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| **What are minerals used for?**

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| **by Carl Ege**The importance of minerals in everyday life is hardly recognized by the vast majority of people. According to the U.S. Bureau of Mines, the average person consumes or uses 40,000 pounds of minerals every year. Over the course of a lifetime, an individual will use more than 1,050 pounds of lead, 1,050 pounds of zinc, 1,750 pounds of copper, 4,550 pounds of aluminum, 91,000 pounds of iron and steel, 360,500 pounds of coal, and one million pounds of industrial minerals such as limestone, clay, and gravel.To help illustrate how important minerals are to us, perhaps a trip through a normal working day of a geologist will better explain our reliance on minerals.**Morning:** As we wake up in the morning from a restless night of sleep - dreaming of piles of paperwork at the office, we turn off our alarm clock (manufactured from limestone, mica, talc, silica, and clays). After getting out of bed (bed frame and bed springs made from iron and nickel), we make our way into the kitchen. We turn on the electric light switch (copper, aluminum, and petroleum products) and the coffee pot, which is made of glass or ceramics (silica sand, limestone, talc, and feldspar). While waiting for the coffee (coffee beans fertilized with phosphate) to brew, we sit down on a chair (aluminum and petroleum products) and read the local newspaper (kaolin clay, limestone, sodium sulfate, and soda ash). As usual, we don’t find any interesting articles concerning geology so we daydream of the time when we can finally try out our new pair of skis (graphite) and boots (limestone, talc, clay, mica, and petroleum products). Thinking about what happened to our previous pair of skis (broken in half after they fell out of the ski rack and were run over by a truck on the freeway), we develop an upset stomach. We decide to take Milk of Magnesia (magnesium and dolomite) or Kaopectate (kaolin clay) for relief of our upset stomach. We look up at the clock (silica sand, steel, and petroleum products) and hurry upstairs on the bright neon green carpeted floor (limestone, selenium, and petroleum products). We jump in the shower (made of ceramic tiles that are composed of silica sand, limestone, talc, and feldspar) and turn on the water (softened by halite). We adjust the shower head and turn the water faucets (iron, nickel, chromium) for warm water. Remembering that this house has no warm water, we take a quick cold shower, using soap (talc) and shampoo (coal tar, lithium clays, and selenium) to clean ourselves. We get out of the shower and brush our teeth with a toothbrush (limestone, mica, talc, clays, and petroleum products) and toothpaste (limestone, phosphate, gypsum, selenite, fluorite, and dolomite).**On the way to work:** The truck we drive is composed of many different components that were manufactured from minerals. The tires are made from limestone and clay. All of the glass in the truck is made from silica sand and feldspar. The rusted body of the truck (including the bumper) is made from iron, limestone, mica, talc, silica, clays and petroleum products. The automobile engine and other components under the hood are made out of iron, lead, molybdenum, chromium, nickel, aluminum, and zinc. The red paint flaking off of our truck is made of titanium, kaolin clays, mica, talc, gypsum, sulfur, silica, and limestone.**At work in the field:** First, we decide to use our laptop computer (gold, silica, nickel, aluminum, zinc, iron, petroleum products, and thirty other minerals) and digital topographic map software on CD-ROM (aluminum and petroleum products) to help guide us to the correct field location. Once we get to the field area, we begin by pulling out a field notebook (kaolin clay, limestone, and soda ash). We begin writing preliminary information, such as latitude/ longitude coordinates we obtained from our Global Positioning System (silica, mica, clay, limestone, and talc) with our pencil (graphite and clays) or pen (limestone, mica, clays, silica, talc, and petroleum products). We see an interesting rock and decide to use our hammer (iron and nickel) and break off a chunk for analysis. For safety, we put on our safety goggles (silica, talc, clays, and mica). We get out our hand lens (iron ore and silica) and view the mineral content of the rock closely. Next, we find our hydrochloric acid (halite) to test for the calcium carbonate content of the minerals. We also pull out our ceramic scratch plate (silica sand, limestone, talc, lithium, and feldspar) to check the streak of the mineral. Finally, we decide to use our camera (silica and petroleum products) and film (silver and petroleum products) and take several pictures of the rock outcrop. When we feel like we have analyzed the outcrop thoroughly, we load up the truck and head for home.**Evening:** When we get home at night, we decide to warm up a meal in the microwave oven (silica, copper, gold, iron, and nickel) and enjoy some refreshments (filtered through perlite or diatomite). These refreshments are served in a glass or ceramic mug (silica, limestone, and feldspar). Our day ends with us falling asleep in front of the television (silica, iron, copper, aluminum, and nickel).**In summary:** A day in the life of a geologist may seem a little strange to some, but there are similarities among all of us in other professions or fields. Everyone relies heavily on minerals to do their job and in their daily life. So, the next time you drive a car or work on the computer at the office, think about how important minerals are to us. What would we do without them?Glad You Asked article, [*Survey Notes*](http://geology.utah.gov/surveynotes/index.htm), v. 34 no. 2, June 2002<http://geology.utah.gov/surveynotes/gladasked/gladminused.htm> |

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