



## Dosing pumps essential to China's Semi – Conductor manufacturing growth

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### Industry Overview

China, one of the world's largest manufacturer of electronics and the largest consumer of semiconductor products, accounts for about 40% of global consumption. Many of the leading international semiconductor companies have transferred their production to China, making the country a key link in the international industrial chain. In 2014, sales growth in the IC (Integrated Circuit) industry had been estimated to exceed 18%, with an industry size of over 250 billion Yuan.

### Wastewater Treatment System

The wastewater produced during semiconductor fabrication process, must be carefully handled to avoid harm to the environment.

**Verderflex® hose pumps** are predominately used in the dosing process to treat wastewater. The source of wastewater can be divided into three categories, manufacturing wastewater, drainage from Ultrapure water based manufacturing, and washing exhaust. When classified by type of contaminants, it can be divided into acid-alkali wastewater, wastewater containing fluoride, cyanide wastewater, grinding wastewater and heavy metal wastewater.

The most widely adopted method in wastewater treatment is chemical precipitation. Chemical precipitation

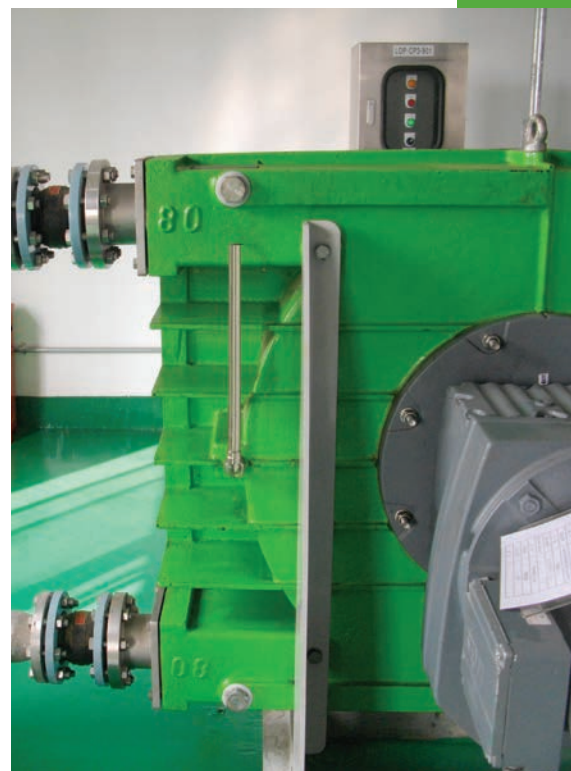
uses chemicals to react with dissolved ions to produce indissoluble sediments. The treatment of wastewater containing fluorine involves calcium ions reacting with fluoride ions, creating calcium fluoride precipitate which is then removed.

In order to reduce the residual concentration of fluorine ion, calcium concentration can be increased to achieve the expected treatment effect. The Verderflex® VF range of industrial hose pumps are widely used in this application for dosing lime, calcium chloride and other similar agents.

### Advantage of using VF peristaltic hose pumps

Verderflex peristaltic pumps are the ideal solution for the pumping lime because:

- The abrasive nature of lime, creates continual wear problems for progressing cavity pumps leading to ongoing high stator replacement costs and frequent maintenance downtime;
- lime is relatively highly viscous, usually too viscous for diaphragm pumps, causing them to clog up resulting in continual maintenance requirements;
- Verderflex pumps have a linear flow-speed characteristic, ideal for feedback control systems, allowing precise control of the chemicals being dosed, minimising chemical usage;



*The application uses a number of ▲ VF80 hose pumps to dose 10% lime media at a flow rate of 17.6m<sup>3</sup>/h and working pressures of 2 bar.*

- Verderflex pumps have a smooth liquid passage, there are no opportunities for product to settle and the peristaltic action keeps product in suspension rather than allowing settlement;
- Verderflex peristaltic pumps are designed for ease of use, reduced downtime and to the low cost of ownership.



### Verderflex

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