

DETAILED PROFILE OF KEY MINERALS OF ANDHRA PRADESH

I. HEAVY MINERAL BEACH SAND

Resistant and heavy minerals with specific gravity higher than 2.78 generally constitute beach placers which are formed along the coast by wave and wind action. The placers usually contain ilmenite, zircon, rutile, monazite, garnet and sillimanite. These placers are also referred to as 'black sands' in view of significant concentration of ilmenite, magnetite and monazite which gives it a black colour. Ilmenite (FeTiO_3) and rutile (TiO_2), the important ores of titanium, are mostly produced from these placers. Titanium, a very light metal, is an important strategic metal and finds its use in a wide range of applications including aerospace industry, electrical industry and paints.

Zircon (ZrSiO_4), the source of zirconium is used mostly in foundry sands and refractory paints. Monazite, an important ore of thorium, is a phosphate of rare earth elements of Ce, La and Nd. Garnet and sillimanite (Al_2SiO_5) are mainly used in abrasive and refractory industry, respectively.

Andhra Pradesh with over 900 km of coast is endowed with rich beach placers. The placer concentration is more along the northern coast compared to the south. The occurrences can be broadly grouped into two sectors, namely north and south, the northern sector comprising the area between north of Visakhapatnam and to the north of Srikakulam and the southern between south of Visakhapatnam and Tada in Nellore District.

Srikakulam District

On the 170 km long coast between Kondada and Donkuru, black sands are found at several places. In Kondada-Kandivalasa (25 km long), Hukumpet (4 km long) and Bendicreek-Donkuru (50 km long) areas, the coastal stretch has an average width of 500 m and a heavy mineral grade of 20 to 25%. A reserve of 4.49 Mt of beach sand was estimated in Kukumpeta-Srikakulam area.

Visakhapatnam-Vizianagaram Districts

The 37 km long coastal stretch between Lawson's Bay in Visakhapatnam District in the south to Kondada in Vizianagaram District in the north has concentration of black sands at Lawson's Bay-Bhimunipatnam (19 km long and 120 m wide) and Annavaram-Konda (12 km long x 900 m wide). These stretches have a heavy mineral grade of 17- 26%. The beach placers estimated in these areas are of the order of 5.81 Mt.