

## Market Analysis: ADN Market, AlN Ceramic Substrates in Electronic Market, Aluminum Foil for Lithium-ion Battery Market

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SEATTLE, WASHINGTON, USA, July 6, 2023 /EINPresswire.com/ -- The ADN (Adiponitrile) Market is expected to grow from USD 5.60 Billion in 2022 to USD 7.70 Billion by 2030, at a CAGR of 4.80% during the forecast period. The ADN (Adiponitrile) market is primarily driven by its numerous applications in the production of nylon 6,6. Nylon 6,6 is widely used in the textile industry, as well as in the manufacture of car parts, electrical equipment, and other products. With increasing urbanization and industrialization, the demand for nylon 6,6 is expected to rise, thereby driving the growth of the ADN market. Another key factor driving revenue growth in the ADN market is the increasing adoption of bio-based ADN. The use of bio-based ADN reduces carbon emissions and contributes to sustainable development. This trend is expected to continue as manufacturers seek to reduce their carbon footprint.

The major types of ADN production routes are:

- Butadiene Route
- Acrylonitrile Route

In the Butadiene Route, butadiene reacts with hydrogen cyanide to produce adiponitrile. The Acrylonitrile Route involves the conversion of propylene to acrylonitrile and subsequent reaction with hydrogen cyanide, leading to the formation of adiponitrile. These routes have their respective advantages and disadvantages, and companies use them based on their preference, cost-effectiveness, and scale of production.

ADN (Adiponitrile) is a key component in the production of engineering plastics like Nylon 66 and Nylon 610, as well as in the production of hexamethylene diisocyanate (HDI), which is used in the production of polyurethane coatings and adhesives. In the production of Nylon 66, ADN is used as a monomer along with hexamethylenediamine, while in the production of Nylon 610, ADN is used as a monomer along with 1,6-diaminohexane. ADN is also used in the production of HDI, which is used in polyurethane coatings for automobiles and industrial equipment.

The ADN (Adiponitrile) market is expected to experience substantial growth during the forecast period of 2023 to 2030 in all major regions, including North America, Asia-Pacific, Europe, USA, and China. North America is expected to hold a significant share of the market owing to the growth of the chemical industry and increasing consumption of ADN in the region. The rising demand for nylon fibers and resins in the automotive and textile industries is driving the growth of the APAC region. Europe is projected to witness significant growth due to an increase in demand for ADN from various end-use industries such as clothing, automotive parts, and electronics. The USA and China also hold a significant share of the ADN market due to the presence of a large number of chemical companies operating in these regions.

ADN (Adiponitrile) Market is a competitive landscape that comprises several leading players, including Invista, Solvay, BASF, Ascend Performance Materials, and Asahi Kasei Corporation. These companies use ADN (Adiponitrile) Market to demonstrate sustainable growth, technology leadership, and operational excellence in the global market.

Some of the notable sales revenue figures of the above-listed companies are:

Invista: \$6.86 billionSolvay: €9.80 billionBASF: €59.14 billion

- Ascend Performance Materials: \$3.25 billion

- Asahi Kasei Corporation: ¥1.81 trillion

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The AlN Ceramic Substrates in Electronic Market is expected to grow from USD 5.60 Billion in 2022 to USD 11.10 Billion by 2030, at a CAGR of 10.31% during the forecast period. The AlN Ceramic Substrates in Electronic target market has been witnessing significant growth over the past few years and is expected to continue growing at a considerable rate in the coming years. The market for AlN Ceramic Substrates in Electronic is mainly driven by the growing demand for technologically advanced and high-performance electronic devices across the globe, which require high thermal conductance, high electrical insulation, and corrosion resistance. The increasing demand for efficient power electronics, LED systems, RF and microwave devices, and optical electronic devices, among others, is contributing to the growth of the AlN Ceramic Substrates in Electronic market

Two types of AIN Ceramic Substrates used in the electronic market are:

- AIN-170
- AIN-200

AlN-170 Ceramic Substrates have a thermal conductivity of 170W/mK, making them ideal for applications that demand higher power density. On the other hand, AlN-200 Ceramic Substrates

have a thermal conductivity of 200W/mK, making them ideal for applications demanding higher thermal resistivity and a high breakdown voltage.

AlN ceramic substrates are used in electronic applications such as IGBT (Insulated Gate Bipolar Transistor) and LED (Light Emitting Diodes). In IGBT, AlN ceramic substrates are used as insulation material due to their high thermal conductivity and excellent electrical insulation properties. This allows for efficient heat dissipation and reliable operation at high power levels. In LED, AlN ceramic substrates are used as a base material due to their good thermal conductivity, high reflectivity, and good electrical insulation properties. This improves the efficiency and lifespan of the LED.

The Asia-Pacific region is expected to dominate the AIN Ceramic Substrates in Electronic market due to the growing demand for advanced electronics and semiconductor devices in countries like China, Japan, and South Korea. The region is expected to have a market share of around 45% in 2021. North America and Europe are also expected to hold a significant share in the AIN Ceramic Substrates in Electronic market. North America is expected to have a market share of around 25%, while Europe is expected to have a market share of around 20% in 2021. Other regions such as Latin America and the Middle East & Africa are also expected to have a small but growing market share in the AIN Ceramic Substrates in Electronic market.

Here is an overview of the companies operating in AlN ceramic substrates in the electronics market:

- Maruwa: Maruwa is a leading manufacturer of electronic components, with a strong focus on ceramic substrates. They specialize in AlN ceramic substrates for power modules, RF components, and LED applications. Maruwa has a strong reputation for producing high-quality substrates, and their products find applications in various industries such as automotive, renewable energy, and telecommunications.
- Rogers/Curamik: Rogers/Curamik is a leading supplier of ceramic substrates and components for power electronics, telecom, and automotive applications. They produce AlN ceramic substrates with high thermal conductivity and low dielectric loss, enabling high-frequency performance. Rogers/Curamik has a global presence and serves customers in over 75 countries.
- Sales revenue figures (in million USD):

- Maruwa: 521

- Rogers/Curamik: 216

- CoorsTek: 1,300

- Toshiba Materials: 1,622

- Ferrotec: 996

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The Aluminum Foil for Lithium-ion Battery Market is expected to grow from USD 730.60 Million in 2022 to USD 2205.90 Million by 2030, at a CAGR of 17.10% during the forecast period. The Aluminum Foil for Lithium-ion Battery market is projected to experience significant growth in the coming years. This can be attributed to the increasing demand for Lithium-ion batteries across various industries such as automotive, electronics, and energy storage systems. The Aluminum Foil for Lithium-ion Battery is utilized as a separator for the anode and cathode, which enhances the efficiency and safety of the battery. The growing demand for electric vehicles and the increasing need for energy storage systems are some of the major factors propelling the growth of the Aluminum Foil for Lithium-ion Battery market. The latest trends in the Aluminum Foil for Lithium-ion Battery market include the adoption of thinner and lighter aluminum foil to improve battery performance, as well as the introduction of sustainable and eco-friendly products.

There are various types of aluminum foil used in the market, including:

- 1235 Type
- 1060 Type
- 1050 Type

The 1235 Type is a high-purity aluminum foil that has excellent electrical conductivity, which makes it suitable for high-performance lithium-ion batteries. The 1060 Type, on the other hand, has high plasticity, corrosion resistance, and excellent conductivity, making it ideal for capacitors, electronic labels, and other electronic components. Lastly, the 1050 Type is a non-heat-treatable aluminum alloy foil that is well-suited for applications that require high formability, but low strength, including battery case, heat sink, and lighting.

Aluminum foil is widely used in Lithium-ion batteries as a current collector due to its excellent electrical conductivity, high surface area, and low weight. It is used in power Lithium-ion batteries for electric vehicles and hybrid vehicles, energy storage Lithium-ion batteries for grid applications, and consumer Lithium-ion batteries for smartphones, laptops, and other portable devices. In Lithium-ion batteries, Aluminum foil acts as the negative electrode current collector, which facilitates the transfer of electrons between the negative electrode and the external circuit.

The market share of North America and Europe is expected to be around 25% and 20%, respectively, by the end of the forecast period, while the rest of the world is expected to hold a market share of around 5%.

The global aluminum foil for lithium-ion battery market is highly competitive, with several key players vying for market share. Some of the leading companies operating in this market include Ding Sheng New Material, Mtalco, UACJ, LOTTE, Nanshan, Toyo, Alcha, Yunnan Aluminium, DONG-IL Aluminium, Wanshun New Material, SAM-A, CSAC, Symetal.

Ding Sheng New Material is a leading player in the aluminum foil for lithium-ion battery market, with a focus on developing high-quality aluminum foil that meets customer requirements. The company's sales revenue was USD 425 million in 2020. Mtalco is another major player in this market, offering a range of aluminum products, including foil for lithium-ion batteries. The company's sales revenue was USD 384 million in 2020.UACJ is also among the key players in this market, offering high-performance aluminum products for various applications, including lithium-ion batteries. The company's sales revenue was USD 3.6 billion in 2020.

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