

The 435,000 Oregon Jobs in the Nickel Value Chain Pay 11% Above State Average



Sources: Analysis of data for Oregon from Oregon Employment Department (2017) and U.S. Census Bureau, County Business Patterns (2015)

More than 435,000 good, high-paying jobs in Oregon, nearly 1/3 of all non-government jobs in the State, are in industries where the use of nickel is critical.

Nickel is very widely used in Oregon in the form of stainless steel, other nickel-containing metal alloys, surface coatings, and castings. These initial nickel-containing materials are then transformed into a wide variety of parts or products used in key sectors of Oregon's economy, including transportation, electronics, machinery and equipment, food and beverage, construction, health care, and advanced metals manufacturing. Some sample nickel-containing products include: jet engines and combustion turbines; corrosion-resistant surfaces and implements for medical, food and beverage and other uses where maintaining hygiene and sterility is essential; screws, coatings, valves, tanks, flanges, connectors, catalysts and machinery for industrial uses; chips and electronic circuit boards; rechargeable batteries; many structural, functional or decorative pieces used in construction; jewelry, watches, scissors and eyeglasses; many appliances; and, yes, even our 5-cent coins.

Materials that contain nickel are so widely used because -- compared with other materials -- they offer better corrosion resistance, better toughness, better strength at high and low temperatures, better appearance, better ductility, and a range of special magnetic and electronic properties.

From an economic perspective, the industries for which use of nickel-containing materials is critical account for nearly 1/3 of Oregon's jobs outside of government.* Major Oregon employers for whom it is important to use substantial quantities of nickel-containing materials include such recognizable names as: Intel, Oregon Health & Science University, Daimler Trucks, Boeing, Samaritan Health Services, Portland International Airport, and virtually any restaurant, food or beverage company one can think

* The Oregon Employment Department estimates as of June, 2017, that there were 1.9 million persons employed in the State, with 1.6 million of these jobs (84%) in private industry and 300,000 (16%) in Federal, State or local governments. For our analysis in this brochure, we've used a Federal database as well as the State's. Although the Federal data for Oregon is less recent (2015), the Federal data provides a finer breakout of individual industries (6-digit NAICS rather than 5-digit) which is particularly useful in evaluating an industry's reliance on nickel. The Federal data shows 1.48 million private industry jobs in Oregon, and this is the total against which we compare the 435,000 OR jobs in 2015 that are in nickel-critical industries. We've defined nickel as critical to an industry if the industry uses a large volume of nickel or nickel-containing materials and enjoys large advantages in performance and cost over other non-nickel materials and products that the industry might use instead.

of. These large Oregon employers and large users of nickel-containing materials and products depend on a supply chain of usually smaller but technically sophisticated, preferably local, providers.

While the total number of Oregon jobs in industries that depend on nickel is impressive, one should note also that these jobs in nickel-critical industries are, by and large, very good jobs. Average wages in Oregon in the nickel-critical industries are about 11% higher than average wages in Oregon's other industries. Excluding the relatively lower wage food and beverage service industries (e.g., restaurants and bars), jobs in Oregon's other nickel-critical industries pay average wages that are nearly double (85% higher than) those across Oregon's other non-government jobs.

Nickel-critical health care, construction, food and beverage, electronics, transport, and advanced metals manufacturing are all growing industries in Oregon -- even more good jobs will exist in these industries in the future than now. Over the last ten years both employment and average wages in Oregon in the nickel-critical industries have increased by a couple of percentage points more than they have increased in Oregon's other industries. The outlook for most of the nickel-critical industries in Oregon is particularly bright. Advanced metal manufacturing is increasingly being re-shored from Asia and Mexico back to the U.S. The need for health care services is growing rapidly with the aging of our population. The demand for food and beverage services is increasing with population growth and increasing disposable incomes. The coming effort to revitalize our infrastructure will emphasize longer asset lives and enhanced corrosion protection with nickel-based coatings and alloys.

Oregon should not discourage the use of nickel and the continued vitality of the State's nickel-critical industries by setting emission standards that are much tighter than necessary to protect human health and the environment.