GLOSSARY OF TECHNICAL TERMS

This glossary contains explanations of certain terms, definitions and abbreviations used in this document in connection with our Group and our business. The terms and their meanings may not correspond to standard industry meaning or usage of those terms.

"5G"	a mobile communications standard intended to replace 4G, allowing wireless internet access at a much higher speed.
"6G"	the next evolution of cellular technology after 5G, promising significantly faster speeds, lower latency (down to microseconds), higher capacity, and enhanced intelligence by integrating technologies like AI, sensing, and quantum computing
"AI"	a technology that enables computers and machines to simulate human learning, comprehension, problem solving, decision making, creativity and autonomy
"anode current collector"	a highly conductive metal foil that serves as a structural support and electrical pathway for the anode's active material, connecting it to the battery's external circuit to facilitate electron flow during charging and discharging
"automotive electronics"	electronic systems used in vehicles, including engine management, ignition, radio, carputers, telematics, in-car entertainment systems, and others
"battery energy density"	the amount of energy a battery stores relative to its weight or size, indicating how much power fits into a compact, light package
"CAGR"	compound annual growth rate
"carrier copper foil"	an ultra-thin copper foil supported by a peelable carrier, used to facilitate the fabrication of fine-line circuits in HDI PCB and IC substrate manufacturing
"cathode copper"	a high-purity, rectangular plate of refined copper
"cathode drum surface"	the ultra-smooth, precisely engineered surface of a large rotating drum, typically made of titanium, used in electrodeposited copper foil manufacturing
"cathode roller"	a crucial component, typically a large, precision-engineered cylinder (often titanium-copper-steel composite) used in producing lithium-ion battery electrodes and electrolytic copper foil, acting as the cathode surface where metal ions plate to form a uniform foil layer
"CCL"	copper clad laminate. A fundamental printed circuit board substrate in printed circuit board manufacturing, is the most widely used and is used to fabricate the boards

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"consumer electronics"	electronic devices such as televisions, computers, or smartphones, bought for personal rather than commercial use
"data centers"	a large group of networked computer servers typically used by organizations for the remote storage, processing, or distribution of large amounts of data
"digital twin"	a digital model of an intended or actual real-world physical product, system, or process that serves as a digital counterpart of it for purposes
"electronic circuit copper foil"	a thin, flexible sheet of pure copper used as the conductive layer in printed circuit boards and other electronic components, forming the pathways that carry electrical signals, connect components, and dissipate heat, owing to copper's excellent conductivity and malleability
"electrolytic copper foil"	a metal foil material produced by electrolyzing a copper sulfate solution to deposit copper ions on the cathode
"energy storage"	the capture of energy produced at one time for use at a later time to reduce imbalances between energy demand and energy production
"ESS"	an energy storage system captures energy produced at one time and stores it for later use, crucial for balancing electricity supply and demand, stabilizing grids, and integrating intermittent renewables like solar and wind power
"eVTOL"	electric vertical tack-off and landing aircraft
"GFA"	gross floor area
"GWh"	gigawatt-hour. A large unit of electrical energy, representing one billion watt-hours or one million kilowatt-hours
"HDI"	high-density interconnect. The cutting-edge technology for the production of printed circuit boards
"high-performance computing"	a technology that uses clusters of powerful processors that work in parallel to process massive, multidimensional data sets and solve complex problems at extremely high speeds
"high-speed communication"	rapid data transmission using technologies like fiber optics, 5G, and advanced wireless/wired protocols, enabling real-time multimedia and remote operations by overcoming latency and bandwidth limitations for demanding applications like telesurgery and digital twins
"HTE"	high-temperature elongation

"HVLP"	hyper-very-low-profile foil. A highly specialized, exceptionally smooth copper foil, often just a few micrometers thick, designed for high-frequency high speed electronics (like 5G/AI) to minimize signal loss, featuring surface roughness typically below 2.5 μm by controlling crystal structure, crucial for high-speed data transmission where traditional rough foils increase resistance due to the skin effect
"integrated circuit" or "IC"	a set of electronic circuits on one small flat piece (or "**chip**") of semiconductor material, usually silicon
"industrial control system"	a general term for hardware and software systems that monitor and control industrial processes, automating operations for efficiency and safety in critical sectors like energy, manufacturing, and water treatment
"IoT"	Internet of things. Physical objects that are embedded with sensors, processing ability, software, and other technologies that connect and exchange data with other devices and systems over the Internet or other communication networks
"lithium batteries"	an efficient and rechargeable energy storage device, serve as a core foundation supporting the energy transition in electric transportation, new power systems, and other fields
"lithium battery copper foil"	a critical functional component of the lithium battery that serves as the anode current collector
"low-altitude economy"	the emerging economic ecosystem centered around activities, businesses, and services conducted at altitudes below 3,000 meters above ground level
"low-voltage"	electrical systems operating at relatively low voltage, generally under 1,000 volts alternating current or 1,500 volts direct current
"LP foil"	low-profile foil. A copper foil with exceptionally smooth surfaces achieved through micro-roughening treatments, reducing signal loss in high-speed applications, with classifications like ultra-low profile having roughness under 1-2 μm, compared to standard foils
"MPa"	megapascal. A unit of pressure or stress in the International System of Units
"multi-metal anode current collector"	an advanced battery component, often a base foil modified with thin layers or porous structures of other metals to improve lithium metal anode performance, providing better lithium plating/stripping, enhanced conductivity, superior stability, and reduced dendrite formation for safer, higher-energy batteries
"NEV"	new energy vehicle. A term used to describe all types of electric vehicles, from battery-powered fully electric vehicles to plug-in hybrid cars

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"new energy materials"	advanced substances engineered for efficient energy capture, conversion, storage, and usage in renewable energy technologies, replacing fossil fuels
"PCB"	printed circuit board. A core material in the electronics industry, supports the development of electronic products toward higher performance, miniaturization, and intelligence
"PDA"	personal digital assistants
"peel strength"	the force per unit width needed to separate two bonded materials at a specific angle and speed, measuring the adhesive's bond strength
"porous copper foil"	a high-surface-area copper material with a 3-dimension porous structure
"RFID"	radio frequency identification
"RTF"	reverse treated electrolytic copper foil. A copper foil that has been roughened to varying degrees on both sides
"Rz"	a surface roughness parameter measuring the average peak-to-valley height
"signal intergrity"	a set of measures of the quality of an electrical signal
"skin effect"	the tendency of an alternating electric current to become distributed within a conductor such that the current density is largest near the surface of the conductor and decreases exponentially with greater depths in the conductor
"solid-liquid batteries"	semi-solid-state battery. An advanced energy storage device that bridges traditional lithium-ion and fully solid-state batteries, using a gel-like or slurry electrolyte to improve safety and energy density, reducing fire risks while offering better performance than liquid batteries
"solid-state batteries"	an electrical battery that uses a solid electrolyte to conduct ions between the electrodes, instead of the liquid or gel polymer electrolytes found in conventional batteries
"STD copper foil"	conventional standard copper foil
"tensile strength"	the maximum stress a material can endure while being stretched or pulled before it breaks or permanently deforms
"UL Solutions"	a global independent safety science company with more than a century of expertise innovating safety solutions