SETTING UP OF A PILOT PLANT FOR THE MANUFACTURE OF SOLUBLE FERTILIZER FROM EPPAWALA APATITE

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Apatite Rock at Eppawala is presently applied as a fertilizer in powder form after crushing the raw rock. Beneficiation of the rock has not been carried out to date. Much studies have been carried out and some of them have been published on the methods of beneficiation of apatite and Eppawala Rock itself. Such methods include the technically proved standard methods of conversion of rock to more soluble forms in addition to a novel method of manufacture of a soluble fertilizer put forward by the Institute of Fundamental Studies (viz. Tennakone et.al.). This works has been patented. At present, this method requires proof of technical feasibility prior to industrial scale production.

Transformation of laboratory scale chemical reactions into industrial scale processes requires an intermediate stage of identification, study and solution of possible industrial and engineering problems that could be encountered in a large scale manufacturing plant. This involves setting up of a pilot scale unit for production. Such a pilot unit need not necessarily be a commerically or financially viable system. Instead, it forms a Research and Development oriented test manufacturing system. Because of the smaller magnitude of the pilot manufacturing system, any modifications, additions or alterations do not become highly expensive compared with similar attempts on a full scale manufacturing system.

This paper outlines how the IFS process could be developed into an industrial scale process. The flow-charts of the possible Industrial Scale Processes are presented. Usefulness of setting up of a pilot scale unit for this purpose is outlined.