



**Printing / Coating**

# Printing / Coating

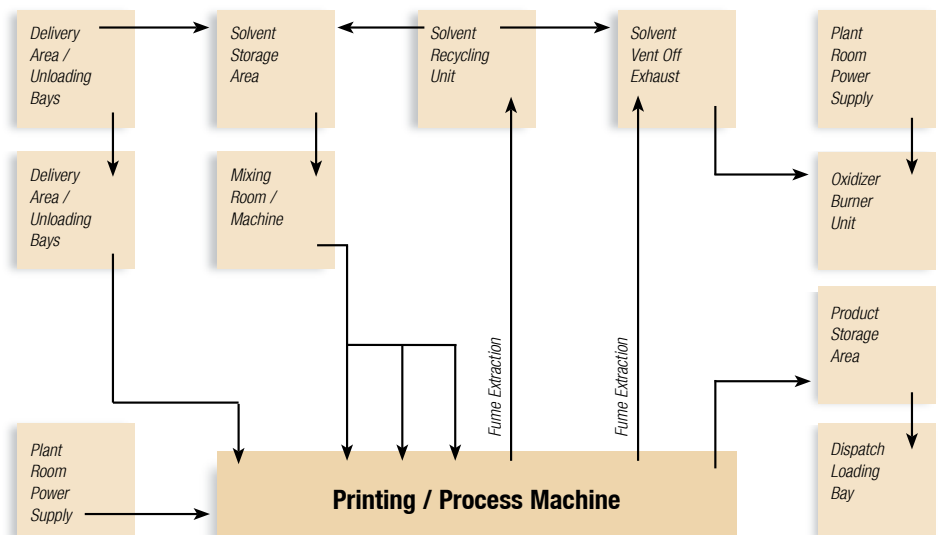


**Printed materials are around us in many different forms; newspapers, product packaging, film processing, video / audio tape production, food and groceries. The printing and coating industry is present in our daily lives. Solvents are used in the manufacture of printing inks, varnishes and other materials to be deposited.**

The presses used are not limited to ink printing and also find uses in other industries such as pharmaceutical to deposit anaesthetic on a bandage for example. Solvents are both toxic and flammable. During the drying

process, solvent levels must be monitored and maintained below internationally recognised standards and regulations.

## Process Overview



Almost all areas require a combination of gas, flame and smoke detection. In addition portable gas detectors may also be required for spot checks or maintenance

# Potential Applications



## Market Drivers

A printing machine represents a significant investment. Maximising production throughput (metres / hour) will reduce the payback period and maximise profits. Emissions of solvents (e.g. Ethanol, Butanone, MEK, Ethylacetate, Benzene and Xylene) must be minimised to meet latest international regulations. This requires significant investment in solvent reclamation equipment which must be protected.

By streamlining the printing process, maximising throughput and working within required safety standards, capital investment may be recouped more quickly. The use of gas detection equipment to monitor solvent emissions during operation allows this to take place.

In addition, the use of continuous flammable gas monitoring will reduce insurance premiums further while ensuring safety levels are maintained.

## Application 1:

Bulk Storage and Preparation

Solvents are both flammable and toxic. Bulk storage and preparation areas for production processes must be monitored for the build up of explosive atmospheres and dangers to personal health due to toxic gas exposure. Local fire regulations, as well as health and safety guidelines, must be followed. Typical equipment required will include infrared flammable gas detectors (point and open path) as well as flame and conventional smoke fire detectors.

## Application 2:

Dryer and Oven Monitoring

EN1539 specifically addresses safety requirements in which flammable substances are released from coating materials. Two types of dryers are defined; Type A operates on the principle of diluting the flammable atmosphere, while Type B inert the atmosphere so that there is insufficient oxygen to support combustion. The majority of applications utilise Type A.

Diagram 1 details a typical drying oven. As the printed material passes through the various stages of the dryer, solvent is evaporated through forced air ventilation and increasing temperature. The temperature profile is such that the solvent level is always maintained below pre-set limits that ensure an explosion cannot occur. By balancing the speed through which the printed material passes through the oven, the temperature profile and monitoring the gas level, throughput is maximised, minimising production cost.

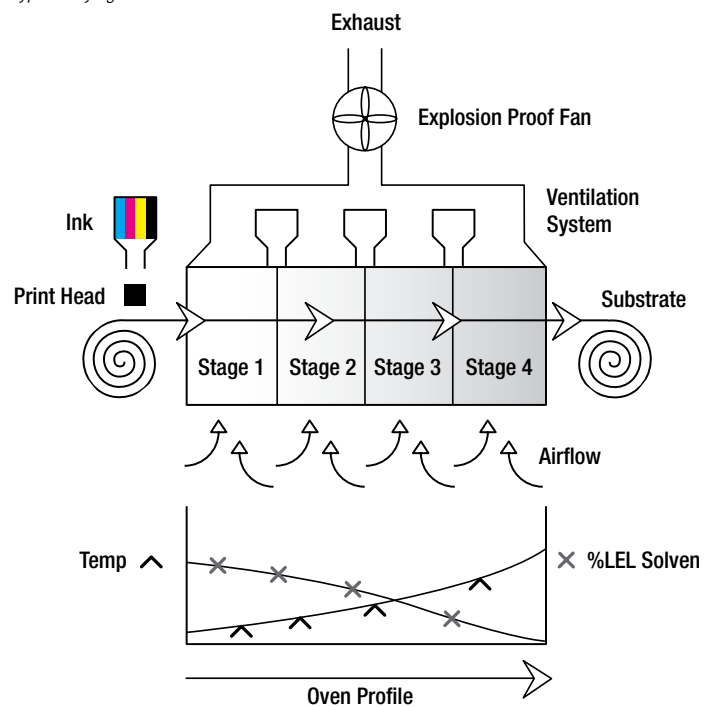
## Application 3:

Exhaust Monitoring

Forced air ventilation is used to carry the evaporated solvents away from the printing equipment. Explosion proof fans are used and the solvent is recycled in the vapour recovery plant or exhausted to atmosphere (subject to local environmental pollution regulations). Solvent levels in the ducts may be monitored using a duct mounted Searchline Excel or duct mounted Optima Plus as an indication that solvent levels within the printing process are within acceptable limits, as a secondary precaution. Areas where ventilation, or vapour recovery equipment is housed should also be installed with flammable gas detectors to mitigate the risk from leaks in the process.

## Diagram 1:

Type A Drying Oven



# Our Product Range



## Fixed Gas Monitoring

Honeywell Analytics offers a wide range of fixed gas detection solutions for a diverse array of industries and applications including: Commercial properties, industrial applications, semiconductor manufacturers, energy plants and petrochemical sites.

- » Detection of flammable, oxygen and toxic gases (including exotics)
- » Innovative use of 4 core sensing technologies – paper tape, electrochemical cell, catalytic bead and infrared
- » Capability to detect down to Parts Per Billion (ppb) or Percent by Volume (%v/v)
- » Cost effective regulatory compliance solutions

## Portable Gas Monitoring

When it comes to personal protection from gas hazards, Honeywell Analytics has a wide range of reliable solutions ideally suited for use in confined or enclosed spaces.

These include:

- » Detection of flammable, oxygen and toxic gases
- » Single gas personal monitors – worn by the individual
- » Multi-gas portable gas monitors – used for confined space entry and regulatory compliance
- » Multi-gas transportable monitors – used for temporary protection of area during site construction and maintenance activities

## Technical Services

At Honeywell Analytics, we believe in the value of great service and customer care. Our key commitment is providing complete and total customer satisfaction. Here are just a few of the services we can offer:

- » Full technical support
- » Expert team on hand to answer questions and queries
- » Fully equipped workshops to ensure quick turnaround on repairs
- » Comprehensive service engineer network
- » Training on product use and maintenance
- » Mobile calibration service
- » Customised programmes of preventative/corrective maintenance
- » Extended warranties on products

### Find out more

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Overview/Printing/Coating\_V2

02/08

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