RJ Lee Group provides a high tech, step-by-step approach to fully characterizing client products and quantifying potential hazards (such as percent respirable crystalline silica) by using XRC(M). This three level procedure uses X-Ray Diffraction, Raman Spectroscopy, and Computer Controlled Scanning Electron Microscopy.

The product is first analyzed using X-Ray Diffraction (XRD) to determine the percentage of various mineralogical species (i.e., amorphous silica, crystalline silica, etc.) present in the product. XRD can only detect down to 0.1% crystalline silica, however; <0.1% crystalline silica must be detected to fulfill the hazard inversion process.

The product is then analyzed using IntelliSEM, a leading edge method for Computer Controlled Scanning Electron Microscopy (CCSEM). IntelliSEM determines the percentage of various particle diameters and the elemental content of these particles.

The use of Raman Spectroscopy is the final step in determining whether a product contains hazardous concentrations of respirable crystalline silica. Raman Spectroscopy identifies the percentages of various mineralogical species’ particles, as well as particle diameters using crystallinity, and calculates the weight percent of respirable crystalline silica in the size fraction <5 µm in diameter.

Detection of respirable crystalline silica (<5µm diameter particles) to <0.1% is now achievable for hazard inversion.

See It All
» Decrease costs for development and SDS documentation management of Materials containing hazardous materials.
» Fewer engineering controls and worker protection plans when managing hazardous materials.
» Fewer Emergency Response Plans/Spill Control Plans must be developed, maintained, and enhanced according to Federal, State and Local Regulations for hazardous materials.
» Materials may not require shipment as hazardous, decreasing the cost and easing management hassles at the destination facility.
» Decreased regulatory reporting as the product is not classified as a hazardous material.
» No warning provisions, concerns, or compliance necessary for hazardous materials for destination country’s laws.