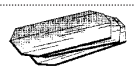
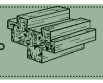
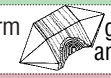
# Properties of Common Minerals

| LUSTER | HARD-NESS | CLEAVAGE | FRACTURE | COMMON COLORS | DISTINGUISHING CHARACTERISTICS | USE(S) | MINERAL NAME | COMPOSITION* |
|---|---|---|---|---|---|---|---|---|
| Metallic Luster | 1–2 | ✔ | | silver to gray | black streak, greasy feel | pencil lead, lubricants | **Graphite** | C |
| | 2.5 | ✔ | | metallic silver | very dense (7.6 g/cm$^3$), gray-black streak  | ore of lead | **Galena** | PbS |
| | 5.5–6.5 | | ✔ | black to silver | attracted by magnet, black streak | ore of iron | **Magnetite** | $Fe_3O_4$ |
| | 6.5 | | ✔ | brassy yellow | green-black streak, cubic crystals  | ore of sulfur | **Pyrite** | $FeS_2$ |
| Either | 1–6.5 | | ✔ | metallic silver or earthy red | red-brown streak | ore of iron | **Hematite** | $Fe_2O_3$ |
| Nonmetallic Luster | 1 | ✔ | | white to green | greasy feel | talcum powder, soapstone | **Talc** | $Mg_3Si_4O_{10}(OH)_2$ |
| | 2 | | ✔ | yellow to amber | easily melted, may smell | vulcanize rubber, sulfuric acid | **Sulfur** | S |
| | 2 | ✔ | | white to pink or gray | easily scratched by fingernail | plaster of paris and drywall | **Gypsum** (Selenite) | $CaSO_4 \cdot 2H_2O$ |
| | 2–2.5 | ✔ | | colorless to yellow | flexible in thin sheets  | electrical insulator | **Muscovite Mica** | $KAl_3Si_3O_{10}(OH)_2$ |
| | 2.5 | ✔ | | colorless to white | cubic cleavage, salty taste  | food additive, melts ice | **Halite** | NaCl |
| | 2.5–3 | ✔ | | black to dark brown | flexible in thin sheets  | electrical insulator | **Biotite Mica** | $K(Mg,Fe)_3 AlSi_3O_{10}(OH)_2$ |
| | 3 | ✔ | | colorless or variable | bubbles with acid  | cement, polarizing prisms | **Calcite** | $CaCO_3$ |
| | 3.5 | ✔ | | colorless or variable | bubbles with acid when powdered | source of magnesium | **Dolomite** | $CaMg(CO_3)_2$ |
| | 4 | ✔ | | colorless or variable | cleaves in 4 directions | hydrofluoric acid | **Fluorite** | $CaF_2$ |
| | 5–6 | ✔ | | black to dark green | cleaves in 2 directions at 90°  | mineral collections | **Pyroxene** (commonly Augite) | (Ca,Na) (Mg,Fe,Al) $(Si,Al)_2O_6$ |
| | 5.5 | ✔ | | black to dark green | cleaves at 56° and 124°  | mineral collections | **Amphiboles** (commonly Hornblende) | $CaNa(Mg,Fe)_4$ $(Al,Fe,Ti)_3$ $Si_6O_{22}(O,OH)_2$ |
| | 6 | ✔ | | white to pink | cleaves in 2 directions at 90° | ceramics and glass | **Potassium Feldspar** (Orthoclase) | $KAlSi_3O_8$ |
| | 6 | ✔ | | white to gray | cleaves in 2 directions, striations visible | ceramics and glass | **Plagioclase Feldspar** (Na-Ca Feldspar) | $(Na,Ca)AlSi_3O_8$ |
| | 6.5 | | ✔ | green to gray or brown | commonly light green and granular | furnace bricks and jewelry | **Olivine** | $(Fe,Mg)_2SiO_4$ |
| | 7 | | ✔ | colorless or variable | glassy luster, may form hexagonal crystals  | glass, jewelry, and electronics | **Quartz** | $SiO_2$ |
| | 7 | | ✔ | dark red to green | glassy luster, often seen as red grains in NYS metamorphic rocks | jewelry and abrasives | **Garnet** (commonly Almandine) | $Fe_3Al_2Si_3O_{12}$ |

*Chemical Symbols:

| | | | | |
|---|---|---|---|---|
| Al = aluminum | Cl = chlorine | H = hydrogen | Na = sodium | S = sulfur |
| C = carbon | F = fluorine | K = potassium | O = oxygen | Si = silicon |
| Ca = calcium | Fe = iron | Mg = magnesium | Pb = lead | Ti = titanium |

✔ = dominant form of breakage