2. Solvent Management Spreadsheets-single

(for operators with only one machine)

You must make a return for each site, covering all the machines on the site. You need to record the weight of work processed and the amount of solvent added for each machine as well as the estimated still residue. If you have more than one machine on site then, in order to claim the correct allowance for still residue, keep the residue obtained from each solvent type and each still cleaning method separately. For the Annual Inventory the total weight of solvent used, corrected for solvent sent for recycling and the 'Annual spot cleaning factor', and total weight of work processed, are used to calculate a site emission figure. To help you keep a check on your machines performance a monthly estimate is made of solvent emisions for each machine.

If you have a single machine on site you can use the 'Annual (Single machine)' spreadsheet or printed sheet. The spreadsheet version will automatically transfer the monthly totals across and calculate the solvent emissions, you just need to add in the relevant 'Annual Spot Cleaning Correction Factor'.

If you have a multiple machines on site you can use the 'Annual (Multiple machines)' spreadsheet or printed sheet. The spreadsheet version will automatically transfer the monthly totals for each machine across and calculate the solvent emissions, you just need to add in the relevant 'Annual Spot Cleaning Correction Factor'.

Before starting to record solvent usage ensure that the machine is filled to its normal operating level. This is particularly important if you are installing a new machine.

If you anticipate changing or adding a machine during the annual period you should use the multiple machine sheet and show each machine for the period that it is in use. If you are using the spreadsheet version, you need to fill in the following fields in the first (i.e. furthest left on the spreadsheet) monthly sheet as they transfer automatically to all the following months: 'Machine' (top left of sheet), put a cross in the relevant box for 'Method of still cleaning' (centre left of sheet) and put a cross in the relevant box for 'Type of Solvent' (lower left of sheet).

1. Weekly Inventory Sheet:

It is suggested, that for practical purposes, the 'Weekly' Sheet is filled in manually. This must be carried out for each load on each machine.

1.1 Print off copies of the 'Weekly Inventory Sheet', one for each machine, and fill in the details for the 'Site', 'Machine' and 'Week' at the top.

1.2 For each load, record the weight (kg) on the relevant daily line. Total this up and complete the 'Daily Total Weight ' column.

1.3 When you add solvent to the machine, record the volume (litres) in the right hand column. This is the 'Solvent Used'.

1.4 At the end of the week total the daily and then weekly weight of work processed and the amount of solvent added.

1.5 Select the method of still cleaning (tick or mark the appropriate box). Enter any other information you may wish to record. Sign and date the sheet.

2. Monthly Inventory Sheet:

The 'Monthly' Sheet may be completed, either using this spreadsheet, or filled out manually each month. This should be done at the end of each month. If you have more than one machine on site you need to complete a form or seperate spreadsheet every month for each machine.

2.1 Use the spreadsheet or print out a copy of the 'Monthly Sheet', complete the details for 'Site', 'Machine' and 'Month and Year' at the top of the sheet.

2.2 Enter the 'Week ending / Week No.', transfer the weekly totals for 'Weight of work processed' and 'Solvent Used' to the relevant lines under the appropriate week column.

2.3 Estimate the amount of Still residue you have collected from each machine over the month and enter into the relevant line under the appropriate week column. You need this figure so that the monthly solvent usage can be calculated reasonably accurately. When still waste is collected, you may need to adjust the monthly figure so that the total for the preceding period is correct.

2.4 At the end of the month, if you are filling in the sheets manually total up the 'Weight of work processed' and 'Solvent used'.

2.5 Select the method of still cleaning the machine uses and place an 'X' in the relevant box. If you are filling in the sheets manually copy down the 'Estimated still residue for month' to the relevant box and calculate the 'Allowance' using the formula shown. You can now calculate your 'Nominal Monthly Solvent Use' for the machine using the formula provided.

2.6 Select the type of solvent you are using and place an 'X' in the relevant box. If you are filling in the sheets manually you can now calculate the 'Weight of work / litre of solvent', 'the Solvent emitted' and 'Weight of solvent used' for the month.

3. Annual Inventory Sheet - Solvent Management Plan

The 'Annual' Sheet - Solvent Management Plan may be completed, either using the relevant spreadsheet, or filled out manually. If you do this at the end of each month you will see how you are progressing with compliance. If you use the spreadsheet version, either the 'Annual (Single machine)' or 'Annual (Multiple machine)' spreadsheet, will be completed automatically based on the entries in the Monthly sheets. You just need to insert the 'Site' name and 'Year' at the top of the sheet and the 'Annual Spot Cleaning Correction Factor' in the box provided on the lower left of the spreadsheet.

To complete the sheet manually:

3.1 Print out a copy of the 'Annual Sheet', complete the details for 'Site' and 'Year' at the top of the sheet.

3.2 Record the month and year in the left hand column.

3.3 Enter the 'Annual Spot Cleaning Correction Factor' in the box provided on the lower left of the spreadsheet.

3.4 Transfer the monthly totals for 'Weight of work processed' and 'Weight of solvent used' to columns 'a' and 'b'. Do this for each machine if you have more than one machine and are using the 'Annual (Multiple machines)' spreadsheet.

3.5 You can also transfer the monthly totals for 'Estimated still residue' to the columns on the right if you wish, so that you can manually check that the totals for the year for each still cleaning method and solvent type to ensure that they correspond to your waste collection transfer note totals.

3.6 If you want to check your ongoing solvent mileage then total the 'Monthly weight of work processed' and 'Weight of solvent used' for all the months and calculate the 'Monthly solvent emitted per kg of work processed' using the formula provided.

3.7 To obtain the annual result, sum the 'Total annual weight of work processed' and then the 'Total annual weight of solvent used' which should include the 'Annual spot cleaning correction factor'.

3.8 Using the formula provided calculate the ' Annual total of solvent emitted per kg of work processed. The result should be 20 g/kg or less.

Cells in the spreadsheets, highlighted like this, contain the results that are transferred to the next sheet i.e. Weekly results to transfer to Monthly sheet or Monthly results to transfer to Annual sheet.

For spreadsheet users:

Cells in the spreadsheets, highlighted like this, should have data entered in them where applicable

Cells in the spreadsheets, highlighted like this, contain formulas, DO NOT ENTER DATA IN THEM

ANNUAL INVENTORY SHEET - SOLVENT MANAGEMENT PLAN - SINGLE MACHINE

Site: Fircroft **Year:**

Month and Year	Monthly weight of work processed	Monthly weight of solvent used	Monthly solvent emitted per kg of work processed	Estimated still residue
	a	b	l = b × 1000 ÷ a	(Use this to check the total for each method of still cleaning against your waste collection notes, adjust the final months figure as necessary to correspond)
	(kg)	(kg)	(g/kg)	(litres)
Jan12	337	9.92	29.44	8.0
Feb12	369	3.52	9.54	8.0
	507	8.32	16.41	8.0
	0	0.00		8.0
	0	0.00		8.0
	0	0.00		8.0
	0	0.00		8.0
	0	0.00		8.0
	0	0.00		8.0
	0	0.00		8.0
	0	0.00		8.0
Annual totals	1213	21.76		96.0
	n	= Total b		

Annual Spot Cleaning Correction Factor (see Note 2):	Total annual weight of solvent used		Annual total of solvent emitted per kg of work processed
m	p		q
	= Total b + m		= p × 1000 ÷ n
(kg)	(kg)		(g/kg)
	21.76	Annual result	17.94

Weight of work required to comply with regulations (kg):	1088	Complies with Regulations?	YES

1. Refer to written explanation of regulations for more details.
2. If solvent borne spot cleaners are used, enter either 10kg in the 'Annual Spot Cleaning Factor' or the total weight of the solvent content used, as advised by your Supplier.
3. The centre column provides the weight of solvent in grams emitted per kg of work processed (g/kg), this is needed to satisfy the legal requirement.

MONTHLY INVENTORY SHEET

Site: **Fircroft** **Month and year:** **Jan12**

Machine: **Bowe P300**

Week ending / Week No.

7/1	14/1	21/1	28/1	

Weight of work processed (kg)

70	105	75	87		Monthly Total Weight (kg) **a**
					337

Solvent used (litres)

1	1	8	1		Monthly Total (litres) **c**
					11

Estimated still residue for month (litres)

d	8

Note: Estimate the amount of residue collected so that a draft solvent usage figure can be obtained. You will need to adjust this figure from time to time so that the total for the year corresponds to your waste collection transfer notes.

Still type / Allowance factor

Method of still cleaning		Waste Allowance Factor **e**	Total **d**	Allowance **f** = e × d
Manual rake out		0.15	0	0
Pumped out	x	0.6	8	4.8

Nominal Monthly Solvent Use	(litres)	**g** = c - f	**6.2**

Solvent emission calculation

Type of Solvent		Factor: specific gravity of solvent	**Weight of work / litre of solvent**	Solvent emitted (should be 20g/kg or less)	**Weight of solvent used**
		(g/l)	(kg / l)	g / kg	(kg)
		h	**j** = a ÷ g	**k** = h ÷ j	**b** = g × (h ÷ 1000)
Perc	*	1600	**54.35**	**29.44**	**9.92**
Siloxane		970			
Hydrocarbon		970			
Other					

Solvent Usage Check : **PROBLEM**

MONTHLY INVENTORY SHEET

Site: **Fircroft** **Month and year:** **Feb12**

Machine: **Bowe P300**

Week ending / Week No.

4/2	11/2	18/2	25/2	

Weight of work processed (kg)

119	61	96	93		Monthly Total Weight (kg) **a** 369

Solvent used (litres)

2	1	3	1		Monthly Total (litres) **c** 7

Estimated still residue for month (litres)

d	8

Note: Estimate the amount of residue collected so that a draft solvent usage figure can be obtained. You will need to adjust this figure from time to time so that the total for the year corresponds to your waste collection transfer notes.

Still type / Allowance factor

Method of still cleaning		Waste Allowance Factor **e**	Total **d**	Allowance **f** = e × d
Manual rake out		0.15	0	0
Pumped out	x	0.6	8	4.8

Nominal Monthly Solvent Use	(litres)	**g** = c - f	**2.2**

Solvent emission calculation

Type of Solvent		Factor: specific gravity of solvent (g/l) **h**	**Weight of work / litre of solvent** (kg / l) **j** = a ÷ g	Solvent emitted (should be 20g/kg or less) g / kg **k** = h ÷ j	**Weight of solvent used** (kg) **b** = g × (h ÷ 1000)
Perc	*	1600	**167.73**	**9.54**	**3.52**
Siloxane		970			
Hydrocarbon		970			
Other					

Solvent Usage Check : **OK**

MONTHLY INVENTORY SHEET

Site: **Fircroft** **Month and year:**

Machine: **Bowe P300**

Week ending / Week No.

3/3	10/3	17/3	24/3	31/3

Weight of work processed (kg)

86	82	96	104	139	Monthly Total Weight (kg) **a** 507

Solvent used (litres)

1	1	1	3	4	Monthly Total (litres) **c** 10

Estimated still residue for month (litres)

d	8

Note: Estimate the amount of residue collected so that a draft solvent usage figure can be obtained. You will need to adjust this figure from time to time so that the total for the year corresponds to your waste collection transfer notes.

Still type / Allowance factor

Method of still cleaning		Waste Allowance Factor **e**	Total **d**	Allowance **f** = e × d
Manual rake out		0.15	0	0
Pumped out	x	0.6	8	4.8

Nominal Monthly Solvent Use	(litres)	**g** = c - f	**5.2**

Solvent emission calculation

Type of Solvent		Factor: specific gravity of solvent (g/l) **h**	**Weight of work / litre of solvent** (kg / l) **j** = a ÷ g	Solvent emitted (should be 20g/kg or less) g / kg **k** = h ÷ j	**Weight of solvent used** (kg) **b** = g × (h ÷ 1000)
Perc	*	1600	**97.50**	**16.41**	**8.32**
Siloxane		970			
Hydrocarbon		970			
Other					

Solvent Usage Check : **OK**

MONTHLY INVENTORY SHEET

Site: **Fircroft** **Month and year:**

Machine: **Bowe P300**

Week ending / Week No.

Weight of work processed (kg)

					Monthly Total Weight (kg)
					a
					0

Solvent used (litres)

					Monthly Total (litres)
					c
					0

Estimated still residue for month (litres)

d	8

Note: Estimate the amount of residue collected so that a draft solvent usage figure can be obtained. You will need to adjust this figure from time to time so that the total for the year corresponds to your waste collection transfer notes.

Still type / Allowance factor

Method of still cleaning		Waste Allowance Factor **e**	Total **d**	Allowance **f** = e × d
Manual rake out		0.15	0	0
Pumped out	x	0.6	8	4.8

Nominal Monthly Solvent Use	(litres)	**g** = c - f	**0**

Solvent emission calculation

Type of Solvent		Factor: specific gravity of solvent	**Weight of work / litre of solvent**	Solvent emitted (should be 20g/kg or less)	**Weight of solvent used**
		(g/l)	(kg / l)	g / kg	(kg)
		h	**j** = a ÷ g	**k** = h ÷ j	**b** = g × (h ÷ 1000)
Perc	*	1600			
Siloxane		970			
Hydrocarbon		970			
Other					

Solvent Usage Check : **OK**

MONTHLY INVENTORY SHEET

Site: **Fircroft** **Month and year:**

Machine: **Bowe P300**

Week ending / Week No.

Weight of work processed (kg)

					Monthly Total Weight (kg)
					a
					0

Solvent used (litres)

					Monthly Total (litres)
					c
					0

Estimated still residue for month (litres)

d	8

Note: Estimate the amount of residue collected so that a draft solvent usage figure can be obtained. You will need to adjust this figure from time to time so that the total for the year corresponds to your waste collection transfer notes.

Still type / Allowance factor

Method of still cleaning		Waste Allowance Factor **e**	Total **d**	Allowance **f** = e × d
Manual rake out		0.15	0	0
Pumped out	x	0.6	8	4.8

Nominal Monthly Solvent Use	(litres)	**g** = c - f	**0**

Solvent emission calculation

Type of Solvent		Factor: specific gravity of solvent	**Weight of work / litre of solvent**	Solvent emitted (should be 20g/kg or less)	**Weight of solvent used**
		(g/l)	(kg / l)	g / kg	(kg)
		h	**j** = a ÷ g	**k** = h ÷ j	**b** = g × (h ÷ 1000)
Perc	*	1600			
Siloxane		970			
Hydrocarbon		970			
Other					

Solvent Usage Check : **OK**

MONTHLY INVENTORY SHEET

Site: **Fircroft** **Month and year:**

Machine: **Bowe P300**

Week ending / Week No.

Weight of work processed (kg)

					Monthly Total Weight (kg)
					a
					0

Solvent used (litres)

					Monthly Total (litres)
					c
					0

Estimated still residue for month (litres)

d	8

Note: Estimate the amount of residue collected so that a draft solvent usage figure can be obtained. You will need to adjust this figure from time to time so that the total for the year corresponds to your waste collection transfer notes.

Still type / Allowance factor

Method of still cleaning		Waste Allowance Factor **e**	Total **d**	Allowance **f** = e × d
Manual rake out		0.15	0	0
Pumped out	x	0.6	8	4.8

Nominal Monthly Solvent Use	(litres)	**g** = c - f	**0**

Solvent emission calculation

Type of Solvent		Factor: specific gravity of solvent	**Weight of work / litre of solvent**	Solvent emitted (should be 20g/kg or less)	**Weight of solvent used**
		(g/l)	(kg / l)	g / kg	(kg)
		h	**j** = a ÷ g	**k** = h ÷ j	**b** = g × (h ÷ 1000)
Perc	*	1600			
Siloxane		970			
Hydrocarbon		970			
Other					

Solvent Usage Check : **OK**

MONTHLY INVENTORY SHEET

Site: **Fircroft** **Month and year:**

Machine: **Bowe P300**

Week ending / Week No.

Weight of work processed (kg)

					Monthly Total Weight (kg)
					a
					0

Solvent used (litres)

					Monthly Total (litres)
					c
					0

Estimated still residue for month (litres)

d	8

Note: Estimate the amount of residue collected so that a draft solvent usage figure can be obtained. You will need to adjust this figure from time to time so that the total for the year corresponds to your waste collection transfer notes.

Still type / Allowance factor

Method of still cleaning		Waste Allowance Factor **e**	Total **d**	Allowance **f** = e × d
Manual rake out		0.15	0	0
Pumped out	x	0.6	8	4.8

Nominal Monthly Solvent Use	(litres)	**g** = c - f	**0**

Solvent emission calculation

Type of Solvent		Factor: specific gravity of solvent	**Weight of work / litre of solvent**	Solvent emitted (should be 20g/kg or less)	**Weight of solvent used**
		(g/l)	(kg / l)	g / kg	(kg)
		h	**j** = a ÷ g	**k** = h ÷ j	**b** = g × (h ÷ 1000)
Perc	*	1600			
Siloxane		970			
Hydrocarbon		970			
Other					

Solvent Usage Check : **OK**

MONTHLY INVENTORY SHEET

Site: **Fircroft** **Month and year:**

Machine: **Bowe P300**

Week ending / Week No.

Weight of work processed (kg)

					Monthly Total Weight (kg)
					a
					0

Solvent used (litres)

					Monthly Total (litres)
					c
					0

Estimated still residue for month (litres)

d	8

Note: Estimate the amount of residue collected so that a draft solvent usage figure can be obtained. You will need to adjust this figure from time to time so that the total for the year corresponds to your waste collection transfer notes.

Still type / Allowance factor

Method of still cleaning		Waste Allowance Factor **e**	Total **d**	Allowance **f** = e × d
Manual rake out		0.15	0	0
Pumped out	x	0.6	8	4.8

Nominal Monthly Solvent Use	(litres)	**g** = c - f	**0**

Solvent emission calculation

Type of Solvent		Factor: specific gravity of solvent	**Weight of work / litre of solvent**	Solvent emitted (should be 20g/kg or less)	**Weight of solvent used**
		(g/l)	(kg / l)	g / kg	(kg)
		h	**j** = a ÷ g	**k** = h ÷ j	**b** = g × (h ÷ 1000)
Perc	*	1600			
Siloxane		970			
Hydrocarbon		970			
Other					

Solvent Usage Check : **OK**

MONTHLY INVENTORY SHEET

Site: **Fircroft** **Month and year:**

Machine: **Bowe P300**

Week ending / Week No.

Weight of work processed (kg)

					Monthly Total Weight (kg)
					a
					0

Solvent used (litres)

					Monthly Total (litres)
					c
					0

Estimated still residue for month (litres)

d	8

Note: Estimate the amount of residue collected so that a draft solvent usage figure can be obtained. You will need to adjust this figure from time to time so that the total for the year corresponds to your waste collection transfer notes.

Still type / Allowance factor

Method of still cleaning		Waste Allowance Factor **e**	Total **d**	Allowance **f** = e × d
Manual rake out		0.15	0	0
Pumped out	x	0.6	8	4.8

Nominal Monthly Solvent Use	(litres)	**g** = c - f	**0**

Solvent emission calculation

Type of Solvent		Factor: specific gravity of solvent	**Weight of work / litre of solvent**	Solvent emitted (should be 20g/kg or less)	**Weight of solvent used**
		(g/l)	(kg / l)	g / kg	(kg)
		h	**j** = a ÷ g	**k** = h ÷ j	**b** = g × (h ÷ 1000)
Perc	*	1600			
Siloxane		970			
Hydrocarbon		970			
Other					

Solvent Usage Check : **OK**

MONTHLY INVENTORY SHEET

Site: **Fircroft** **Month and year:**

Machine: **Bowe P300**

Week ending / Week No.

Weight of work processed (kg)

					Monthly Total Weight (kg)
					a
					0

Solvent used (litres)

					Monthly Total (litres)
					c
					0

Estimated still residue for month (litres)

d	8

Note: Estimate the amount of residue collected so that a draft solvent usage figure can be obtained. You will need to adjust this figure from time to time so that the total for the year corresponds to your waste collection transfer notes.

Still type / Allowance factor

Method of still cleaning		Waste Allowance Factor **e**	Total **d**	Allowance **f** = e × d
Manual rake out		0.15	0	0
Pumped out	x	0.6	8	4.8

Nominal Monthly Solvent Use	(litres)	**g** = c - f	**0**

Solvent emission calculation

Type of Solvent		Factor: specific gravity of solvent	**Weight of work / litre of solvent**	Solvent emitted (should be 20g/kg or less)	**Weight of solvent used**
		(g/l)	(kg / l)	g / kg	(kg)
		h	**j** = a ÷ g	**k** = h ÷ j	**b** = g × (h ÷ 1000)
Perc	*	1600			
Siloxane		970			
Hydrocarbon		970			
Other					

Solvent Usage Check : **OK**

MONTHLY INVENTORY SHEET

Site: **Fircroft** **Month and year:**

Machine: **Bowe P300**

Week ending / Week No.

Weight of work processed (kg)

					Monthly Total Weight (kg)
					a
					0

Solvent used (litres)

					Monthly Total (litres)
					c
					0

Estimated still residue for month (litres)

d	8

Note: Estimate the amount of residue collected so that a draft solvent usage figure can be obtained. You will need to adjust this figure from time to time so that the total for the year corresponds to your waste collection transfer notes.

Still type / Allowance factor

Method of still cleaning		Waste Allowance Factor **e**	Total **d**	Allowance **f** = e × d
Manual rake out		0.15	0	0
Pumped out	x	0.6	8	4.8

Nominal Monthly Solvent Use	(litres)	**g** = c - f	**0**

Solvent emission calculation

Type of Solvent		Factor: specific gravity of solvent	**Weight of work / litre of solvent**	Solvent emitted (should be 20g/kg or less)	**Weight of solvent used**
		(g/l)	(kg / l)	g / kg	(kg)
		h	**j** = a ÷ g	**k** = h ÷ j	**b** = g × (h ÷ 1000)
Perc	*	1600			
Siloxane		970			
Hydrocarbon		970			
Other					

Solvent Usage Check : **OK**

MONTHLY INVENTORY SHEET

Site: **Fircroft** **Month and year:**

Machine: **Bowe P300**

Week ending / Week No.

Weight of work processed (kg)

					Monthly Total Weight (kg)
					a
					0

Solvent used (litres)

					Monthly Total (litres)
					c
					0

Estimated still residue for month (litres)

d	8

Note: Estimate the amount of residue collected so that a draft solvent usage figure can be obtained. You will need to adjust this figure from time to time so that the total for the year corresponds to your waste collection transfer notes.

Still type / Allowance factor

Method of still cleaning		Waste Allowance Factor **e**	Total **d**	Allowance **f** = e × d
Manual rake out		0.15	0	0
Pumped out	x	0.6	8	4.8

Nominal Monthly Solvent Use	(litres)	**g** = c - f	**0**

Solvent emission calculation

Type of Solvent		Factor: specific gravity of solvent	**Weight of work / litre of solvent**	Solvent emitted (should be 20g/kg or less)	**Weight of solvent used**
		(g/l)	(kg / l)	g / kg	(kg)
		h	**j** = a ÷ g	**k** = h ÷ j	**b** = g × (h ÷ 1000)
Perc	*	1600			
Siloxane		970			
Hydrocarbon		970			
Other					

Solvent Usage Check : **OK**

WEEKLY INVENTORY SHEET

Site ……..……. Machine ……. Week ending / Week No. ……..……

Load No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Daily Total Weight (kg)	Solvent Added (litres)
Monday	Weight																	
Tuesday	Weight																	
Wednesday	Weight																	
Thursday	Weight																	
Friday	Weight																	
Saturday	Weight																	
Sunday	Weight																	

Total for Week		

Indicate as appropriate	Method of still cleaning	Date still cleaned
	Manual rake out	
	Pumped out	

Activity	**Date**
Water separator cleaned	

Signed ……..……...…….. **Date** ……....

Maintenance and/or service carried out (enter date)
Details:

The Total Weight for Week figure and details of Solvent Added should be transferred to your MONTHLY INVENTORY SHEET