

## NICKEL

Nickel is a silver-grey, shiny metal. It has density of approximately 9 kg/dm<sup>3</sup> and melting point about 1455°C.



Nickel is believed to be the fifth most abundant element of the Earth but in Earth's crust it has an average concentration of approximately 80 ppm (parts per million or mg/kg). In recent and actual sediments the concentration is very variable: 300 ppm in the ocean floor of the Pacific Ocean, 40 ppm in the sediments of the Mediterranean Sea.

Nickel is essential for some form of plant life. Natural levels of nickel in the environment is vary variable with geographic location. In Europe, the concentration in freshwater of rivers and lakes, ranges between 0.3 and 5.5 µg/l (micrograms per litre) whereas in seawater ranges between 0.5 and 7 µg/l.

### INDUSTRIAL USE OF NICKEL



The European Union uses about 0.7 million tonnes per year of nickel. Most of it goes into stainless steel alloys, only about 18,000 t are used for electroplating coating. Nickel is an essential component that can not be replaced of a huge number of irrevocable products, from the nail to tankers. It is impossible to conceive the modern World without nickel.

### RECYCLE OF NICKEL

Nickel-containing steel and alloys resist to corrosion and products made of them have extremely long life. At the end of their life-cycle, most nickelcontaining articles are still intact and identifiable and easily selected within the differentiated waste reclamation.

Reclaimed scrap (about 25%), as old as tenths of years, and industrial scrap (about 35%) together with ore from mine production (about 40%) are, today, the "primary" material for the production of stainless steel.

Recycling steel and nickel alloys means to save energy (about 70 % less compared with primary production), water, iron and nickel ore, coke, as well as other raw materials.



Most of nickel is recycled as stainless steel. Only very little nickel is recycled as nickel.