Rare Earth Elements (REE) are a group of 17 metals that cannot be separated into simpler substances by chemical means, which is why they appear together in the periodic table. They occur abundantly on earth but are rarely found in concentrations high enough for economical extraction, thus their REE nickname.

They are soft, malleable, and ductile and usually reactive, especially at elevated temperatures or when finely divided. The rare earth elements’ unique properties are used in a wide variety of applications.

Even green tech generates waste
With fewer than 5% of lithium-ion batteries being recycled worldwide in 2019, for example, we can all reduce e-waste by recycling the REE already mined.

MINERALS ARE CRITICAL TO A RENEWABLE FUTURE

RARE EARTH ELEMENTS
Alaska may hold what the nation needs to innovate for tomorrow

### Rare Earth Minerals in Mobile Devices

**Vibrator**
- Dysprosium
- Neodymium
- Praseodymium
- Terbium

**Color Screen**
- Dysprosium
- Europium
- Lanthanum
- Neodymium
- Praseodymium
- Terbium
- Yttrium

**Glass polishing**
- Cerium
- Lanthanum
- Praseodymium

**Circuit board electronics**
- Dysprosium
- Gadolinium
- Lanthanum
- Neodymium
- Praseodymium

**Speaker**
- Dysprosium
- Neodymium
- Praseodymium
- Terbium