

Solvent Management Report

Date range Jan 2008 to Dec 2009

Assumptions

The heat-set inks can contain between 25% and 51% VOCs, but the supplier of our inks has stated that the average is VOC is 35%. Similarly, other substances have wide ranges of solvent content. Therefore, best case and worst case calculations are used.

Solvent Management methods

Heat set inks contain a high proportion of solvent which is evaporated in a heated drier. The efflux from the drier is passed through a thermal oxidiser. The performance of these oxidisers is checked annually by an external competent organisation. It is not feasible to change to a different ink technology. Nor is it feasible to dictate to our customers the ink coverage; a page which is predominantly white consumes less ink than one which is predominantly pictures.

Solvent flow

Inks

	Min Kg	Max Kg	
Total input type I1	651414	670026	Solvent in inks to presses
Total output type O1	3257	3350	Solvent after abatement plant
Total output type O4	19542	20101	Uncaptured solvent
Total output type O5	628615	646575	Incinerated solvent
Total output type O8	1233	1269	Solvent sent to recycling

Blanket wash

	Min Kg	Max Kg	
Total input type I1	3240	6840	Solvent in wash to presses
Total output type O4	97	205	Uncaptured solvent
Total output type O6	3143	6635	Solvent in collected waste

Roller wash

	Min Kg	Max Kg	
Total input type I1	216.9	301.2	Solvent in wash to presses
Total output type O4	10.8	15.1	Uncaptured solvent
Total output type O6	206.0	286.1	Solvent in collected waste

Fugative emissions

	Min Kg	Max Kg	
Total inputs	654871	677167	
Total O1 + O5 + O6 + O8	636454	658115	
Total fugitive	18417	19052	
Fugitive as %	2.8	2.8	% of input

Inks Supplier	Product name	% Petroleum distillates, hydrotreated light, Risk phrase R65	% Butylated hydroxytoluene, Risk phrases R58, R53, R22	Best case % VOC	Worst case % VOC
Flint Schmidt	Premoterm UV Cyan	35	<1	35	36
Flint Schmidt	Premoterm UV Yellow	35	<1	35	36
Flint Schmidt	Premoterm UV Magenta	35	<1	35	36
Flint Schmidt	Premoterm UV Black	35	<1	35	36

Supplier	Date range	kg	Min VOC	Max VOC
			kg	kg
Flint Schmidt	Jan 200-Dec 2008	Purchased qty 1861183	<u>651414.05</u>	<u>670025.9</u>
			Total	
Flint Schmidt	Jan 200-Dec 2008	Sent to recycling 3524.00	<u>1233.4</u>	<u>1268.64</u>

BLANKET WASH

Supplier **Varn**
Type **Natural Wash**

Contents	Min %	Max %	Risk Phrase
Petroleum Distillate	30	60	R65,66
Amine (petroleum)	0	1	R22,38,41,50/53
Distillates (petroleum)	5	10	R65,66
Naptha (Petroleum)			
Hydrotreated Heavy	1	5	R10,38,51/53,65
Total	36	76	

Substance	Date range	Purchased qty. kg	Min VOC kg	Max VOC kg
Varn Natural Wash	Jan 2008-Dec.2008	90000	32400	68400
Total			32400	68400

ROLLER WASH

**Supplier
Type**

**Varn
MRC**

Contents	Min %	Max %	Risk Phrase
Ethanol	10	30	R11
n-Hexane	1	5	R11,38,51/53,65,67
petane	1	5	R12,38,51/53,65,67
Naphtha(petroleum)	60.0	100	R11,38,51/53,65,67
	72	100	

Date range	Purchased qty.	Min VOC	Max VOC
	kg	kg	kg
Jan 2008-Dec 2008	3012	2168.64	3012

ABATEMENT PLANT

Date measured		CO	NOx as NO ₂	VOC	Stack Temp
		mg/Nm ³	mg/Nm ³	mg/Nm ³	C
	PG6/16 limit	100	100	100	
	SG6 limit	100	100	20	
	Plant				
17-Apr-08	Lithoman 1	85.00	68.30	8.20	350
17-Apr-08	Lithoman 2	64.10	69.30	2.90	361
12-Mar-08	Katec	47.80	27.90	0.90	292
11-Mar-08	Rotoman 1 Lower	98.00	69.60	22.90	350
11-Mar-08	Rotoman 1 Upper	84.20	36.90	17.90	348
10-Mar-08	Rotoman 2 Lower	62.30	25.30	3.90	334
10-Mar-08	Rotoman 2 Upper	33.50	18.10	9.70	347
12-Mar-08	Rotoman 3 Lower	47.60	31.20	3.00	350
12-Mar-08	Rotoman 3 Upper	44.70	28.40	3.20	348