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BULK FERTILIZER HANDLING SOLUTIONS: READY TO MEET RISING GLOBAL DEMAND

Global bulk fertilizer markets are set to rise in line with growing populations, with demand heavily tied to the grain and food and farming sector. Raw materials for bulk fertilizers are subject to the same market forces as the finished product. We are ready to meet this growth with safe, sustainable, high-capacity fertilizer handling systems.

The most common dry bulk fertilizers traded and shipped globally on international markets include: urea, which is a highly concentrated source of nitrogen and sulfur; diammonium phosphate (DAP), a very popular bulk fertilizer for its ready source of both nitrogen and phosphorus; NPK branded fertilizers which are a mix of nitrogen, phosphorus, and potassium; muriate of potash (MOP), a granular fertilizer high in potassium; and monoammonium phosphate (MAP), a good source of phosphorus and nitrogen.

These fertilizers and minerals, such as phosphate rock and gypsum are generally dusty to handle, and many have the challenge of being hydroscopic, which can lead to them clumping and crusting in the hold on a voyage, if exposed to moisture, impacting their free-flowing characteristics. This means that port fertilizer handling systems often have to overcome digging forces when discharging bulk fertilizer materials from the hold and be capable of adapting to the changing requirements of various types and volumes of bulk fertilizer imports.

Siwertell screw-type ship unloaders can meet these needs and withstand high digging forces, enabling them to discharge even the most compacted and corrosive cargoes, such as salt.

SUSTAINABLE FERTILIZER HANDLING SYSTEMS FOR CHANGING TIMES

There are often strict environmental regulations in force at ports and terminals, especially with regard to bulk fertilizers and enclosed fertilizer handling systems. Bruks Siwertell's fertilizer handling systems ensure totally enclosed conveying lines from the ship to the shore, which ensures that material spills are eliminated and dust creation and emissions are reduced to an absolute minimum.

Our range of ship unloaders, loaders, conveyors, and storage and reclaiming systems are making significant inroads into the worldwide trade in bulk fertilizers; an industry that has traditionally relied on grab cranes and bucket systems at its discharge ports.

Major reasons for industry operators making the switch to Bruks Siwertell's fertilizer handling systems is the desire for increased efficiency, improved safety standards and a much cleaner operating environment. Increasingly stringent environmental protection regulations often drive the adoption of our technology, which can ensure sustainable fertilizer handling.

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FERTILIZER: A VITAL BULK COMMODITY WITH HANDLING ISSUES

Agriculture relies on bulk fertilizers, which are primarily made from compounds of nitrogen, phosphorus and potassium, along with sulfur. Dry bulk fertilizer handling systems and must minimize cargo degradation and environmental impact, while also possessing the capabilities to keep the risk of fire and explosion as low as possible. They must be able to deal with these hazardous events in a way that presents no risk to personnel, ships and terminal infrastructure.

Bruks Siwertell is the only company able to offer safe, totally enclosed systems for unloading bulk fertilizers, thanks to our experience with sulfur handling and our Siwertell Sulfur Safety System (4S).

The 4S detects and extinguishes fires early, shutting down the system to stop their spread, and safely containing them. Fire detectors are installed along the length of the conveying line. They automatically start the fire-extinguishing system and stop the conveyors to prevent a fire from spreading to storage areas. Furthermore, extra-thick steel casings can withstand an explosion, while venting valves relieve the resulting pressure. Their robust stainless-steel components also minimize corrosion.

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OVERCOMING ENVIRONMENTAL CHALLENGES

Bulk fertilizers and their constituent materials are dusty and can present serious localized environmental problems when discharged using grab cranes or bucket systems. Bruks Siwertell offers extremely clean bulk fertilizer ship unloading, loading and conveying systems, which eliminate spillage and keep dust emissions to an absolute minimum.

For many operators, our systems have delivered an operational lifeline because of their environmental performance when handling bulk fertilizers.

For example, Bruks Siwertell is involved in almost all of India's dry bulk markets, with particular prominence in the bulk fertilizer industry.

Deliveries to the fertilizer sector include four Siwertell ship unloaders for the importation of rock phosphate and sulfur, which are important ingredients in its manufacture. Fertilizers underpin India's national food production, which has one of the largest populations in the world.

Working hard to secure these imports is, for example, Paradeep Phosphates Limited (PPL), a leading fertilizer industry company operating in the state of Odisha, India. PPL is headquartered in Bhubaneswar, and is a major manufacturer of phosphatic fertilizers, ranking as Asia's second largest producer of diammonium phosphate (DAP).

Since 2006, a rail-mounted Siwertell 640 D-type ship unloader has been serving Paradeep Phosphates Limited (PPL), a leading fertilizer industry company operating in the state of Odisha, India. It has been a critical part of the port's environmental transformation, supporting a switch from open-air handling of sulfur with a bucket-type unloader, to safe, fully enclosed, dust-free operations.

The installation has now been in operation for more than 15 years and has been so successful at speeding up vessel turnarounds for PPL, and thereby reducing freight costs and demurrage, that return on investment was achieved in a short space of time. PPL now operates a second Siwertell 640 D-type ship unloader, enabling the company to keep pace with its expansion plans and an increase in bulk fertilizer volume demands in the most sustainable and environment-friendly way possible.

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EFFICIENCY AND RELIABILITY FOR ALL FERTILIZER APPLICATIONS

Bruks Siwertell's tailor-made ship unloaders, loaders, conveying systems and stacker reclaimers provide the perfect bulk handling arrangements for all sizes of bulk fertilizer import or export operations.

Fertilizer handling systems that ensure safety, reliability, efficiency and excellent through-ship performance and environmental protection measures deliver significant commercial benefits to the bulk fertilizer sector.



EFFICIENT, SAFE FERTILIZER UNLOADING IN THE ARCTIC CIRCLE

Norway's leading mineral fertilizer producer, Yara International, operates the world's northernmost fertilizer plant in Glomfjord, within the Arctic Circle. It has employed a well-maintained Siwertell unloader, operating at top performance, for more than 30 years. When greater capacity was required, once again the company looked to Siwertell unloading technology to meet its needs.

Any new unloader had to handle demanding dry bulk materials such as various rock phosphates and potash fertilizers, and meet strict environmental criteria, manage high prevailing winds, and operate successfully in the extremely low temperatures of the Arctic Circle.

Yara now operates a rail-mounted Siwertell ST 490-M ship unloader, which serves vessels up to 20,000 dwt at a continuous rated discharge of 600t/h, with a peak capacity of 700t/h. The unloader is equipped with a dust-suppression system and an advanced electrical control unit, including the Siwertell monitoring system, known as SiMon

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EFFICIENCY AND RELIABILITY FOR ALL FERTILIZER APPLICATIONS

Bruks Siwertell's tailor-made ship unloaders, belt conveyor ship loaders and conveying systems provide the perfect bulk handling arrangements for all sizes of fertilizer operations. Reliability, efficiency and excellent through-ship performance deliver significant commercial benefits.



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