

Identifying Minerals

Minerals can be identified based on their physical properties. The main properties used to identify minerals are described below.



- Colour – comment on colour of mineral (can be unreliable, as some minerals will display more than one colour).
- Lustre – shininess of mineral's surface (described as metallic, dull, earthy).
- Crystal Shape – minerals usually grow in a regular crystal lattice. As minerals get bigger, the shape becomes more evident.
- Streak – colour of powdered mineral, tested by scraping the mineral on a streak plate.
- Hardness – in comparison to minerals as listed on Moh's hardness scale.

- 1 Talc
- 2 Gypsum
- 3 Calcite
- 4 Fluorite
- 5 Apatite
- 6 Orthoclase
- 7 Quartz
- 8 Topaz
- 9 Corundum
- 10 Diamond

- Magnetic – will be attracted to magnet.
- Specific Gravity - ratio of the density of a material when compared to the density of water.

Use the Mineral Properties Factsheet and the physical properties of the unknown samples to help you identify the ten common ore minerals.



Mineral Properties Factsheet

Mineral	Chalcopyrite	Galena	Haematite	Magnetite	Pyrite	Sphalerite	Malachite	Azurite	Magnesite	Bauxite
Property										
Hardness	3.5 - 4	2.5	5.5 – 6.5	5.5 – 6.5	6 – 6.5	3.5 – 4	3.5 - 4	3.5 - 4	3.5 - 5	Varies
Specific Gravity	4.1 – 4.3	7.5	5.2	5.17 – 5.18	4.95 – 5.1	4.1	3.6 - 4	3.83	3 – 3.2	2.5 – 3.2
Colour	Brassy yellow, tarnishes to blues, greens, yellows and purples	Lead grey	Red-brown to black	Black to grey	Brassy yellow	Black/ brown/ yellow	Green	Azure Blue	White	Yellow – red, white to grey
Streak	Dark green to black	Grey	Red-brown	Black	Green to black	Red-brown to white	Green	Light blue	White	White
Lustre	Metallic	Metallic	Metallic	Metallic	Metallic	Resinous	Dull - vitreous	Vitreous	Vitreous	Dull, earthy
Other features	Commonly massive crystal form	Cubic and octahedral crystal shape	Tabular to thick crystals	Magnetic	Cubic form		Crystals may be massive, botryoidal or stalactitic	Crystals may be massive, tabular, stalactitic or prismatic	Crystals usually massive – no distinct shape	