

MINERALS IN TYPICAL COMPUTERS



Computer Component	Element/Compound	Mineral Source of Element
<u>Monitor</u>		
Phosphorescent Coating - Transition Metals:		
ZnS - Zinc Sulfide	Zn, S	Sulfur, Hemmimorphite, Zincite Smithsonite, Franklenite
Ag - Silver	Ag	Ag, Pyrargyrite, Cerargyrite
Cl - Chlorine	Cl	Halite
Al - Aluminum	Al	Bauxite
Cu - Copper	Cu	Chalcopyrite, Boronite, Enargite, Cuprite, Malachite, Azurite, Chrysocolla, Chalcocite
Au - Gold	Au	Gold
Y ₂ O ₂ S - Yittrium Sulfate	Y	
Eu - Europium	Eu	
(KF, MgF ₂): Mn Potasium-Magnesium Floride: Manganese	K, F, Mg, Mn	Alunite, Orthoclase, Nephelite, Leucite, Apophullite; Flourite, Cryolite, Vesuvianite; Lepidolite: Dolomite, Magnesite, Espomite, Spinel, Olivine, Pyrope, Biotite, Talc
(Zn,Cd)S - Zinc Cadmium Sulfate	Cd	
Zn ₂ SiO ₄ :O ₄ : Mn, As - ZincSilicate, Manganese, Arsenic	As	Realgar, Orpiment, Niccolite, Cobalite, Arsenopyrite, Tetrahedrite
Gd ₂ O ₂ S: Tb - Gadolinium Sulfate: Tebrium	Gd, Tb	
Y ₂ SiO ₁₂ :Ce - Yitrium Silicate: Cerium	Ce	Monzanite, Orthite
CRT Glass:		
Pb - Lead	Pb	Galena, Cerussite, Anglesite, Pyromorphite
SiO ₂	Si	Quartz
<u>Plastic Case, Keyboard</u>		
Thermoplastic - Polypropylene, PVC		
CaCO ₂ - additive	Ca	Calcite, Gypsum, Apatite, Aragonite
TiO ₂ - White Pigment	Ti	Rutile, Ilmenite, Titanite
Amonium Polyphosphate	P	Apetite, Pyromorphite, Wavellite

Liquid Crystal Display (LCD) Monitors

Pb - Lead	Pb	Galena, Cerussite, Anglesite, Pyromorphite
Thin Film Transistors	Si	Quartz
Ferro Electric Liquid Crystal	Fe	Hematite
Indium Tin Oxide	Sn	Cassiterite,
	In	Sphalerite (Commonly found with Zinc)

Metal Case

Iron	Fe	Magnetite, Limonite
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Flat Screen Plasma Display Monitors

Glass	Si	Quartz
Pb - Lead	Pb	Galena, Cerussite, Anglesite, Pyromorphite
ZnS - Zinc Sulfide	Zn, S	Sulfur, Hemmimorphite, Zincite, Smithsonian, Franklenite
Ag - Silver	Ag	Ag, Pyrargyrite, Cerargyrite
Cl - Chlorine	Cl	Halite
Al - Aluminum	Al	Bauxite
Cu - Copper	Cu	Chalcopyrite, Boronite, Enargite, Cuprite, Malachite, Azurite, Chryssocolla, Chalcocite
Au - Gold	Au	Gold
Y ₂ O ₂ S - Yittrium Sulfate	Y	Euxenite
Eu - Euopium	Eu	Euxenite
(KF, MgF ₂): Mn Potasium-Magnesium Florite: Manganese	K, F, Mg, Mn	Alunite, Orthoclase, Nephelite, Leucite, Apophullite; Flourite, Cryolite, Vesuvianite; Lepidolite: Dolomite, Magnesite, Espomite, Spinel, Olivine, Pyrope, Biotite, Talc
(Zn, Cd) S - Zinc Cadmium Sulfate	Cd	
Zn ₂ SiO ₄ : Mn, As - ZincSilicate, Manganese, Arsenic	As	Realgar, Orpiment, Niccolite, Cobalite Arsenopyrite, Tetrahedrite
Gd ₂ O ₂ S: Tb - Gadolinium Silicate: Tebrium	Gd, Tb	
Y ₂ SiO ₁₂ : Ce - Yitrium Silicate: Cerium	Ce	Monzanite, Orthite

Printed Circuit Boards, Computer Chips:

Silicon	Si	Quartz
Cu - Copper	Cu	Chalcopyrite, Boronite, Enargite, Cuprite, Malachite, Azurite, Chrysocolla, Chalcocite
Au - Gold	Au	Gold
Ag - Silver	Ag	Ag, Pyrargyrite, Cerargyrite
Tin	Sn	Cassiterite
Al - Aluminum	Al	Bauxite

There are 66 individual minerals that contribute to the typical computer that are identified above. There are others, in addition to those listed above, but it should be evident that without many minerals, there would be no computers, or televisions, for that matter.

Source: Mine-Engineer.com