

ZENECA FINE CHEMICALS



One of three gas scrubbing and methanol condensation systems

MAIN CONTRACTOR:

ACWA Services Ltd

INDUSTRY:

Chemicals

**DATE OF CONTRACT
AWARD:**

March 1998

CONTRACT VALUE:

£482,000

**ACWA CONTRACT
NO:**

**A0587
A0523
A0221**

INTRODUCTION

One of three gas scrubbing and methanol condensation systems, with associated tanks, instrumentation and piping modules, for fungicide production plants.

DESCRIPTION

The systems are part of a package supplied by Krauss Maffei where the fungicide, as a methanol slurry, is fed into a centrifuge to separate the solids from the liquid. The wet cake is then transferred through a plate dryer and the final dry product conveyed to the packing plant.

Gas Recycle System

To dry the product and recover methanol used in the process, ACWA AIR supplied a nitrogen gas heating system and closed loop recycle facility which was incorporated as an integral part of the plate drying plant. Nitrogen is recycled by a booster fan through a steam heater and into the plate dryer to remove the evaporated methanol before it enters the ACWA AIR target plate scrubber. ACWA AIR also supplied the closed circuit hot water systems, with tanks, heat exchangers and pumps to provide essential heat for the dryers.

Scrubber / Condenser System

Nitrogen gas, direct from the plate dryer, enters the lower humidifying section of the ACWA AIR target plate scrubbing system, where it is saturated with methanol by action sprays, before passing upwards through target plates to be scrubbed by a flow of methanol. The target plate is a modified sieve, with baffles located directly above each perforation. As gases pass through these perforations at high velocity, the momentum of entrained dust particles causes them to impinge on the baffles; from which they are captured by methanol. The target plate is also an effective means of heat transfer for gas cooling and condensation of the methanol.

From the target plates, methanol gravitates via downcomers to an Integral recycle tank at the base of the scrubber, whilst the cooled, cleaned nitrogen passes through a demister and is returned to the booster fan — thus completing the recycle loop.

Scrubbing liquor (methanol) is then pumped through a plate type heat exchanger where it is cooled by chilled water to remove the heat of condensation, before being returned to the top target plate of the scrubber. The condensed methanol overflows from the base of the scrubber and is returned to the production plant.

ACWA Services Ltd
ACWA House
Keighley Road
Skipton
North Yorkshire
BD23 2UE

Tel: 01756 794794
Fax: 01756 790898
E-Mail: acwa@acwa.co.uk
Web: www.acwaair.co.uk