

## Technology in Brief

The benefication of phosphogypsum first requires Extraction of impurities present in it. During Churning and mixing of phosphogypsum, the water-soluble impurities of  $P_2O_5$ , F, organic water and alkalis are solubilized. The gypsum-water slurry is then pumped to a vibrating screen fitted with a screen having 300-micron aperture, wherein coarse fraction (about 5%) retained over the Sieve is rejected. The gypsum slurry passing the screen is centrifuged to remove water removable impurities. Finally, the gypsum cake is dried in the rotary drier at 110-120°C to remove free moisture from the cake. Thus, dry beneficiated phosphogypsum powder containing free moisture Below 5% is produced. Various operations ranging from mixing of phosphogypsum with water (1:3 by volume), screening, centrifuging and drying of the wet gypsum cake in the rotary drier were shown to the party. Fig. 1 shows pilot plant for the benefication of phosphogypsum installed at CBRI.

## Salient Features/Advantages

Benefication by solubilization of impurities and rejection of coarse fraction retained over 300-micron sieve during wet sieving operation followed by centrifuging and drying as per IS:12679-1989.



Technology Package	Process know-how, Process demonstration etc.
Scale of Development	Developed on pilot scale.
Status of Commercialization	Licensed, available for licensing.
Plant, Equipment and Machinery required	Slurry mixers, stirrers, slurry pumps, vibratory separator/screen hydrocyclone, rotary vacuum filter or centrifuge filter, rotary drier.
Environmental Aspects	Impurities level in phosphogypsum should be within permissible limits.