

# Industrial Minerals

CTLGroup offers a wide range of testing and consulting services for the qualification and assessment of industrial minerals. Testing services consist of determining physical and chemical requirements for a wide range of industrial minerals. Industrial minerals tested include kaolinite (ball clay), alumina, bentonite clay, barite, calcium carbonates, diatomite, feldspars, talc, wollastonite, soda ash and industrial grade sand. Consulting services can involve the assessment of materials for the specific applicability of a mineral in an industrial application or forensic determinations of the levels of contamination (type and amount) in an industrial setting.

## Physical Properties

CTLGroup staff perform tests to evaluate gradation, particle size, bulk density and specific gravity, and absorption. Particle size analysis can be performed using laser diffraction analysis or BET analysis (for submicron sized particles). Simple physical testing for flowability, moisture levels, water retention, etc... can also be performed. Complex durability determinations such as resistance to freezing and thawing, weathering behavior or abrasion resistance testing can be designed for specific applications.

## Chemical Properties

CTLGroup staff perform tests to establish both phase and chemical purity. Analytical techniques routinely used to evaluate purity include both X-ray diffraction (XRD) and X-ray fluorescence (XRF) analyses. Organic contamination of materials can be identified using Fourier-transform infrared spectroscopy (FTIR). Levels of detection can be further enhanced by using Inductively Coupled Plasma (ICP) analysis for trace level contaminants.

