

CHAPTER V



CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The following conclusions are drawn from the study:

1. Removal of mercury by copper and/or zinc adsorbents only depends on temperature and nature of mercury compounds but does not depend on pressure.
2. Adsorption of organomercury depends on temperature while inorganic mercury is independent of temperature.
3. Efficiency of adsorbents is shown in following order: copper adsorbent > copper-zinc adsorbent > zinc adsorbent > alumina adsorbent.
4. Adsorption of mercuric chloride on alumina adsorbent is an reversible process while adsorption of phenylmercuric chloride and diphenylmercury is not reversible process.
5. Efficiency of copper adsorbent increases with percent of copper loading increase.
6. Effect of increasing zinc loading depends on type of mercury compound.

7. Efficiency of copper-zinc adsorbent increases when temperature increases.

8. mercury compounds are removed in the order of: mercuric chloride > phenylmercuric acetate > diphenylmercury.

Recommendations

1. A similar study should be conducted in continuous flow reactor such as fixed bed reactor in order to study capacity and life time of adsorbent.

2. Weight ratio of copper to zinc in copper-zinc adsorbent should be varied to find a suitable one in mercury removal.

3. The same experiment set should be conducted to removal mercury in natural gas condensate in order to compare efficiency of mercury removal.