Raw materials

The raw materials for making fertilisers can be supplied to fertiliser manufacturers in bulk quantities of thousands of tonnes, drum quantities, or in metal drums and bag containers.

Primary fertilisers include substances derived from nitrogen, phosphorus, and potassium. Various raw materials are used to produce these compounds. When ammonia is used as the nitrogen source in a fertiliser, one method of synthetic production requires the use of natural gas and air. The phosphorus component is made using sulfur, coal, and phosphate rock. The potassium source comes from potassium chloride, a primary component of potash.

Secondary nutrients are added to some fertilisers to help make them more effective. Calcium is obtained from limestone, which contains calcium carbonate, calcium sulfate, and calcium magnesium carbonate. The magnesium source in fertilisers is derived from dolomite. Sulfur is another material that is mined and added to fertilisers. Other mined materials include iron from ferrous sulfate, copper, and molybdenum from molybdenum oxide.

Choosing the factory site

A company considering a new place to build a fertiliser factory needs to think about things like these:
- Closeness to raw materials
- Closeness to ports if anything is to be imported or exported
- The road network
- The water supply
- The labour force
- The cost of land
- Community interests
- Environmental impact

Did you know?

A plant is another name for a chemical factory.
This flow chart illustrates how raw materials are combined to form the fertilisers we need. A factory is not just a single unit. It can be many plants built close together on the same site. Each plant is controlled so that it is making the right amount of a substance at the right time.

Source: Coordinate Science

This flow diagram illustrates how a large number of chemical compounds are needed in different processes to make fertilisers.

Source: Chemical Industries Resource Pack