L * W * H (TH)	Weight (Kg)	Case Size
Q85L	396	12	650	232*173*200(220)	5.5	D23
S95L	480	12	720	260*173*200(220)	6.5	D26
NS40L-Pro	**312**	**12**	**520**	**196*127*200(220)**	**5.1**	**NS40**
NS40R-Pro	**312**	**12**	**520**	**196*127*200(220)**	**5.1**	**NS40**
H5/LN2	396	12	650	242*175*190(190)	5.6	L2 AGM
H6/LN3	480	12	750	278*175*185(185)	6.5	L3 AGM
H6/LN3-Pro	**594**	**12**	**850**	**278*175*185(185)**	**7.7**	**L3 AGM**
H7/LN4	480	12	800	315*175*190(190)	6.7	L4 AGM
H8/LN5	594	12	850	354*175*190(190)	8.0	L5 AGM
H9/LN6	720	12	950	394*175*190(190)	9.5	L6 AGM

NaForce

Replace D23-D31, NS40, NS60, L1, L2 MF

60% LIGHTER THAN LEAD-ACID

60%
Lighter than lead-acid

2700Cycles
@50%DoD

5C RATE FAST CHARGE

FAST
Recharge

80°C EXTREME TEMPERATURES

Temp.
Operation up to 80°C

DEAD FLAT RECOVERY ZERO VOLTS

0V
Recovery

Vibration Resistance
Improved

SEALED
Maintenance Free

NaForce	Capacity (Wh)	Voltage (V)	CCA (A)	Dimensions (mm) L * W * H (TH)	Weight (Kg)	Case Size
H4/LN1	198	12	360	207*175*190(190)	3.5	L1
L2-400L	240	12	450	242*175*190(190)	4.0	L2
NS40L	198	12	350	196*127*200(220)	3.5	NS40
NS60L	198	12	370	238*129*200(220)	3.7	NS60
NS60L-Pro	**240**	**12**	**420**	**238*129*200(220)**	**4.0**	**NS60**
55D23L	240	12	450	232*173*200(220)	4.0	D23L
55D26L	240	12	450	260*173*200(220)	4.5	D26L
55D26R	240	12	450	260*173*200(220)	4.5	D26R
80D31R	312	12	520	306*173*200(220)	5.0	D31R
95D31L	396	12	650	306*173*200(220)	5.9	D31L
95D31R	396	12	650	306*173*200(220)	5.9	D31R
95D31R-Pro	**594**	**12**	**800**	**306*173*200(220)**	**7.7**	**D31L**

Commercial

TurboNa

1 Container:
PC+ABS, accommodation and fixation of internal structures

2 Lid:
PC+ABS

3 Cells:
Sodium ion cells (2.8V per cell), 8 cells in series

4 Fix kit:
Holding cells and control bar

5 Terminals:
Copper/aluminum terminal

TurboNa

Replace 2 pcs 12V MF & AGM units with only 1 pack

60%
Lighter than lead-acid

2700Cycles
@50%DoD

FAST
Recharge

Temp.
Operation up to 80°C

0V
Recovery

Vibration Resistance
Improved

24V Pack
All-in-One Design

SEALED
Maintenance Free

TurboNa	Capacity (Wh)	Voltage (V)	CCA (A)	Dimensions (mm) L * W * H (TH)	Weight (Kg)	Case Size
24-20A	480	24	450	242*175*190(190)	6.1	L2
24-40A	960	24	850	394*175*190(190)	11.5	L6

AESON POWER

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