

NPK Compound Fertilizers

December 2024

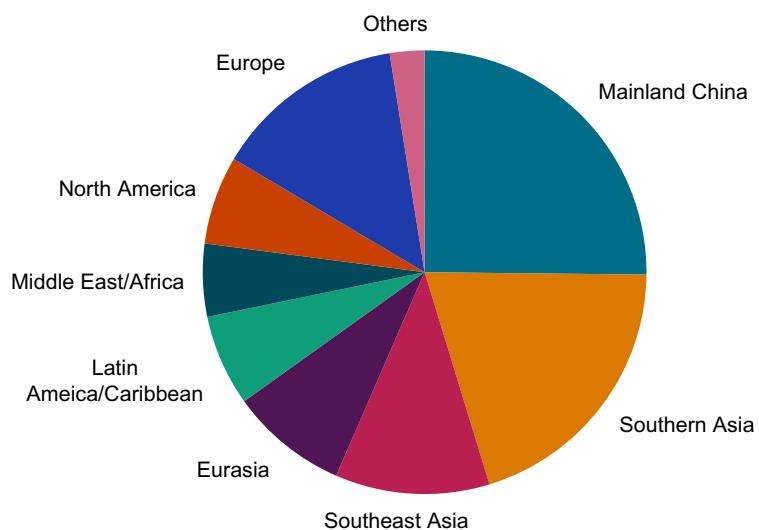
Abstract

Fertilizers are substances that can be in a solid, liquid or gaseous state, and contain one or more plant nutrients. They can be applied to the soil, or directly on the plant to maintain or increase fertility to produce crops with good quality. They supplement naturally available nutrients in the soil and also provide additional nutrients that are required for specific types of crops.

A distinct advantage of compounded NPK fertilizers is that they can be formulated based on the type of crop and soil. The fact that they are compounded enables them to be less soluble in groundwater. This makes them suitable for dry soil matrices and areas prone to droughts. NPK is typically used for sugar beets, sunflower and buckwheat during the autumn and for corn, wheat, barley and vegetable crops during spring. Fertilizer products can be used in various physical and chemical forms. Based on its state, each form has its own advantages and limitations.

The following chart shows world consumption of NPK compound fertilizers:

World consumption of NPK compound fertilizers — 2024



Data compiled Nov. 12, 2024.

Other Asia includes Japan, South Korea, Taiwan, and Southeast Asia/Oceania.

Source: S&P Global Commodity Insights.

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Mainland China has become the world's largest producer and consumer of NPK compound fertilizers. Over 3,000 companies produce NPK compound fertilizers in mainland China, with a total capacity of over 34 million metric tons of primary NPK compound fertilizers in 2024. The Middle East and Africa have strong consumption growth (albeit from a small base). Eurasia and Southern Asia will have most of the growth percentage in terms of volume.

The products covered in this report are the following:

- *NPK fertilizers* typically contain at least 3% N plus 5% P₂O₅ plus 5% K₂O and at least 20% total nutrients. Nutrient ratios are provided for NPK fertilizers, such as 1:1:1. If there are additional numbers, it would refer to magnesium and then sulfur. Since each granule of these fertilizers contains the same proportion of nutrients, application to the soil can be simple.
- *NP fertilizers* have a minimum of 3% N and 5% P₂O₅ and at least 18% of total nutrients. These products are applied where the soil is already rich in potassium content or where potash can be applied as a standalone fertilizer.
- *NitroP fertilizers* are made by reacting nitric acid with phosphate compounds. As it does not use sulfuric acid, there is no unwanted gypsum waste.
- *NitroPK fertilizers* are similar to NPK and are manufactured by the nitric acid route.

Compound fertilizers contain two or more nutrients and are also known as multinutrient fertilizers. A complex fertilizer refers to a compound fertilizer formed by combining ingredients to react chemically. Compound fertilizers can also be produced by blending two or more granular fertilizers of similar size. Such products retain the physical and chemical characteristics of individual compounds. They are made by mixing basic fertilizers derived from ammonia with salts containing phosphorus or potassium.

Demand for fertilizers is driven by the need for food, which in turn is driven by the size and wealth of the population. The global population has doubled from about 3 billion in the early 1960s to around 6 billion by the turn of this century. Between now and 2050, the population is expected to increase by another 3 billion, equivalent to the current combined population of mainland China and South Asia. Feeding a population of 9 billion people in 2050 will involve a combination of several developments, including relying on increased plant nutrition, new technologies and the

cultivation of more marginal land. Food production has increased substantially over the past several decades, in part because of increasing yields as a result of fertilizer application.

For more detailed information, see the table of contents, shown below.

S&P Global's Chemical Economics Handbook – NPK Compound Fertilizers is the comprehensive and trusted guide for anyone seeking information on this industry. This latest report details global and regional information, including



Global summary;
regional coverage



Producers with
annual capacities
and plant sites



Production figures
and trends



Consumption and
forecasts by end use
application



Manufacturing
processes and
environmental issues



Trade – imports
and exports

Key benefits

S&P Global's Chemical Economics Handbook – NPK Compound Fertilizers has been compiled using primary interviews with key suppliers and organizations, and leading representatives from the industry in combination with S&P Global's unparalleled access to upstream and downstream market intelligence and expert insights into industry dynamics, trade and economics.

This report can help you

- Identify trends and driving forces influencing chemical markets
- Forecast and plan for future demand
- Understand the impact of competing materials
- Identify and evaluate potential customers and competitors
- Evaluate producers
- Track changing prices and trade movements
- Analyze the impact of feedstocks, regulations and other factors on chemical profitability

Table of contents

Executive summary	7
Summary	8
Introduction	10
Manufacturing processes	17
Compaction	17
Accretion	18
Pipe-cross reaction	18
Nitrophosphate process	18
Mechanical blending	19
Mixed-acid route	20
Pipe reactor granulation	20
Drum granulation with ammoniation	21
Mixed-acid process with digestion of phosphate rock	21
ODDA process	21
Environmental issues	22
Supply and demand by region	23
World	23
Capacity and production	23
Consumption	26
Price	27
Trade	28
United States	30
Producing companies	30
Salient statistics	31
Production	32
Consumption	34
Price	36
Trade	38
Canada	39
Producing companies	39
Salient statistics	39
Consumption	40
Latin America and the Caribbean	41
Mexico	41
Producing companies	41
Salient statistics	41
Production	42
Consumption	43
Trade	44
Central and South America	45
Producing companies	45
Brazil	46

Colombia	46
El Salvador	46
Salient statistics	47
Production	47
Consumption	49
Price	51
Trade	51
Western Europe	56
Producing companies	56
Production capacity	60
Salient statistics	63
Production	64
Consumption	66
Price	68
Trade	70
Central and Eastern Europe	72
Producing companies	72
Production capacity	76
Salient statistics	78
Production	79
Consumption	81
Price	83
Trade	84
Eurasia	86
Producing companies	86
Production capacity	89
Salient statistics	92
Production	92
Consumption	94
Price	96
Trade	98
Middle East	100
Producing companies	100
Production capacity	103
Salient statistics	105
Production	105
Consumption	107
Price	109
Trade	110
Africa	112
Producing companies	112
Production capacity	115
Salient statistics	118
Production	118
Consumption	120
Price	122
Trade	123

Southern Asia	125
India	126
Producing companies	126
Salient statistics	129
Production	130
Consumption	131
Price	132
Trade	133
Other Southern Asia	135
Producing companies	135
Salient statistics	135
Production	136
Consumption	138
Price	139
Trade	140
Mainland China	141
Producing companies	141
Salient statistics	146
Production	147
Consumption	147
Price	148
Trade	149
Japan	150
Producing companies	150
Salient statistics	152
Production	153
Consumption	153
Price	154
Trade	154
Other Eastern Asia	156
Producing companies	156
Salient statistics	157
Production	157
Consumption	159
Price	161
Trade	162
South-eastern Asia	165
Producing companies	165
Salient statistics	168
Production	169
Consumption	170
Indonesia	173
Thailand	173
Price	173
Trade	174
Oceania	177
Producing companies	177

Salient statistics	177
Consumption	177
Price	179
Trade	180
Additional resources	182
Revisions	183
Data Workbook	184

CONTACTS

Americas: +1 800 597 1344

Asia-Pacific: +60 4 296 1125

Europe, Middle East, Africa: +44 (0) 203 367 0681

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