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ORES AND ASSAYS

Magnetite (Fe_3O_4) contains, in a pure state 72.4 per cent iron. Is strongly magnetic, black in color, usually massive and hard in texture, but may occur as a black sand.

Hematite (Fe_2O_3). When pure contains 70.0 per cent iron. Red or brown in color. Found both hard and soft in structure.

Limonite or Bog Ore ($2Fe_2O_3.3H_2O$) When pure, contains 59.8 per cent iron. Dark yellow or brown, and earthy in appearance. Generally found in bogs, and low places. Formed by decomposition of surrounding ferruginous minerals.

Phosphorus: Iron ore is classed as "hessemer ore," when it contains more iron than 1,000 times the phosphorus content. A ten per cent margin is allowed in actual practice, so that .04 per cent phosphorus is considered the hessemer limit for an ore containing 50 per cent. iron.

Sulphur: Percentage should not be greater than 0.30 or it is considered as detrimental. In modern practice gas from coke production can often be used to roast out surplus sulphur in magnetite ore and produce what is practically a hematite.

Silica: Requires extra limestone to flux out when running over about 12 per cent of the ore content.

Titantium: Should not run over one per cent, as it is difficult to fuse, and produces a slag which is hard to handle.

Assays: A few general assays are submitted in order to indicate the average quality of the ores from the various districts.