

LABORATORY REPORT

TR 501

5.5.2005

Gas Liquid Chromatographic Analysis

Project: To analyse the Card Call flags for retained solvents

Requested By: Shane Dowling
Contact: 0411 238 704

A pack of Card Call flags were submitted for testing, exhibiting a strong odour. The odour was representative of retained solvents used in the printing process.

We analysed the printed flags by Gas Chromatography, to determine what solvents were present and in what concentration.

3 flags were taken from the middle of the pack and 3 samples cut from the top, centre and bottom of each of these flags, for representative sampling. These 9 samples were then tested by headspace analysis to determine what solvents were present.

Summary Of Results:

The summary is an average of the 9 samples tested

Solvent found	Mg / m ²
Methyl Iso Butyl Ketone	19
Xylene	84
Aliphatic Hydrocarbons	67
Cyclohexanone	193
Di Acetone Alcohol	458
Unknown	5
Isophorone	704
TOTAL	1530

Packaging Inks (Aust) Pty Ltd

The results of the analysis show there is an unusually high total retained solvent level of 1530mg / square metre, we would normally expect a result below 100mg. Two of the solvents present are Cyclohexanone and Isophorone, which represents more than 50% of the total retained solvent. Both these solvents have distinctive unpleasant odours and low exposure standards.

Exposure Limits (taken from Material Safety Data Sheets)

Isophorone	5ppm	28mg/m ³	TWA
Cyclohexanone	25ppm	200mg/m ³	TWA

GLC Analysis

Chromatographic conditions used:

- Make Shimadzu
- Model GC-8A
- Processor C-R6A Chromatopac CPU
- Column Stainless Steel 6ft X 1/8in
- Support Chromasorb WHP
- Mesh 80-100
- Liquid Phase C/WAX 20M
- Wt% 10%
- Nitrogen Gas 1.25 Kg/cm²
- Hydrogen Gas 0.70 Kg/cm²
- Air 0.70 Kg/cm²
- FID 200°C
- Column Temp 130°C isothermal
- Range 10³
- Attenuation 1
- Stop Time 12 minutes
- Incubation Time 60 minutes
- Incubation Temp. 180°C

The GC procedure was standard headspace analysis of the gases produced from incubating the samples for a given time.

Steve Graves
Technical Manager

12 Abbott Rd Seven Hills NSW 2147 **PO Box Mona Vale NSW 2103**
Phone 02 9624 8222 email:sales@packaginginks.com.au Fax 02 9838 7862