

Fixation Pigments - Recognition and Removal

Pigment	Appearance / context	Common approach	Important note
Formalin pigment (acid hematin)	Brown-black, often in blood-rich tissue after acidic formalin	Validated alcoholic picric acid or alkaline alcohol method	Prevent with neutral buffered formalin and controlled storage.
Mercury pigment	Dark granular deposits after mercury-containing fixatives	Iodine followed by sodium thiosulfate	Confirm local hazardous-waste and reagent controls.
Hemosiderin	Golden-brown endogenous iron	Demonstrate with Prussian blue rather than remove routinely	Do not confuse with fixation artifact.
Melanin	Brown-black endogenous pigment	Bleaching only when diagnostically justified and validated	Bleaching can damage morphology and antigens.
Carbon / tattoo	Black refractile exogenous pigment	Usually retained and interpreted morphologically	Clinical context helps.

Rule: identify the pigment before attempting removal. Run an unstained section and appropriate controls when the distinction matters.