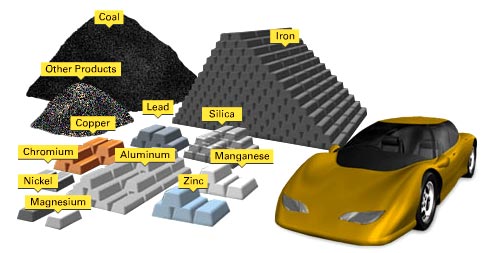
TITLE: Mining a Car  
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These are the mining products used to build a 3,000 lb car.



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| Mineral | Weight | Description | Uses |
| Aluminum | 240 lb. | This strong, lightweight metal is a major component of some car bodies. | Frame and body (on cars with aluminum bodies) Electrical wiring Wheels Lamps Metallic flake paint Transmission Air conditioner condenser and pipes Engine parts (pistons, radiator, cylinder head) Magnets (for speedometers, tachometers, air bags) |
| Chromium | 15 lb. | Valued because it is corrosion-resistant, chromium is an important component of stainless steel. Major ore mineral: chromite | Stainless steel in exhaust system Chrome-plated trim and bumpers |
| Coal | 2,813 lb. | Coal is used as a source of energy in extracting metals from ores and in assembling an automobile; coking coal is used in iron and steel production. | Production of metals from ores (amount required: 2,383 lb.) Energy to assemble automobile (amount required: 430 lb.) |
| Copper | 42 lb. | This metal is used in wiring and is a component of brass. | Electrical wiring Brass in steel-belted tires Bushings Brass in radiator |
| Iron | 2,124 lb. | Iron is the major component of steel, used to make the bodies and frames of most cars. Major iron ore minerals: hematite, magnetite, goethite | Fuel tank Steel in frame, roof, side panels, hood (on cars with steel bodies) Engine block Drive sprockets Pumps Axles Brakes Parking brake, gears and cables |
| Lead | 24 lb. | The major use of lead is in car batteries, but it is also used for tire weights and pendulums in self-tightening seat belts. Major lead ores: galena, anglesite, cerussite. | Seat belt weight pendulums Tire balance weights Battery |
| Magnesium | 4.5 lb. | This lightweight metal is used in specialty alloys. Major ore minerals: magnesite, dolomite; also derived from seawater/brines | Front seat structures Wheels Transmission housing Valve covers Alloys for engine block |
| Manganese | 17 lb. | This metal is an important ingredient in steel. Major manganese ore minerals: braunite, manganite, pyrolusite, hausmannite | Fuel Tank Springs and axles Engine parts Valve covers Exhaust manifold Connecting rods Transmission |
| Nickel | 9 lb. | Nickel is used in stainless steel and in specialty magnets in gauges and switches. Major nickel ore minerals: pentlandite, ni-pyrrhotite | Magnets (for speedometer, tachometer, air bags, automatic braking system, voltmeter, thermostats) Stainless steel for exhaust system |
| Quartz | 130 lb. | Used to make glass, quartz is also a source of silicon for electronic components. All steel contains some silicon. Major ore mineral: quartz (sand and rock crystal) | Clock and other time-keeping devices Silicon in computer chips Fiberglass trim and molding Spark plugs Bumpers Lamp glass Lubricants Auto glass Instrument panel |
| Zinc | 22 lb. | This metal is a galvanizing agent used to prevent rust. It is also a major component of brass. | Fuel tank Springs and axles Brass in steel-belted radial tires Transmission Brass in radiator Engine parts Valve covers Connecting rods Exhaust manifold Die castings |

Other Products

Numerous other mineral products are used to build a car. Many are present only in small amounts but are critical for the car’s safe operation.

Plastics: 250lb  
Uses: upholstery, dashboard, steering, wheel, bumpers, console, and more

Rubber: 140 lb  
Uses: tires, bumpers, hoses, seals, gaskets, wipers, and more

Sulfur: 1-2 lb  
Use: rubber in tires

Vanadium: 1-3 lb  
Use: component in high-strength steel

Antimony: 1 lb  
Use: hardener in lead batteries

Asbestos: 4 lb  
Uses: brake and clutch pads

Gold: less than 0.1 troy oz  
Uses: electrical contacts for automatic braking system, airbags, and computer circuit boards

Platinum: less than 0.1 troy oz  
Uses: catalytic converter, spark plugs

Other Mineral Products (all less than 1 lb)  
Barium, Cadmium, Cobalt, Gallium, Graphite, Halite, Silver, Strontium, Tin, Titanium, Tungsten, Wollastonite, Zirconium

Source: http://www.mnh.si.edu/earth/text/3\_3\_2\_1.html#quartz