

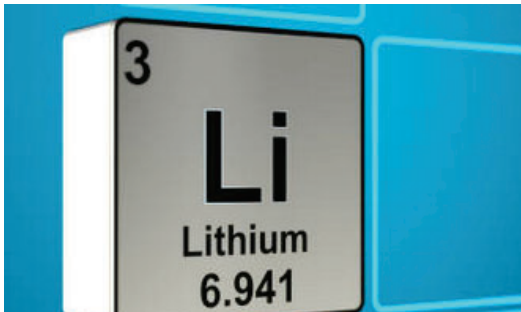


April 2024

What's New

Information and updates on our people, products, and applications.

ncestainlessplate.com



Stainless steel is ideal for lithium projects requiring:

- Excellent corrosion resistance
- Reduced maintenance costs in service
- Improved process reliability/up time
- Long service life, low life-cycle cost

New Castle Stainless Plate can produce plate to exact dimensions in wider and longer sizes than any domestic producer. This translates into minimal additional fabrication and fewer welds for tanks, vessels, columns, and piping applications. Fewer welds can result in welding-related savings of time and material.

New Market for Stainless: Lithium

Lithium production and processing have been filling headlines in the past few years. Lithium, once refined, is used to produce cathode materials for lithium-ion batteries which are used to power electric vehicles (EVs).

In March, the DOE announced a \$2.26 billion commitment to a lithium mining and lithium carbonate processing plant in northern Nevada (Lithium Americas' Thacker Pass project). The project also has a \$650 million investment from General Motors with an exclusive product off-take agreement for GM's EV battery requirements.

In some cases, lithium can also be extracted from geothermal brine with minimal waste or carbon pollution. California's Salton Sea is one potential source for up to 600,000 tons of lithium annually, according to the California Energy Commission. In November, 2022, the DOE announced a \$12 million funding opportunity to advance the science of safe, cost-efficient lithium extraction and refining from geothermal brines.

Corrosion resistance

Lithium mining and processing, whether involving clay, hard rock, or brines tend to present highly corrosive environments. "There are significant corrosion challenges during the handling and refining processes related to lithium, and this is where we are seeing growing demand for stainless steel," Palermo added. Most of this demand involves 316L, duplex grades, and nickel alloys.

"With our combination of high-performance grades and dimensional advantages, we expect to be a steady supplier of material for the supply chain build out of the booming U. S. lithium market," concluded Palermo.



DOE Funding for Lithium Mining

In March 2024, the U.S. Department of Energy announced plans to lend up to \$2.26 billion for the construction of a lithium carbonate processing plant. The conditional commitment to Lithium Americas is specifically for the Thacker Pass plant in Humboldt County, Nevada, which is adjacent to a lithium mine site.

According to a DOE press release, the site contains “the largest-proven lithium reserves in North America.” The facility is expected to produce 40,000 MT of battery-grade lithium carbonate annually. Lithium carbonate is essential to the domestic manufacturing of lithium-ion batteries to power electric vehicles (EV).

General Motors is making an equity investment in the project and will be a long-term buyer of the facility’s lithium carbonate which could support the production of batteries to propel about 800,000 EVs a year. The DOE estimates this could off-set up to 317 million gallons of gasoline annually. As the DOE press release stated, “Developing this project will strengthen domestic battery supply chains and reduce reliance on unreliable foreign sources.”

[Learn more at the DOE website.](#)



The U. S. government is funding significant lithium projects.

DOD Commits to Lithium Mining

Less than six months before the U. S. Department of Energy’s announcement regarding lithium mining in Nevada, the U. S. Department of Defense (DOD) committed to funding for similar purposes. In September 2023, the DOD entered into an agreement with Albemarle Corporation to support the re-opening of their Kings Mountain, North Carolina lithium mine. The \$90 million commitment is the continuation of a five-year investment plan to secure supply chains for minerals and materials critical to the DOD and the commercial sector, according to a DOD press release.

Meet Jamie Doubman

Ensuring quality standards are being met both on the shop floor as well as in the testing lab at New Castle Stainless Plate is a top responsibility for Jamie Doubman, our Quality Assurance Manager. Jamie also maintains the NCSP quality certifications such as ISO and PED.

Questions with Jamie Doubman



Birthplace: I was an Air Force baby, born in Sumter, South Carolina.

Personal Motto: "Winning isn't everything, it's the only thing." This is a favorite of mine from Vince Lombardi, although my mom hated it!

Hobbies: I love the swimming pool and fishing. But the best time of all, is the time I spend with my granddaughter.

Favorite Stainless Application: I've always liked the big stainless rail cars.

As a 45-year veteran of the New Castle mill, Jamie understands the importance of upholding the long-standing legacy of quality at the facility. "Quality is important because we deliver a product to our customers that must meet industry specifications as well as customer requirements and satisfy their application needs," noted Doubman.



NCSP Supports Vocational Students

For more than a decade the New Castle Stainless Plant mill has been hosting local students from the New Castle High School's vocational career center. "One of the teachers there, Dave Allen, used to work at our facility. Now he is sharing the mill tour experience with local students," explained Tony Stewart, Inside Sales Manager at New Castle Stainless Plate.

The students, usually a group of about a dozen, get an overview presentation about the mill and how stainless is made. Then everyone puts on personal protection equipment and steps onto the mill floor. "During the tour, we focus on the machinery used in our mill operations," noted Stewart. The tour highlight is seeing the student's reactions to the size of the NCSP operations.

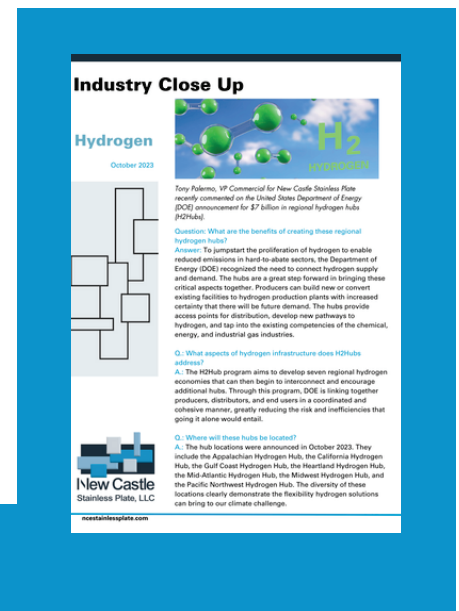
The high school has about 1,000 students in a community of about 18,000 people. Most have never seen a large production facility like our mill. They are always amazed when they experience the making of stainless steel in person!"



Industry Close-Up: Lithium

Following the DOE announcement of a \$2.26 billion loan for the construction of a lithium carbonate processing plant, we reached out to [Tony Palermo, VP Commercial at New Castle Stainless Plate](#) to highlight the impact lithium is having on stainless steel. Here is an excerpt from our conversation: "Processes to produce lithium carbonate or lithium hydroxide vary significantly depending on the nature of the lithium deposit, but most all are highly corrosive. . . In all these applications the corrosion conditions vary widely as does the materials required to reliably and economically protect against corrosion."

[Read the entire interview on our website.](#)



Stainless Steel for Lithium Environments

New Castle Stainless Plate provides a number of important corrosion resisting grades for various applications relating to the mining, extraction, processing, and storage of lithium. These grades include 304, 316L, 2304, 2205, and 2507. Specifiers are advised to consult the New Castle Stainless Plate website and our product datasheets for more details about each grade.

304/304L is a versatile, general purpose stainless steel with good resistance to atmospheric corrosion as well as organic and inorganic chemicals.

316/316L is intended to provide improved corrosion resistance relative to 304/304L in moderately corrosive process environments, particularly those containing chlorides or other halides.

2304 is a lean duplex, combining good corrosion resistance and stress corrosion cracking resistance with high mechanical strength.

2205 is our most popular duplex grade, combining excellent resistance to corrosion and stress corrosion cracking with high mechanical strength.

2507 is a super duplex, with higher corrosion resistance and mechanical strength than 2205. This grade is often used in extremely corrosive environments such as desalination, chemical, or offshore applications.

304L 316L

2304 2205 2507

What's New is published by New Castle Stainless Plate, LLC. Please tell us how we are doing and share your comments and suggestion for future articles. Send your feedback to :

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