

# ALMATEC®

Expert  
Solutions  
for Critical  
Applications

ALMATEC  
Market Brochure



Where Innovation Flows

AIR-OPERATED DOUBLE-DIAPHRAGM PUMPS

  
**PSG**  
a **DOVER** company

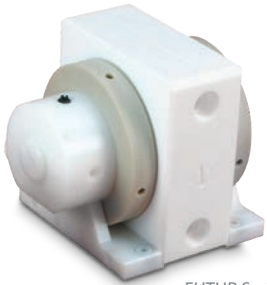
[almatec.de](http://almatec.de)



E-Series



Chemisor



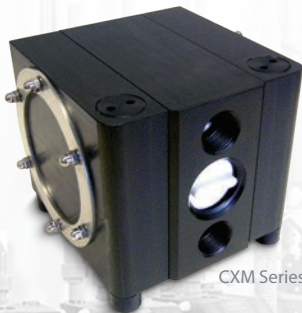
FUTUR Series



AHD Series



BIOCOR Series



CXM Series

Almatec® Maschinenbau GmbH is a premier manufacturer of air-operated double-diaphragm (AODD) pumps. Headquartered in Kamp-Lintfort, Germany, Almatec is a product brand within PSG®, Oakbrook Terrace, IL, USA, a Dover company. With a reputation for engineering excellence that spans more than three decades, the Almatec name has become synonymous with quality, reliability and safety. This reputation will continue to grow thanks to an affiliation with PSG, making Almatec a global powerhouse within the AODD pump market.

Since it was founded in 1984, Almatec has continued to redefine what a state-of-the-art solid plastic AODD pump looks like by developing new and innovative product characteristics. Every pump that Almatec manufactures is of the highest quality, with unique features that customers have come to rely on, including a solid construction, energy-efficient air control system, industry-leading diaphragms and best-in-class materials of construction. In addition, Almatec is constantly striving to create new product innovations and improvements that have resulted in a wide range of products and the ability to penetrate new markets. By extending its product line, Almatec is able to offer sophisticated technical and economical solutions.

## Safety. Quality. Reliability.

The unique PERSWING P® technology is a precision air control system that features optimal performance. The metal-free, pneumatically pilot-operated PERSWING P® ensures accurate non-stalling operation and is characterized by low noise levels. Only two moving parts ensure minimal maintenance and lube-free operation.

Almatec plastic pumps feature a solid body construction made out of virgin grade PE or PTFE materials that support the necessary weight for a reciprocating pump. The high static mass with required wall thicknesses for each component leads to a smooth operation and eliminates the need for external metal parts. The mechanical machining of a solid plastic block is economical thanks to modern CNC technology, enabling tight tolerances and maximum value.

Almatec also features best-in-class diaphragms providing a smooth profile that is uninterrupted by any seals, maximizing containment and clean-ability. The diaphragms are designed to simplify assembly, reduce air consumption and optimize performance.



# Markets Served



## Process

Almatec's air-operated diaphragm pumps are the pumps the chemical, semiconductor, paint and coatings, and paper and printing industries turn to when they demand safety, quality and reliability for their respective applications. Almatec pumps conform to the ATEX directive, making them suitable for use with flammable liquids and environments with an explosive atmosphere.

### Typical Applications Handled:

- Acids
- Bases
- Solvents
- Sludge
- UV varnishes
- Glues
- Printing inks
- Etching agents
- Emulsions
- High-purity chemicals

## Energy

Almatec is heavily invested in the solar or photovoltaic industry as the world economy increases its focus on renewable energies. The E-Series pump is especially well-suited for use in the manufacture of silicon solar cells (wafers).

### Typical Applications Handled:

- Silicon solar cells
- Slurry
- Chemical treatment of wafers
- Hard, sharp silicon particle by-products from wafer cutting process
- Highly abrasive media

## Hygienic

Almatec's pumps meet the highest standards for processes in the biopharmaceutical industry as well as in the food and beverage industry, complying with EHEDG, EC1935, FDA and USP Class VI standards (depending on the pump series). Almatec pumps have high surface quality, the ability to trace the materials used and CIP/SIP capabilities.

### Typical Applications Handled:

- Active pharmaceutical ingredients
- Biotechnical ingredients
- Cosmetics
- Live cultures
- Food ingredients
- Fruit juices, sauces, pastries
- Concentrates, aromas

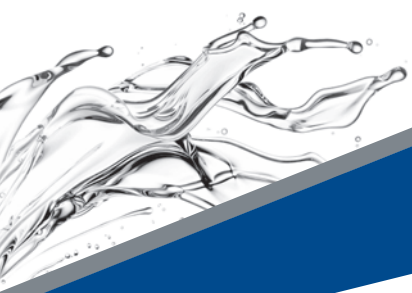
## Water/Wastewater

In industrial water treatment applications, Almatec's air-operated diaphragm pumps are used for taking samples for analysis around the clock, wastewater neutralization and feeding filter presses with sludge. Almatec pumps allow operation over the entire range of flow rates without a risk of overpressure and without any additional regulation.

### Typical Applications Handled:

- Chemical handling
- Transfer
- Ion exchange
- Sludge
- Neutralization





## Applications

The fields of application include chemical industry, pharmaceuticals, cosmetics, food and beverage, ceramics, surface treatment, emergency services, power plants, refineries, mechanical engineering, textile industry, water processing, waste disposal, paper industry, electronics, solar industry.

Compatible liquids include sludges, acids, alkalis, solvents, slurries, emulsions, mixtures of liquids and solids, resins, powders, aqueous solutions.

These liquids may be of high or low viscosity, abrasive, thixotropic, hazardous, toxic, non-lubricating, hot, cold, coagulating, shear sensitive, pasty, solids containing, corrosive.

### Chemical Industry

The chemical industry (including the pharmaceuticals industry) is one of the classic areas of application for ALMATEC air-operated diaphragm pumps. Their outstanding characteristics (safety, quality, reliability, solid construction, self-priming and dry-operation capabilities, etc.) play a large role in the transportation of media that often exhibit corrosive, hazardous, toxic, or explosive properties – like acids, bases, solvents, and chemical mixtures. The plastic pumps of the E-SERIES with the PE (abrasion-resistant) and PTFE (almost universally chemically resistant) material options, as well as their conductive versions for ATEX applications, cover an essential part of the chemical industry's pump needs.



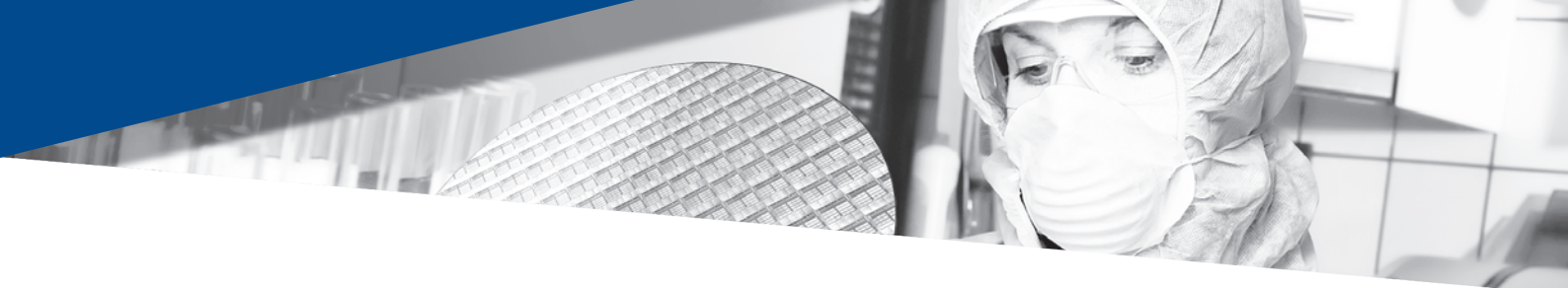
**E-SERIES, CHEMICOR, BIOCOR**

### Solar Industry

The value of the solar or photovoltaic industry in the world economy is increasing rapidly due to the growing importance of renewable energies. The Almatec E-SERIES air-operated diaphragm pumps, which do not use any metal on their exterior, are considered to be especially well suited for use in the manufacture of silicon solar cells (wafers) in particular. Possible areas of application in this industry include using pumps made of abrasion-resistant polyethylene for the pumping of slurry before and after the silicon sawing process, as well as chemical treatment of the wafers (using pumps made of PTFE).

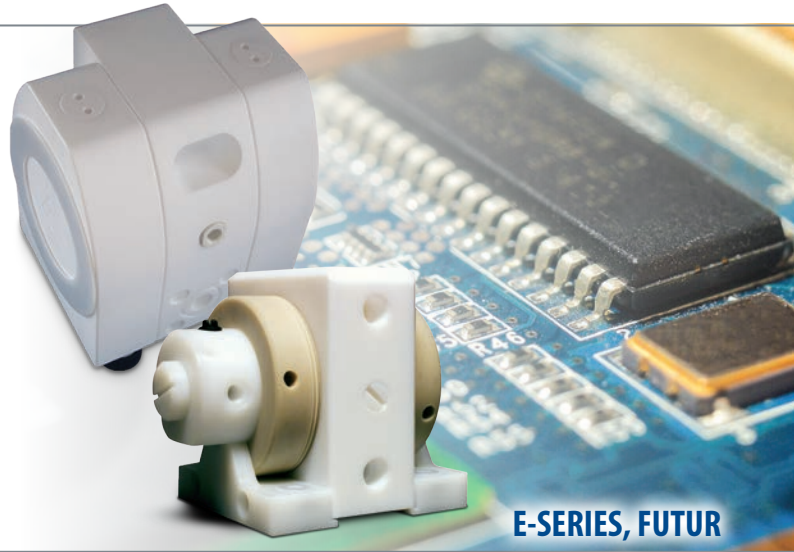


**E-SERIES**



## Semiconductor Industry

The production of semiconductors places especially high demands on a pump. In addition to the special challenges posed by the fairly high temperatures sometimes encountered, particularly for plastics, terms like purity and safety gain a whole new meaning. The completely metal-free Almatec FUTUR pump series is an essential requirement in this case. The supply of high-purity chemicals and their circulation and filtration, as well as the pumping of abrasive slurries and solvents are typical areas of application in the semiconductor industry. Examples of high-purity chemicals that Almatec pumps can successfully handle include  $H_2SO_4$ ,  $HCl$ ,  $HNO_3$ ,  $H_3PO_4$ ,  $HF$  and  $H_2O_2$ , including mixtures of these.



E-SERIES, FUTUR

## Ceramic Industry

In the ceramic industry, pumps are needed to transport sludge and glazes, among other uses. An important criterion in the selection of a suitable pump in this case is the abrasion-resistance of the pump materials. A recommended material in the solidly constructed Almatec E-SERIES AODD pump is polyethylene. Studies conducted when utilizing the sand slurry method have confirmed that PE has an abrasion resistance that is seven times higher than that of polypropylene (PP) — which is often used as a material in pumps — and 1.6 times higher than that of steel. PE also has higher wear-resistance than cast iron or aluminum, for example.



E-SERIES

## Biopharmaceutical Industry

Sterile processes are the main focus in the biopharmaceutical industry. Examples of products handled in these applications include active pharmaceutical and biotechnical ingredients, cosmetics, and live cultures. The pumps used in such sterile applications must meet corresponding hygienic standards (EHEDG, EC1935, FDA, USP Class VI) and require SIP and CIP capabilities. The Almatec BIOCOR AODD pump line with their high surface quality and the ability to trace the materials used meet these required criteria.



BIOCOR





## Applications

### Paint and Varnish Industry

To pump paint and varnish, a pump generally needs to conform to the ATEX directive. The ATEX versions of the Almatec CHEMICOR line of metal pumps meet these requirements. For UV varnishes, there are E-SERIES pumps made of conductive plastic available. Due to the high pressures encountered, Almatec high pressure diaphragm pumps made of stainless steel (AH-S) are used in painting systems where there is only one pump as a central supply. The time required to clean the pump when changing colors is just as low as the amount of cleaning agent needed for cleaning.



**E-SERIES, CHEMICOR, AH-S, CXM**

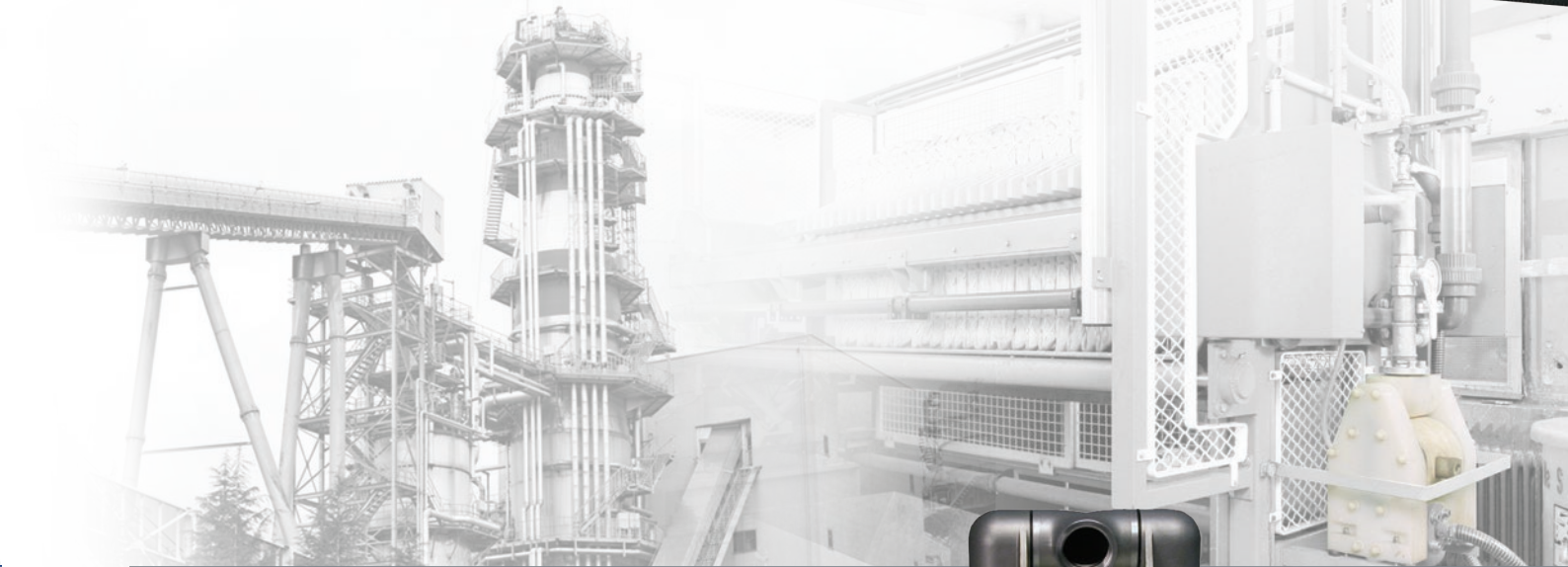
### Surface Technology Industry

The process chemicals used in surface technology place high requirements on materials and technologies used in the equipment operated in this industry. The media transported range from highly concentrated acids and bases to abrasive slurries. Air-operated double diaphragm pumps from the Almatec E-SERIES line are used in this case to pump etching agents as well as in grinding and drilling emulsions. Sludge can be compacted for disposal purposes using AHD/AHS Series high-pressure pumps in a filter press.



**E-SERIES, AHD/AHS**





## Paper Industry

In the paper and printing industries, air-operated double-diaphragm (AODD) pumps are primarily used to transport glues and printing inks. In many cases, a glue application pump of average size and made of PE from the E-SERIES is used. In the case of printing inks, Almatec pumps with a draining system offer numerous advantages. The colors must not be allowed to mix during a color change. The draining system allows the pump and pipeline to be emptied without disassembly. The color flows back into the supply container (saving money), and the amount of cleaning agent and solvent required is significantly reduced, thereby reducing the impact on the environment.



**E-SERIES, CHEMICOR**

## Water Treatment Industry

In industrial water-treatment applications, the Almatec air-operated diaphragm pumps are used for the following tasks, among others: taking samples for analysis around the clock, wastewater neutralization and feeding filter presses with sludge. While sample-taking and the proportioning of neutralization chemicals are done primarily using E-SERIES, CHEMICOR and CXM pumps, the Almatec high pressure pumps of the AHD series are available for filter-press feeding. These pumps allow operation over the entire range of flow rates without a risk of overpressure and without any additional regulation due to their ability to automatically adjust the pressure/quantity.



**E-SERIES, CHEMICOR, AHD, CXM**



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