**Rock phosphate**

Rock phosphate is a non-detrital [sedimentary rock](https://en.wikipedia.org/wiki/Sedimentary_rock) which contains high amounts of [phosphate minerals](https://en.wikipedia.org/wiki/Phosphate_minerals). The phosphate content of phosphorite (or grade of phosphate rock) varies greatly, from 4%to 20% [phosphorus pentoxide](https://en.wikipedia.org/wiki/Phosphorus_pentoxide) (P2O5).

[Limestones](https://en.wikipedia.org/wiki/Limestone) and [mudstones](https://en.wikipedia.org/wiki/Mudstone) are common phosphate-bearing rocks. Phosphate rich sedimentary rocks can occur in dark brown to black beds, ranging from centimeter-sized laminae to beds that are several meters thick.

**Rock phosphate in Egypt.**

Rock Phosphate is the most important mineral deposits in Egypt, it is in the form of a belt of phosphate deposits extends to about 750 km in length from the Red Sea on the east to Dakhla Oasis on the west. The economic importance can be summarized in that exported abroad in large quantities. It is also part of the manufacture of chemical fertilizers of super phosphate type.

1. **Nile Valley**

One of the most important areas, where Rock phosphate regions in Mahameed and Sabaaia, which lies between Edfu and Qena cities. Estimated Rock phosphate reserves in Mahameed area of about 200 million tons and up with ratio (fifth phosphorus oxide) to about 30%. Geological studies have resulted that reserves estimated at 1000 million tons around Mahameed areas.

1. **Red Sea coast**

Rock Phosphate occurs between ports of Safaga and el qussiar. The most important areas exist Mount. Dawy, el-atshan and Hamrawein. Estimated reserves of 200 to 250 million tons of Rock phosphate.

1. **Western Desert**

Abu Tartour plateau, between Dakhla Oasis and Kharga Oasis, represents the largest phosphate deposit in Egypt, where an estimated Rock Phosphate reserves of around 1,000 milli

* **Application**

1. Fertilizer industries.
2. Producing of the phosphorus and phosphoric acid used in the mining, military, medical, food, ceramic, textile and water industries.
3. Extraction of some rare metals and radioactive elements, during the conversion of phosphate into fertilizer or phosphorus acid**.**

* **Specifications of Products**
* **Chemical composition**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| product | EP31 | EP30 | EP29 | EP28 | EP27 | EP26 | EP24 | EP22 | EP20 |
| Constituent |
| P2O5 | **31.00** | **30.00** | **29.00** | **28.00** | **27.00** | **26.00** | **24.00** | **22.00** | **20.00** |
| CaO | **46.00** | **46.20** | **46.50** | **47.00** | **47.00** | **47.50** | **48.00** | **48.50** | **49.00** |
| Si02 | **8.50** | **8.75** | **9.00** | **9.50** | **9.70** | **10.00** | **10.20** | **10.40** | **11.45** |
| F | **2.45** | **2.55** | **2.60** | **2.80** | **2.95** | **2.95** | **3.00** | **3.50** | **5.00** |
| SO3 | **2.20** | **2.30** | **2.40** | **2.50** | **2.60** | **2.60** | **2.75** | **2.85** | **3.50** |
| Fe2O3 | **1.00** | **1.20** | **1.20** | **1.20** | **1.50** | **1.80** | **2.10** | **2.50** | **3.50** |
| K2O | **0.25** | **0.35** | **0.50** | **0.60** | **0.60** | **0.60** | **0.70** | **0.70** | **1.00** |
| Al2O3 | **0.30** | **0.40** | **0.40** | **0.50** | **0.55** | **0.55** | **0.60** | **0.60** | **0.75** |
| Na2O | **0.30** | **0.40** | **0.40** | **0.50** | **0.55** | **0.75** | **0.80** | **0.90** | **1.00** |
| MgO | **0.20** | **0.20** | **0.20** | **0.25** | **0.35** | **0.35** | **0.40** | **0.40** | **0.50** |
| CL | **0.02** | **0.03** | **0.04** | **0.05** | **0.07** | **0.07** | **0.09** | **0.09** | **0.10** |
| LOI | **7.00** | **7.00** | **7.50** | **7.70** | **8.00** | **8.00** | **8.20** | **8.20** | **8.50** |

* **Physical Properties**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| product | EP31 | EP30 | EP29 | EP28 | EP27 | EP26 | EP24 | EP22 | EP20 |
| Property |
| BPL (min.) | **66.50** | **64.30** | **62.20** | **61.00** | **58.45** | **56.80** | **54.30** | **52.60** | **50.00** |
| MOISTURE (max.) | **5.00** | **5.00** | **5.00** | **5.00** | **5.00** | **5.00** | **5.00** | **5.00** | **5.00** |
| SOLUBILITY IN 2% CITRIC ACID (%) | **40** | **40** | **40** | **35** | **35** | **35** | **35** | **30** | **30** |
| SOLUBILITY IN 2% FORMIC ACID (%) | **45** | **45** | **45** | **45** | **45** | **40** | **40** | **35** | **35** |
| ORGANIC MATTER AS C (%) | **0.50** | **0.60** | **0.75** | **0.80** | **0.85** | **0.90** | **0.95** | **1.00** | **1.20** |

**EGYPT STON CO. providing all types of phosphate rocks**