Galena - PbS

Hardness: 2.5. Cleavage: Perfect. Soft; brittle. Easily chipped and cleaved. Sensitive to thermal shock damage. Dust is toxic. Insoluble in water. Rapidly attacked by HCl or HNO_3 causing crystal faces to become dull. Soluble in H_2SO_4. Slightly soluble in cold concentrated citric acid. Remove calcite with dilute acetic acid but this may dull crystal faces of some samples. Insoluble in KOH and ethanol. Tolerates any dithionite recipe for derusting. When minerals present are sensitive to dithionite derust with tartaric acid. Tolerates hot alkali/TKPP without loss of luster. Tolerates NH_4HF_2 without loss of luster but matrix and associated minerals may be attacked. Brightening with ammonium acetate solution often; galena tolerates this chemical but is rarely (if ever) brightened by this treatment. Tolerates EDTA, used to remove thin crusts of cerussite, hydrocerussite and related minerals. Galena from the Rogerley Mine may be coated with hydrocerussite which is removed with sulfamic acid. Some samples subject to oxidative decomposition ('pyrite rot').

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