

Processing bauxite ore produces alumina. After crushing and grinding the ore to less than 1mm it is then subjected to high temperature and pressure after the addition of concentrated sodium hydroxide. The alumina dissolves in the highly caustic liquor and only silicon is soluble among all the impurities.

After digestion the sand particles are removed with the slurry being settled in primary thickeners where the flocculant is added. This is a critical stage in achieving very clear overflow clarities. The underflow, or red mud, then passes to a counter current decantation process where further alumina from the liquor is recovered via a series of washer decanters. Again flocculant is used here to promote settling and get a clear overflow.

The high aluminum content liquor from the primary thickeners is filtered, then cooled (taking up to 48 hours) and seeded with alumina hydrate to promote precipitation of alumina trihydrate. Filtering, washing and calcining to produce alumina.

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