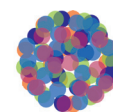


# F7 FERTILISERS

LET'S VISIT A CHEMICAL PLANT



**CHEMICAL  
INDUSTRIES**  
RESOURCE PACK



**A chemical plant**

## 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.**

## 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.

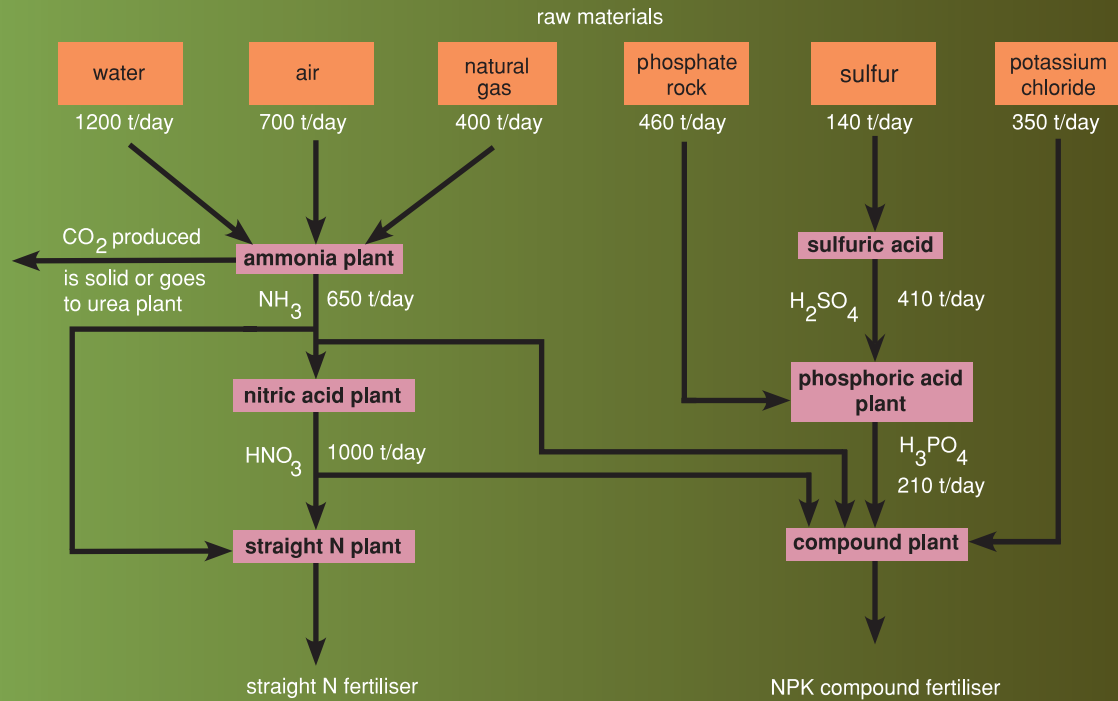
*This material was obtained from the website [www.madehow.com](http://www.madehow.com). Learners - if you use any part of it you need to write it in your own words and include the following in your reference list: Madehow.com. 2010. Fertiliser. [Online]. Available: [www.madehow.com/Volume-3/Fertiliser.html](http://www.madehow.com/Volume-3/Fertiliser.html) [1 July 2010].*

## Quality control

To ensure the quality of the fertiliser that is produced, manufacturers monitor the product at each stage of production. The raw materials and the finished products are all subjected to a sequence of physical and chemical tests to show that they meet the specifications previously developed. Some of the characteristics that are tested include pH, appearance, density, and melting point. Since fertiliser production is governmentally regulated, composition analysis tests are run on samples to determine total nitrogen content, phosphate content, and other elements affecting the chemical composition. Various other tests are also performed, depending on the specific nature of the fertiliser composition.

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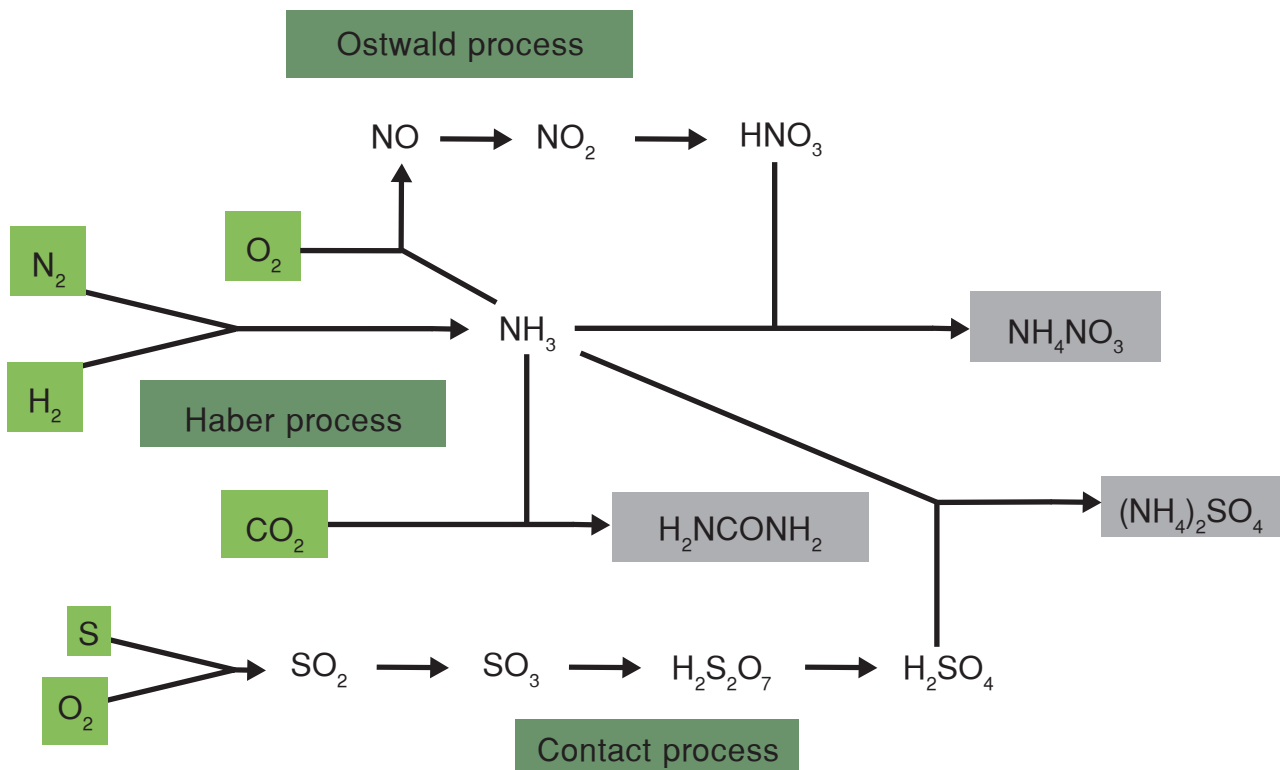
## A flow diagram of the fertiliser production process



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

## A flow diagram to show how industrial processes fit together to make fertilisers



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

Source: Chemical Industries Resource Pack