In 1996 we contacted an independent research company to test and confirm the efficiency of Filtronic AB's units. The research company we contacted was IVL, which is "The Swedish environmental research institute".

All Filtronic's MG-units still follows the same basic principle.

An excerpt of the IVL report is shown on the following pages.

FILTRONIC AB
HISSGATAN 2, BOX 2284, SE-53102 LIDKÖPING SWEDEN
TEL. +46 (0)510-20810, FAX +46 (0)510-20140, e-mail: office@filtronic.se, www.filtronic.se
POSTAL GIRO 419356-1, BANK GIRO 5381-7631, V.A.T.NO. SE556217823501
NORDEA STOCKHOLM SWEDEN, SWIFT-ADDRESS: NDEASESS, IBAN SE24 3000 0000 0302 7170 0505

IVL REPORT

L96/57

Translation of an Excerpt

FOR FILTRONIC AB

REPORT FROM AN INVESTIGATION OF THE FILTERING EFFICIENCY OF A FILTER UNIT DESIGNED FOR SOLDERING WORK IN THE ELECTRONICS INDUSTRY

Gothenburg March 1, 1996

THE SWEDISH ENVIRONMENTAL RESEARCH INSTITUTE

Kjell Peterson

1 INTRODUCTION

As an assignment from Filtronic AB, the Swedish Environmental Research Institute (IVL) has made an investigation of the filtering efficiency with respect to hydrocarbon emissions of a filter unit designed for soldering smoke in the electronics industry.

Contact man at IVL in this matter was the industrial safety engineer Kjell Peterson (telephone number +46 31 460080).

The tests were made on January 30, 1996 in the premises of IVL.

2. METHODOLOGY OF SAMPLING AND ANALYSIS

Samples were taken before and after a filter unit of type Mi-Gas 70.

Two gas streams were taken out before the filter unit partly for a GC/MS analysis (gas chromotograph/mass spectrometer), and partly for analysis of aldehydes.

Samples of the air after the filter unit were collected in a sample bag, which was filled continuously. Two gas streams were taken out from the sample bag partly for a GC/MS analysis, and partly for analysis of aldehydes.

The tests before and after the filter unit were made simultaneously in order to estimate the filtering efficiency of the filter.

During the tests approximately 11.4 metres of tin soldering (57 grams) type Almit KR-19 was used. The total volume of air which passed through the filter unit during the test period is estimated to approximately 70 m^3.

RESULT

3.1 Aldehydes

	Acetaldehyde ---µg/m3---
Before filter	279
After filter	36

3.2 Result GC/MS

To estimate the efficiency of the filter, the total quantity (C_7-C_{16}) of substances occurring in the test before filtering (counted as the total area under the total ion chromatogram) is compared with the total quantity after filtering. After compensation for zero tests, one can conclude that:

- total quantity of substances in the test before filtering = 430 µg/m^3
- total quantity of substances in the test after filtering = 30 µg/m^3
- the efficiency of the filter = 93%