

Industrial Solutions

Sulfuric acid

Efficient, resource-friendly sulfuric acid production – innovative single-source solutions tailored to your needs



thyssenkrupp



When competence meets know-how

From fertilizer production to the production of pigments – sulfuric acid is used in nearly all industries. As a key product of the chemical industry, it is extremely versatile in its use, and with a production volume of 250 million tonnes it is one of the most important industrially produced chemicals.

As a globally active supplier, we combine our extensive competence in the construction of turnkey industrial-scale plants with proprietary patented technologies for the production of sulfuric acid, thus making us independent of licensors.

In addition to the engineering, procurement and construction of complete plants, we assume responsibility for their commissioning and even for their maintenance if so wished. In us, our customers thus have a competent partner at all times throughout the long life cycle of their plants. Our experience in the construction of more than 1,000 industrial-scale plants in the past 140 years shows: We know what we are doing.

We apply our distinct process know-how in sulfuric acid production to meet the individual needs of our customers. Tailored technological components are a must in view of the different feedstocks, various industrial sectors and variety of intended uses of the sulfuric acid produced. Our tailor-designed sulfuric acid plants not only take into account the given location conditions and country-specific regulations, but also demonstrate optimum resource efficiency – ensuring first-class plant solutions.

And, of course, the same is also true when we revamp and optimize existing plants. How – with our comprehensive service from a single source, we create and sustain value.



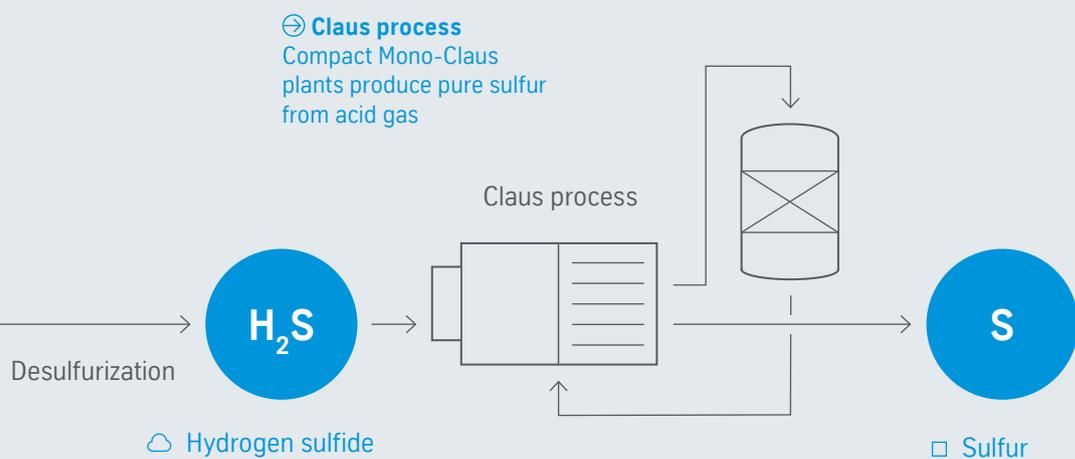
AFC fertilizer
complex, Egypt



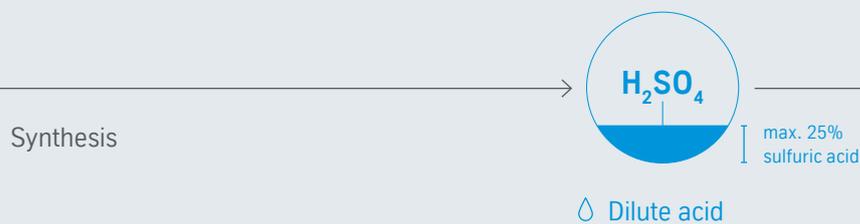
From the raw material to sulfur dioxide – flexibly with minimum emissions

Feedstock

Refinery and coke
oven plant



Liquid waste



Non-ferrous metals

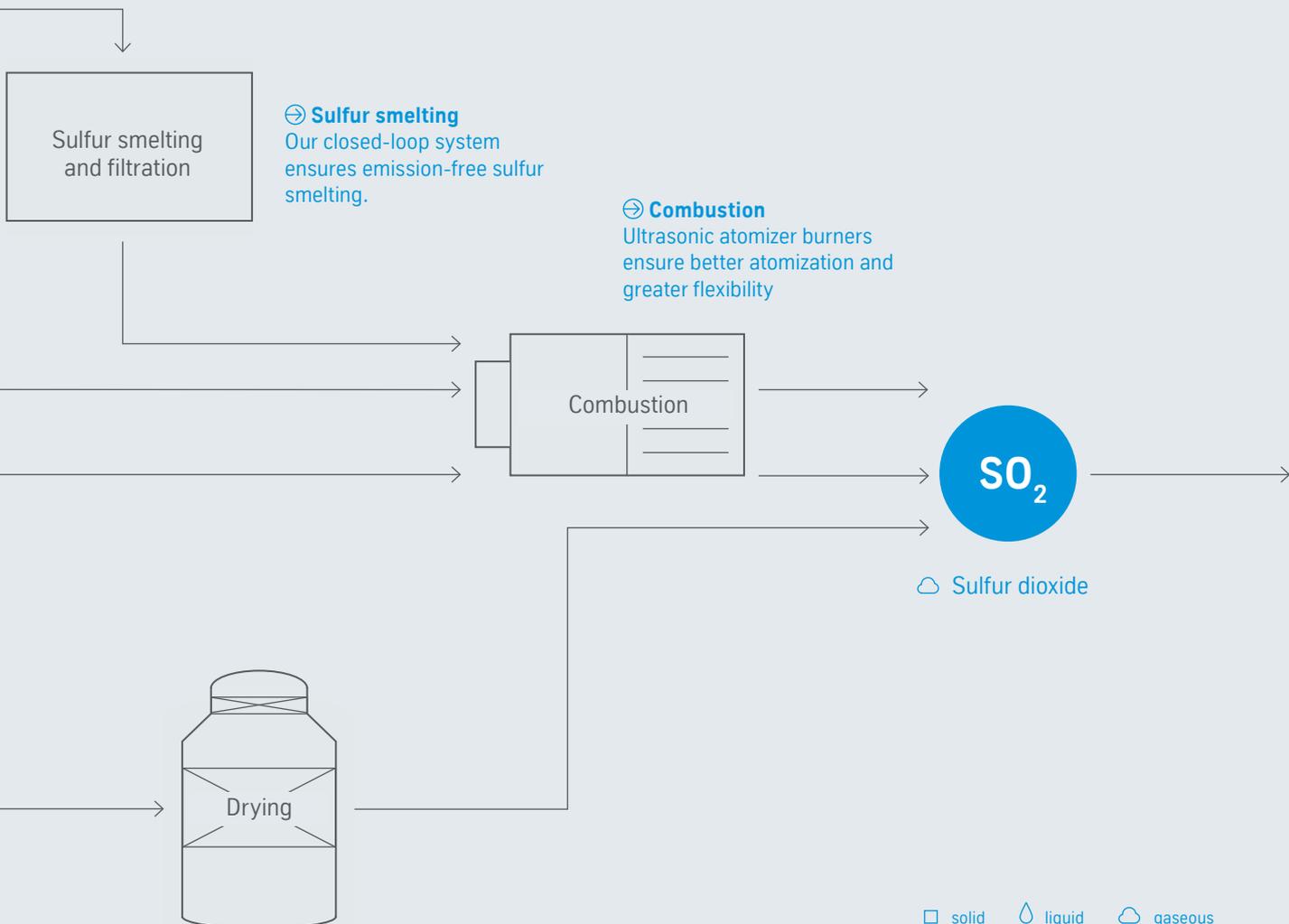
Roasting

Competence that delivers

Our comprehensive proprietary process portfolio offers our customers maximum design scope. Sulfurous tail gases, elemental sulfur or dilute acid: the feedstocks used to produce sulfuric acid are just as diverse as the industrial sectors that are involved in its production. Irrespective of the feedstock, we design the production process for maximum efficiency, reliability and resource friendliness. Based on different technological components, we offer flexibility that permits the processing of hydrogen sulfide (H_2S) and elemental sulfur (S) as well as sulfur sludge and contaminated sulfuric acid (H_2SO_4) to produce sulfur dioxide (SO_2) as an intermediate in the first process step. This is then further processed to highly concentrated sulfuric acid (H_2SO_4) in the subsequent process step.

Together with our customers we co-develop a tailored solution and carry out the planning, development and construction of new sulfuric acid production plants as well as the revamp and optimization of existing ones. If required, we also engineer the plants and systems to prepare, process, transport and store the feedstocks.

⊕ **Smelting and filtration**
Continuous, automatic sludging takes place to reduce the ash content of the sulfur during operation.



From sulfur dioxide to sulfuric acid – efficiently in terms of cost and resource consumption

⊖ Converter

With its optimum gas distribution, the converter design ensures minimum emissions.

⊕ Closed Loop System

The closed-loop system allows the nitrogen to be fed back into the process – no air humidity, less corrosion, longer service life of the plant.

Process gas

Converter

Absorption towers

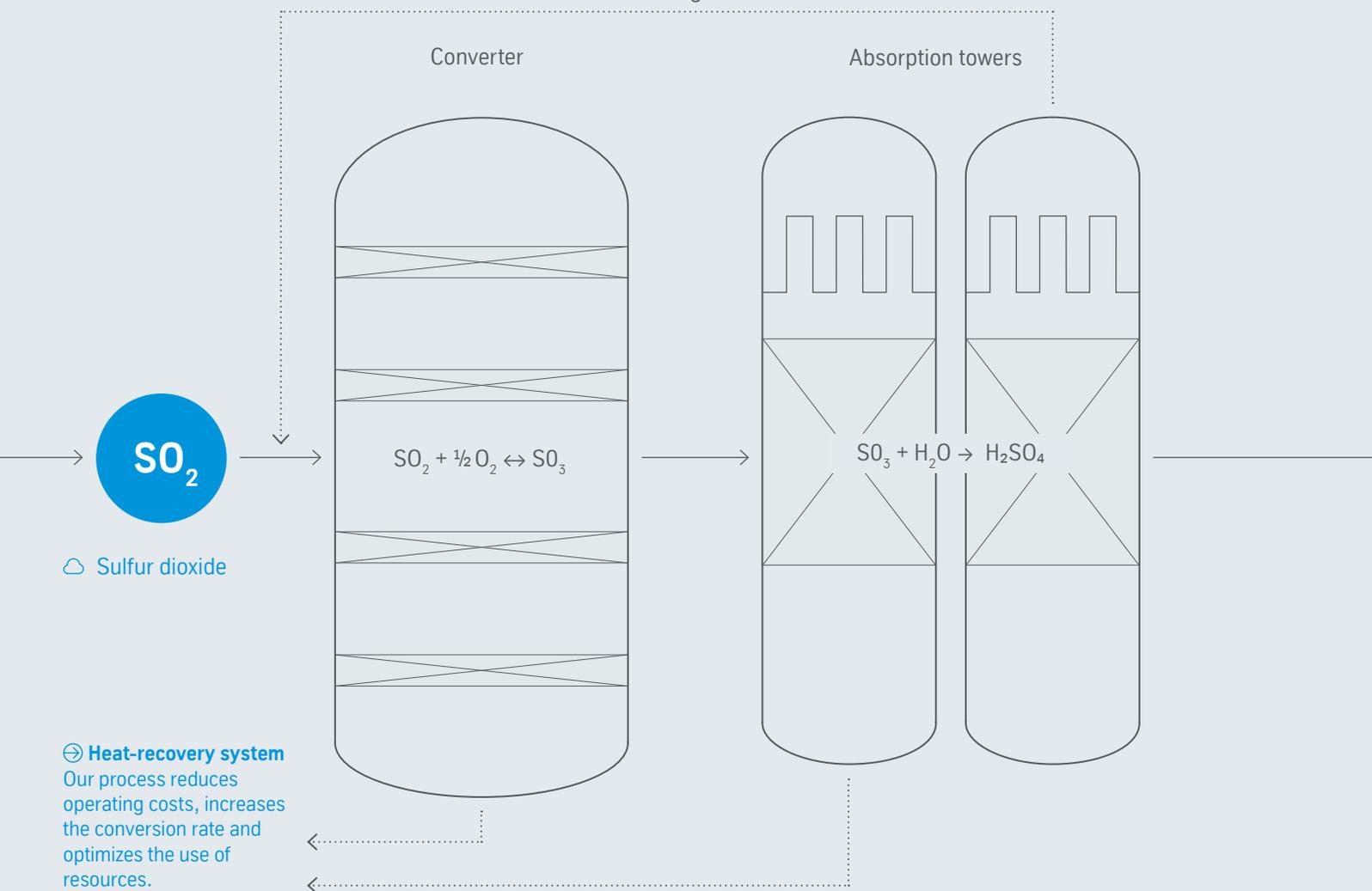


☁ Sulfur dioxide



⊕ Heat-recovery system

Our process reduces operating costs, increases the conversion rate and optimizes the use of resources.



Our experience for your success

Working with you, we define which of our technologies secures the long-term success of your investment in the processing of sulfur dioxide to sulfuric acid. We build first-class plants that are cost-effective, reliable and resource-friendly. That is our expert promise! And it is underpinned by a wealth of experience.

We use proprietary patented technologies to engineer and build sulfuric acid plants and are thus independent of licensors. From the closed-loop system to the emission-free sulfur smelting process to maximum heat recovery: Choosing us means you can rest assured that you have a partner you can rely on.

As a supplier of turnkey industrial-scale plants we not only take account of the different location conditions around the world and demanding requirements of our customers, we also stand for groundbreaking design, the lowest possible energy and resource consumption and maximum operational reliability. As our customer, you thus reap the rewards of our experience – for your success.

Further information:
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Further processing

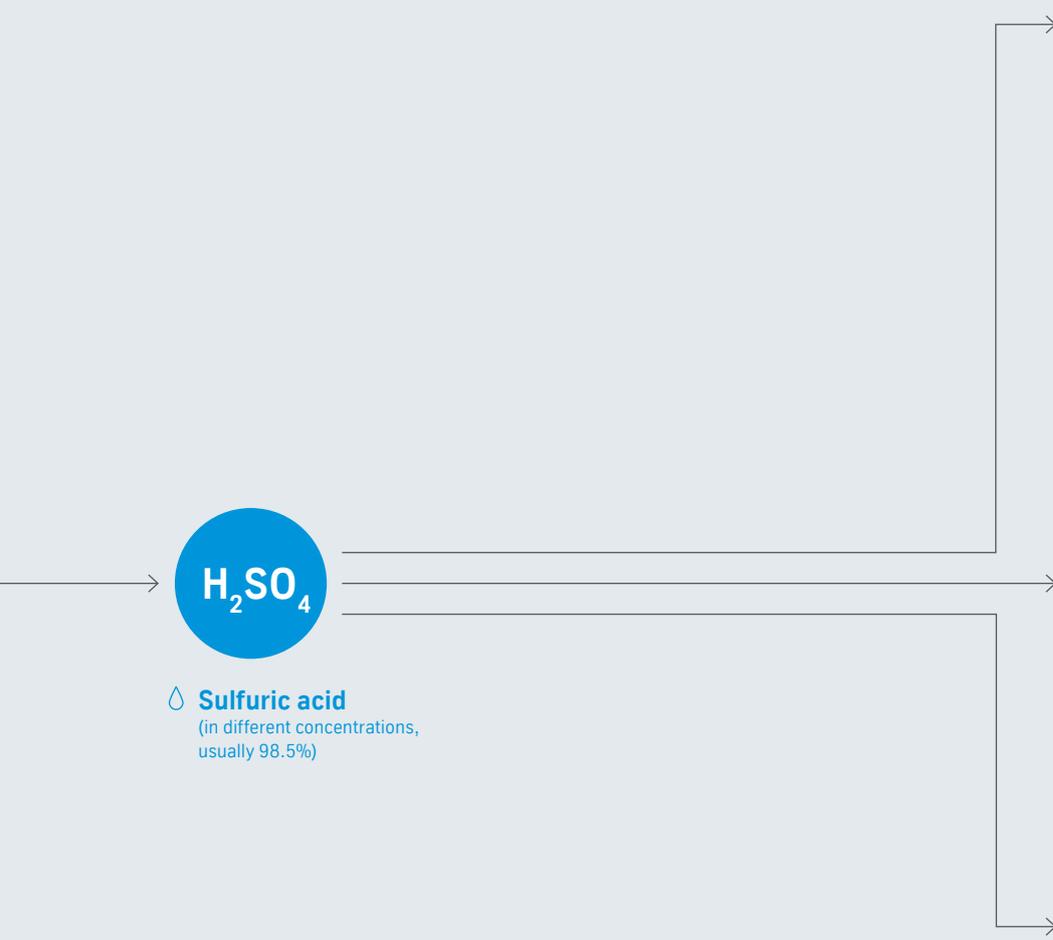
Fertilizers

Paints and varnishes

Chemical industry



💧 **Sulfuric acid**
(in different concentrations,
usually 98.5%)



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