

Study On The Surface And The Intri –Intro Safety Assessment Of Mineral Fibrous Dusts

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The paper mainly research the dusts character, surface group analysis and active distribution as well as electric chemistry on the 6 pair mineral with 12 morphology by biochemistry, electric and surface chemistry method and IR,XRF,UV spectra and electric microscopy technique. It has been done that the stability, type changed and active , and biological resistance in human simulation of mineral fibrous dusts; the glaucophane changing in animal body; the mutual action and toxicity assessment between cultural cell and mineral fibrous dusts, haemolysis and MDA testing, AM cell culture and microscopy study and the dusts acting with membrane protein red cell etc. The main viewpoint as follow: (1) The solubility, type of surface group, activity, hydrolyzing and pH value basically image their bio-assistance. (2)The rigidity and its wear at some condition is main token index of fiber mechanical capability. (3) Two stage of cation dissolving of fiber and non-crystal SiO_2 redissolving to form organic compound contained Si exists in the system of polybasic organic acids. (4)The metal ion of fiber dusts main compound with carboxyl of amino acids and enable to effective move or activate the metals, and change the structure or denaturalization of amino acids. (5) In Gamble solution the Mg^{2+} , Ca^{2+} move out easily and influence by cation exchange; Si can dissolve 5% in 96 days. (6) The LDH,SOD,MDA data show wollastonite and clinoptilolite no toxicity to red cell to man and AM of rabbit. The toxicity of fibers to AM is more than layer minerals.(7)The dusts can adsorb like-fat of hemolysis and exist $2927\text{--}2856\text{cm}^{-1}$, $1644\text{--}1432\text{ cm}^{-1}$ of amidocyanogen peaks in IR.