PHYSICAL PROPERTIES OF MINERALS Sample No. 01

**OBSERVATIONS**

|  |  |  |
| --- | --- | --- |
| S.No |  |  |
| 01 | Chemical classification | Silicate |
| 02 | Colour | Green, white, gray, brown, colorless |
| 03 | Streak | White to pale green |
| 04 | Lustre | Pearly |
| 05 | Fracture | Uneven pattern |
| 06 | Cleavage | Perfect |
| 07 | Hardness | 1 |
| 08 | Specific Gravity | 2.7 to 2.8 |
| 09 | Form (Habit) | Usually foliated masses |
| 10 | Diaphaneity | Translucent |
|  |  |  |

**INFERENCE: TALC (**hydrated magnesium silicate)

**THEORITICAL PROPERTIES**

|  |  |  |
| --- | --- | --- |
| 01 | Chemical Composition | Mg3Si4O10(OH)2 |
| 02 | Crystal System | Monoclinic |
| 03 | Nature of Origin | Talc occur naturally and may occur in close proximity in some metamorphic rocks. |
| 04 | Uses | Used as a filler and anti-stick coating in plastics, ceramics, paint, paper, roofing, rubber, cosmetics  It is used as talcum powder and in creams etc. |

PHYSICAL PROPERTIES OF MINERALS Sample No. 02

**OBSERVATIONS**

|  |  |  |
| --- | --- | --- |
| S.No |  |  |
| 01 | Chemical classification | Sulfate |
| 02 | Colour | Clear, colorless, white, gray, yellow, red, brown |
| 03 | Streak | White |
| 04 | Lustre | Vitreous, silky, sugary |
| 05 | Fracture | Concoidal |
| 06 | Cleavage | Perfect |
| 07 | Hardness | 2 |
| 08 | Specific Gravity | 2.3 |
| 09 | Form (Habit) | Tabular or prismatic crystals. Also massive, fibrous and foliated. |
| 10 | Diaphaneity | Transparent to translucent |
|  |  |  |

**INFERENCE: GYPSUM (**Hydrous calcium sulfate)

**THEORITICAL PROPERTIES**

|  |  |  |
| --- | --- | --- |
| 01 | Chemical Composition | CaSO4.2H2O |
| 02 | Crystal System | Monoclinic |
| 03 | Nature of Origin | **Gypsum** is a common mineral, with thick and extensive evaporite beds in association with sedimentary rocks. It is often associated with the minerals halite and sulfur. |
| 04 | Uses | Used to manufacture dry wall, plaster of Paris, joint compound. An agricultural soil treatment, as fertilizer. |

PHYSICAL PROPERTIES OF MINERALS Sample No. 03

**OBSERVATIONS**

|  |  |  |
| --- | --- | --- |
| S.No |  |  |
| 01 | Chemical classification | Carbonate |
| 02 | Colour | Usually white but also colorless, gray, red, green, blue, yellow, brown, orange |
| 03 | Streak | White |
| 04 | Lustre | Vitreous |
| 05 | Fracture | Conchoidal |
| 06 | Cleavage | Perfect, rhombohedral |
| 07 | Hardness | 3 |
| 08 | Specific Gravity | 2.7 |
| 09 | Form (Habit) | Tabular or prismatic |
| 10 | Diaphaneity | Transparent to translucent |
|  |  |  |

**INFERENCE: CALCITE (**Calcium carbonate)

**THEORITICAL PROPERTIES**

|  |  |  |
| --- | --- | --- |
| 01 | Chemical Composition | CaCO3 |
| 02 | Crystal System | Hexagonal |
| 03 | Nature of Origin | Common constituent of [sedimentary rocks](https://en.wikipedia.org/wiki/Sedimentary_rock), [limestone](https://en.wikipedia.org/wiki/Limestone) in particular, often composed of the skeletal fragments of marine organisms such as coral, foraminifera, and molluscs. |
| 04 | Uses | Acid neutralization, a low-hardness abrasive, soil conditioner, heated for the production of lime  Used in manufacture of cement and lime. |

PHYSICAL PROPERTIES OF MINERALS Sample No. 04

**OBSERVATIONS**

|  |  |  |
| --- | --- | --- |
| S.No |  |  |
| 01 | Chemical classification | Halide |
| 02 | Colour | Typically, purple, green, and yellow. Also colorless, blue, red, and black. |
| 03 | Streak | White |
| 04 | Lustre | Vitreous |
| 05 | Fracture | Subconchoidal to uneven |
| 06 | Cleavage | Four directions of perfect cleavage |
| 07 | Hardness | 4 |
| 08 | Specific Gravity | 3.2 |
| 09 | Form (Habit) | Cubic crystals. Also, massive and granular |
| 10 | Diaphaneity | Transparent to translucent |
|  |  |  |

**INFERENCE: FLOURITE (**Calcium fluoride)

**THEORITICAL PROPERTIES**

|  |  |  |
| --- | --- | --- |
| 01 | Chemical Composition | CaF2 |
| 02 | Crystal System | Cubic (Isometric) |
| 03 | Nature of Origin | Commonly found in hydrothermal veins. It is also found associated with galena and sphalerite. |
| 04 | Uses | Numerous uses in the metallurgical, ceramics, and chemical industries. A source of fluorine, hydrofluoric acid, metallurgical flux. High-clarity pieces are used to make lenses for microscopes, telescopes, and cameras. |

PHYSICAL PROPERTIES OF MINERALS Sample No. 05

**OBSERVATIONS**

|  |  |  |
| --- | --- | --- |
| S.No |  |  |
| 01 | Chemical classification | Phosphate |
| 02 | Colour | |  | | --- | | Green, brown, blue, yellow, violet, pink, colorless. Transparent specimens with excellent clarity and vivid color are used as gemstones. | |  | |
| 03 | Streak | White |
| 04 | Lustre | |  | | --- | | Vitreous to sub-resinous | |  | |
| 05 | Fracture | Conchoidal to uneven |
| 06 | Cleavage | |  | | --- | | Poor to indistinct | |  | |
| 07 | Hardness | 5 |
| 08 | Specific Gravity | 3.1-3.3 |
| 09 | Form (Habit) | Long prismatic crystals. Also, massive and granular |
| 10 | Diaphaneity | Transparent to translucent |
|  |  |  |

**INFERENCE: Apatite (**A group of calcium phosphates.)

**THEORITICAL PROPERTIES**

|  |  |  |
| --- | --- | --- |
| 01 | Chemical Composition | Ca5(PO4)3 (F, Cl, OH) |
| 02 | Crystal System | Hexagonal |
| 03 | Nature of Origin | Found in all igneous rocks. Also found in metamorphic and sedimentary rocks. |
| 04 | Uses | Fertilizer, phosphoric acid, hydrofluoric acid, gemstones, ore of rare earth elements, pigments, gemstone. Serves as a hardness of 5 on the Mohs Hardness Scale. |

PHYSICAL PROPERTIES OF MINERALS Sample No. 06

**OBSERVATIONS**

|  |  |  |
| --- | --- | --- |
| S.No |  |  |
| 01 | Chemical classification | Silicate |
| 02 | Colour | |  | | --- | | White, gray, pink, reddish, yellow, green, colorless | |  | |
| 03 | Streak | White |
| 04 | Luster | |  |  |  | | --- | --- | --- | | |  | | --- | | Vitreous, pearly on cleavage faces | |  | | |  | |
| 05 | Fracture | Conchoidal to uneven |
| 06 | Cleavage | |  |  |  | | --- | --- | --- | | |  | | --- | | Perfect in two directions intersecting at 90 degrees | |  | | |  | |
| 07 | Hardness | 6 |
| 08 | Specific Gravity | 2.5-2.6 |
| 09 | Form (Habit) | Grains are commonly elongate with a tabular appearance. |
| 10 | Diaphaneity | Transparent to translucent |
|  |  |  |

**INFERENCE: Orthoclase (**calcium Silicate.)

**THEORITICAL PROPERTIES**

|  |  |  |
| --- | --- | --- |
| 01 | Chemical Composition | KAlSi3O8 |
| 02 | Crystal System | Monoclinic |
| 03 | Nature of Origin | Found in igneous environments such as pegmatites, as well as sedimentary conglomerates. |
| 04 | Uses | Ceramics, glass, abrasives, gemstones, Mohs scale mineral |

PHYSICAL PROPERTIES OF MINERALS Sample No. 07

**OBSERVATIONS**

|  |  |  |
| --- | --- | --- |
| S.No |  |  |
| 01 | Chemical classification | Silicate |
| 02 | Colour | |  |  |  | | --- | --- | --- | | |  | | --- | | Quartz occurs in virtually every color. Common colors are clear, white, gray, purple, yellow, brown, black, pink, green, red. | |  | | |  | |
| 03 | Streak | Colourless |
| 04 | Luster | |  |  |  | | --- | --- | --- | | |  | | --- | | Vitreous | |  | | |  | |
| 05 | Fracture | Conchoidal |
| 06 | Cleavage | |  |  |  | | --- | --- | --- | | |  | | --- | | None - typically breaks with a conchoidal fracture | |  | | |  | |
| 07 | Hardness | 7 |
| 08 | Specific Gravity | 2.6-2.7 |
| 09 | Form (Habit) | Grains are commonly elongate with a tabular appearance. |
| 10 | Diaphaneity | Transparent to translucent |
|  |  |  |

**INFERENCE: Quartz (Silicate**)

**THEORITICAL PROPERTIES**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 01 | Chemical Composition | |  | | --- | | SiO2 | |  | |
| 02 | Crystal System | |  | | --- | | Hexagonal | |  | |
| 03 | Nature of Origin | Quart occurs most in igneous, sedimentary and metamorphic rocks. |
| 04 | Uses | |  | | --- | | Glass making, abrasive, foundry sand, hydraulic fracturing proppant, gemstones | |

PHYSICAL PROPERTIES OF MINERALS Sample No. 08

**OBSERVATIONS**

|  |  |  |
| --- | --- | --- |
| S.No |  |  |
| 01 | Chemical classification | Silicate |
| 02 | Colour | |  |  |  | | --- | --- | --- | | |  | | --- | | Natural colors include: colorless, yellow, orange, brown, red, pink, blue, green. Occurs in a wide range of treated colors, most often blue. | |  | | |  | |
| 03 | Streak | Colorless , White |
| 04 | Luster | |  |  |  | | --- | --- | --- | | |  | | --- | | Vitreous | |  | | |  | |
| 05 | Fracture | [Subconchoidal](https://en.wikipedia.org/wiki/Conchoidal_fracture) to uneven |
| 06 | Cleavage | |  |  |  |  |  | | --- | --- | --- | --- | --- | | |  |  |  | | --- | --- | --- | | |  | | --- | | Perfect basal cleavage. | |  | | |  | | |  | |
| 07 | Hardness | 8 |
| 08 | Specific Gravity | 3.4-3.6 |
| 09 | Form (Habit) | Prismatic crystal |
| 10 | Diaphaneity | Transparent to translucent |
|  |  |  |

**INFERENCE: Topaz (Silicate**)

**THEORITICAL PROPERTIES**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 01 | Chemical Composition | |  | | --- | | Al2SiO4(F,OH)2 | |  | |
| 02 | Crystal System | |  |  |  | | --- | --- | --- | | |  | | --- | | Orthorhombic. | |  | | |  | |
| 03 | Nature of Origin | Topaz is commonly associated with [silicic](https://en.wikipedia.org/wiki/Silicic) igneous rocks of the [granite](https://en.wikipedia.org/wiki/Granite) and [rhyolite](https://en.wikipedia.org/wiki/Rhyolite) type. |
| 04 | Uses | |  | | --- | | Gemstone | |

PHYSICAL PROPERTIES OF MINERALS Sample No. 09

**OBSERVATIONS**

|  |  |  |
| --- | --- | --- |
| S.No |  |  |
| 01 | Chemical classification | |  | | --- | | Oxide | |  | |
| 02 | Colour | |  | | --- | | Typically gray to brown. Colorless when pure, but trace amounts of various metals produce almost any color. Chromium produces red (ruby) and combinations of iron and titanium produce blue (sapphire). | |  | |
| 03 | Streak | Colourless |
| 04 | Lustre | Adamantine to vitreous |
| 05 | Fracture | Subconchoidal to uneven |
| 06 | Cleavage | None |
| 07 | Hardness | 9 |
| 08 | Specific Gravity | 3.9-4.1 |
| 09 | Form (Habit) | Steep bipyramidal, tabular, prismatic, rhombohedral crystals, massive or granular |
| 10 | Diaphaneity | Transparent to translucent |
|  |  |  |

**INFERENCE: Corundum (**Aluminum oxide)

**THEORITICAL PROPERTIES**

|  |  |  |
| --- | --- | --- |
| 01 | Chemical Composition | Al2O3 |
| 02 | Crystal System | |  | | --- | | Hexagonal | |  | |
| 03 | Nature of Origin | Corundum occurs as a mineral in mica [schist](https://en.wikipedia.org/wiki/Schist), [gneiss](https://en.wikipedia.org/wiki/Gneiss), and some [marbles](https://en.wikipedia.org/wiki/Marble) in [metamorphic](https://en.wikipedia.org/wiki/Metamorphic) [terranes](https://en.wikipedia.org/wiki/Terranes).. |
| 04 | Uses | Historically used as an abrasive. Specimens with pleasing colors have a long history of gemstone use.. |

PHYSICAL PROPERTIES OF MINERALS Sample No. 10

**OBSERVATIONS**

|  |  |  |
| --- | --- | --- |
| S.No |  |  |
| 01 | Chemical classification | |  | | --- | | Nativeelement-Carbon | |  | |
| 02 | Colour | |  | | --- | | Most diamonds are brown or yellow in color. The jewelry industry has favored colorless diamonds or those that have a color so subtle that it is difficult to notice. Diamonds in vivid hues of red, orange, green, blue, pink, purple, violet, yellow and other hues are very rare and sell for high prices when the color is spectacular. | |  | |
| 03 | Streak | Colourless |
| 04 | Lustre | Perfect octahedral cleavage in four directions. |
| 05 | Fracture | [Irregular/Uneven](https://en.wikipedia.org/w/index.php?title=Irregular/Uneven&action=edit&redlink=1) |
| 06 | Cleavage | None |
| 07 | Hardness | 10 |
| 08 | Specific Gravity | 3.4-3.6 |
| 09 | Form (Habit) | Octahedral |
| 10 | Diaphaneity | Transparent, translucent, opaque. |
|  |  |  |

**INFERENCE: Diamond (**Carbon)

**THEORITICAL PROPERTIES**

|  |  |  |
| --- | --- | --- |
| 01 | Chemical Composition | C |
| 02 | Crystal System | |  |  |  | | --- | --- | --- | | |  | | --- | | Isometric | |  | | |  | |
| 03 | Nature of Origin | **Diamonds** are found in alluvial (loose earthy material deposited by running water) formations and in volcanic pipes, filled for most of their length with blue ground or kimberlite, an igneous rock consisting largely of serpentine |
| 04 | Uses | Gemstones, industrial abrasives, diamond windows, speaker domes, heat sinks, low-friction microbearings, wear-resistant parts, dies for wire manufacturing. |

PHYSICAL PROPERTIES OF MINERALS Sample No. 11

**OBSERVATIONS**

|  |  |  |
| --- | --- | --- |
| S.No |  |  |
| 01 | Chemical classification | |  | | --- | | Sulfide | |  | |
| 02 | Colour | |  | | --- | | Fresh surfaces are bright silver in color with a bright metallic luster, tarnishes to a dull lead gray | |  | |
| 03 | Streak | Metallic on fresh surfaces, tarnishes dull |
| 04 | Lustre | Metallic on fresh surfaces, tarnishes dull |
| 05 | Fracture | **Subconchoidal** |
| 06 | Cleavage | Perfect, cubic, three directions at right angles |
| 07 | Hardness | 2.5+ |
| 08 | Specific Gravity | 7.4 to 7.6 |
| 09 | Form (Habit) | Occurs [massive](https://www.minerals.net/Mineral_Glossary/massive.aspx), [grainy](https://www.minerals.net/Mineral_Glossary/grainy.aspx), [fibrous](https://www.minerals.net/Mineral_Glossary/fibrous.aspx), [platy](https://www.minerals.net/Mineral_Glossary/platy.aspx), as [vein](https://www.minerals.net/Mineral_Glossary/vein.aspx)s, and as [cleavage fragment](https://www.minerals.net/Mineral_Glossary/cleavage_fragment.aspx)s. |
| 10 | Diaphaneity | Opaque |
|  |  |  |

**INFERENCE: Galena (**Lead Sulphide)

**THEORITICAL PROPERTIES**

|  |  |  |
| --- | --- | --- |
| 01 | Chemical Composition | PbS |
| 02 | Crystal System | |  |  |  | | --- | --- | --- | | |  | | --- | | Isometric | |  | | |  | |
| 03 | Nature of Origin | It is found in [igneous](https://geology.com/rocks/igneous-rocks.shtml) and [metamorphic](https://geology.com/rocks/metamorphic-rocks.shtml) [rocks](https://geology.com/rocks/) in medium- to low-temperature hydrothermal veins. In [sedimentary](https://geology.com/rocks/sedimentary-rocks.shtml) rocks it occurs as veins, [breccia](https://geology.com/rocks/breccia.shtml) cements |
| 04 | Uses | An ore of lead |

PHYSICAL PROPERTIES OF MINERALS Sample No. 12

**OBSERVATIONS**

|  |  |  |
| --- | --- | --- |
| S.No |  |  |
| 01 | Chemical classification | |  | | --- | | Oxide | |  | |
| 02 | Colour | |  | | --- | | Bright-red, maroon, brownish-red, dark red, purplish-red, reddish-black, dark gray | |  | |
| 03 | Streak | Brownish-red |
| 04 | Lustre | [Adamantine](https://www.minerals.net/Mineral_Glossary/Adamantine.aspx) or [submetallic](https://www.minerals.net/Mineral_Glossary/submetallic.aspx) |
| 05 | Fracture | [Uneven](https://www.minerals.net/Mineral_Glossary/Uneven.aspx) |
| 06 | Cleavage | Perfect, 3, all directions |
| 07 | Hardness | 3.5 - 4 |
| 08 | Specific Gravity | 6.1 |
| 09 | Form (Habit) | As masses of tiny elongated needles, [capillary](https://www.minerals.net/Mineral_Glossary/capillary.aspx), [fibrous](https://www.minerals.net/Mineral_Glossary/fibrous.aspx), [radiating](https://www.minerals.net/Mineral_Glossary/radiating.aspx), and [massive](https://www.minerals.net/Mineral_Glossary/massive.aspx) |
| 10 | Diaphaneity | Translucent to opaque |
|  |  |  |

**INFERENCE: Cuprite (**Lead Sulphide)

**THEORITICAL PROPERTIES**

|  |  |  |
| --- | --- | --- |
| 01 | Chemical Composition | Cu2O |
| 02 | Crystal System | |  |  |  | | --- | --- | --- | | |  | | --- | | Isometric | |  | | |  | |
| 03 | Nature of Origin | Cuprite is commonly found as an oxidation product of copper sulphides in the upper zones of veins |
| 04 | Uses | Cuprite is an important collectors mineral, and is a minor [ore](https://www.minerals.net/Mineral_Glossary/ore.aspx) of copper. |

PHYSICAL PROPERTIES OF MINERALS Sample No. 13

**OBSERVATIONS**

|  |  |  |
| --- | --- | --- |
| S.No |  |  |
| 01 | Chemical classification | |  | | --- | | Oxide | |  | |
| 02 | Colour | |  | | --- | | Black to steel-gray to silver; red to reddish brown to black | |  | |
| 03 | Streak | Red to reddish brown |
| 04 | Lustre | Metallic, submetallic, earthy |
| 05 | Fracture | [Uneven](https://www.minerals.net/Mineral_Glossary/Uneven.aspx) |
| 06 | Cleavage | None |
| 07 | Hardness | 5 to 6.5 |
| 08 | Specific Gravity | 5.0 to 5.3 |
| 09 | Form (Habit) | Most commonly [massive](https://www.minerals.net/Mineral_Glossary/massive.aspx), [mammilary](https://www.minerals.net/Mineral_Glossary/mammilary.aspx), [botryoidal](https://www.minerals.net/Mineral_Glossary/botryoidal.aspx), [reniform](https://www.minerals.net/Mineral_Glossary/reniform.aspx), [oolitic](https://www.minerals.net/Mineral_Glossary/oolitic.aspx), [stalactitic](https://www.minerals.net/Mineral_Glossary/stalactitic.aspx), and [radiating](https://www.minerals.net/Mineral_Glossary/radiating.aspx). |
| 10 | Diaphaneity | Opaque |
|  |  |  |

**INFERENCE: Haematite (**Iron Oxide)

**THEORITICAL PROPERTIES**

|  |  |  |
| --- | --- | --- |
| 01 | Chemical Composition | Fe2O3 |
| 02 | Crystal System | |  | | --- | | [Hexagonal](https://www.minerals.net/Mineral_Glossary/Hexagonal.aspx) | |  | |
| 03 | Nature of Origin | It is a common [**rock-forming mineral**](https://geology.com/minerals/rock-forming-minerals/) foundin [**sedimentary**](https://geology.com/rocks/sedimentary-rocks.shtml), [**metamorphic**](https://geology.com/rocks/metamorphic-rocks.shtml), and [**igneous**](https://geology.com/rocks/igneous-rocks.shtml) rocks at locations throughout the world. |
| 04 | Uses | The most important ore of iron. Pigment, heavy media separation, radiation shielding, ballast, polishing compounds, a minor gemstone |

PHYSICAL PROPERTIES OF MINERALS Sample No. 14

**OBSERVATIONS**

|  |  |  |
| --- | --- | --- |
| S.No |  |  |
| 01 | Chemical classification | |  | | --- | | Oxide | |  | |
| 02 | Colour | |  | | --- | | Black to silvery gray | |  | |
| 03 | Streak | Black |
| 04 | Lustre | Metallic, submetallic |
| 05 | Fracture | [Subconchoidal](https://www.minerals.net/Mineral_Glossary/Subconchoidal.aspx) to [uneven](https://www.minerals.net/Mineral_Glossary/uneven.aspx) |
| 06 | Cleavage | None |
| 07 | Hardness | 5 to 6.5 |
| 08 | Specific Gravity | 5.2 |
| 09 | Form (Habit) | Crystals may be [striated](https://www.minerals.net/Mineral_Glossary/striated.aspx), and some [octahedral](https://www.minerals.net/Mineral_Glossary/octahedral.aspx) crystals contain layer growths. Also [drusy](https://www.minerals.net/Mineral_Glossary/drusy.aspx), [grainy](https://www.minerals.net/Mineral_Glossary/grainy.aspx), in [vein](https://www.minerals.net/Mineral_Glossary/vein.aspx)s, as large embedded [grain](https://www.minerals.net/Mineral_Glossary/grain.aspx)s, as rounded crystals, and [massive](https://www.minerals.net/Mineral_Glossary/massive.aspx).. |
| 10 | Diaphaneity | Opaque |
|  |  |  |

**INFERENCE: Magnetite (**Iron Oxide)

**THEORITICAL PROPERTIES**

|  |  |  |
| --- | --- | --- |
| 01 | Chemical Composition | Fe3O4 |
| 02 | Crystal System | |  | | --- | | Isometric | |  | |
| 03 | Nature of Origin | Occurs in [igneous rock](https://www.minerals.net/Mineral_Glossary/igneous_rock.aspx) such as [diabase](https://www.minerals.net/Mineral_Glossary/diabase.aspx), as well as contact and regional [metamorphic](https://www.minerals.net/Mineral_Glossary/metamorphic.aspx) rocks and in [hydrothermal](https://www.minerals.net/Mineral_Glossary/hydrothermal.aspx) replacement deposits. |
| 04 | Uses | The most important ore of iron. Heavy media separation. Studies of Earth's magnetic field. |

PHYSICAL PROPERTIES OF MINERALS Sample No. 15

**OBSERVATIONS**

|  |  |  |
| --- | --- | --- |
| S.No |  |  |
| 01 | Chemical classification | Native element |
| 02 | Colour | |  | | --- | | Steel gray to black | |  | |
| 03 | Streak | Black |
| 04 | Lustre | Metallic, sometimes earthy |
| 05 | Fracture | [Conchoidal](https://www.minerals.net/Mineral_Glossary/Subconchoidal.aspx) |
| 06 | Cleavage | Perfect in one direction |
| 07 | Hardness | 1 to 2 |
| 08 | Specific Gravity | 2.1 to 2.3 |
| 09 | Form (Habit) | Most often occurs as [vein](https://www.minerals.net/Mineral_Glossary/vein.aspx)s, as [foliated](https://www.minerals.net/Mineral_Glossary/foliated.aspx) masses, and in [massive](https://www.minerals.net/Mineral_Glossary/massive.aspx) form. Small, rounded ball-like [aggregate](https://www.minerals.net/Mineral_Glossary/aggregate.aspx)s and [radiating](https://www.minerals.net/Mineral_Glossary/radiating.aspx) spheres also occur, as do rounded, [waterworn](https://www.minerals.net/Mineral_Glossary/waterworn.aspx)pebbles. |
| 10 | Diaphaneity | Opaque |
|  |  |  |

**INFERENCE: Graphite (**Carbon)

**THEORITICAL PROPERTIES**

|  |  |  |
| --- | --- | --- |
| 01 | Chemical Composition | C |
| 02 | Crystal System | |  | | --- | | Hexagonal | |  | |
| 03 | Nature of Origin | Most often in [metamorphic](https://www.minerals.net/Mineral_Glossary/metamorphic.aspx) rock caused from the [metamorphism](https://www.minerals.net/Mineral_Glossary/metamorphism.aspx) of [carbonates](https://www.minerals.net/Mineral_Glossary/carbonates.aspx). Rarely in [pegmatite](https://www.minerals.net/Mineral_Glossary/pegmatite.aspx)s and [hydrothermal](https://www.minerals.net/Mineral_Glossary/hydrothermal.aspx) [vein](https://www.minerals.net/Mineral_Glossary/vein.aspx)s.. |
| 04 | Uses | Used to manufacture heat and chemical resistant containers and other objects. Battery anodes. A dry lubricant. The "lead" in pencils. |