

# Pigment, Substance & Mineral Table

## Substances:

Name	Comments	AKA	Appearance	Products	Part #
Copper	Some methods demonstrate copper associated protein rather than copper itself		Usually not visible or demonstrated unless found in abnormal pathology	Copper Stain Kit Control Slides	<a href="#">9113</a> <a href="#">4130</a>
Hemosiderin	Prussian Blue reaction stains ferric (+3 ) ions, Turnbull Blue stains ferrous (+2) ions	Iron	Yellow to brown intracellular granules	Iron Stain Kit Control Slides	<a href="#">9136</a> <a href="#">4320, 4321</a>
Hematoidin	Similar to bilirubin often formed as a result of hemorrhage, stains with bile methods but not with iron methods		Ranging in color from bright yellow to yellow brown refractile granules		
Bile	Demonstrated when bilirubin is oxidized to biliverdin in an acid staining environment	Bilirubin	Yellow brown amorphous pigment	Bilirubin Stain Control Slides	<a href="#">Procedure</a> <a href="#">4060</a>
Calcium	Black deposits formed when using silver reactions are due to reduction of silver by organic material followed by exposure to strong light	Calcium phosphate or Calcium carbonate	Stains purple to blue with hematoxylin	Calcium Stain Control Slides	<a href="#">Procedure</a> <a href="#">4100</a>
Urates	Both forms are water soluble, aqueous fixatives should be avoided Absolute ethanol is the fixative of choice <b>Gout</b> - monosodium urate crystals appear yellow when their long axes are aligned parallel to a red compensator filter <b>Pseudogout</b> -calcium pyrophosphate crystals, appear blue when their long axes are aligned parallel to a red compensator filter	Gout - monosodium urate Pseudogout - calcium pyrophosphate	Gout- needle-shaped intracellular and extracellular crystals  Pseudogout - shorter than Gout crystals and are often rhomboidal	Urates Stain Control Slides	<a href="#">Procedure</a> <a href="#">4700</a>
Melanin	Identified by a number of methods can interfere with pathology interpretation if found in large amounts		Brown to black intracellular granules	Fontana Masson Stain Control Slide	<a href="#">9105</a> <a href="#">4430</a>
Lipofusin	Stains variably but usually PAS positive	Wear and Tear pigment	Fine granular yellow brown pigment	PAS Stain Kit	<a href="#">9162</a>

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## Artifacts:

Name	Comments	AKA	Appearance	Removal
Carbon	Inert and unreactive, resists removal procedures, commonly found in lung and mediastinal lymph nodes.	Anthracotic pigment	Black granular	
Melanin	Can become problematic in large amounts and be removed by a variety of methods		Brown to black granular	<a href="#">Tech Memo</a>
Formalin	Formed in unbuffered formalin when pH shifts to acidic, not reactive with iron staining methods		Dark brown crystalline	<a href="#">Tech Memo</a>
Mercury	Deposited as a result of using mercury based fixatives		Brownish black extracellular crystal	<a href="#">Tech Memo</a>