

Adsorption and Recovery of Organic Vapour in Multi-Stage Circulating Fluidized Bed

A process has been developed for the adsorption, recovery and reuse of organic vapor in multi-stage circulating fluidized bed (MSCFB) of activated carbon particles. The process is suitable to maintain safe working atmosphere, where toxic organic liquids viz. tri-chloro-ethylene (TCE), carbon-tetra-chloride (CTC) etc. are being used. Generally, organic liquids have high vapor pressure and when used its vapour concentration in the working atmosphere remain above threshold limit values (TLV) which is not permitted by Pollution Control Board. Hence, vapor concentration of polluting organic vapour in the working area must be maintained well below permissible limit. MSCFB is the solution for it. The advantages of this process is zero discharge of organic vapor to the atmosphere, recovery and reuse of organic liquid as well as reuse of adsorbent i.e. activated carbon particles.



Fig.4 Multi-stage circulating fluidized bed (MSCFB) for organic vapour adsorption, recovery and reuse.