FS Section	Content field	Explanation of content
1. Title	**1.1 Title of SPERC**	**Formulation of water borne liquid coatings and inks**
	1.2 SPERC codes:	CEPE SPERC 2.2a.v2 Formulation of water borne coatings and inks - large scale (>1,000 tpa solvent use) – volatiles CEPE SPERC 2.2b.v2 Formulation of water borne coatings and inks - small scale (<1,000 tpa solvent use) – volatiles CEPE SPERC 2.2c.v2 Formulation of water borne coatings and inks – non-volatiles
2. Scope	**2.1 Substance/Product Domain**	
	Substance types / functions / properties included or excluded:	Includes: Volatile organic compounds Particulates Volatile and non-volatile compounds in liquid mixtures, Solids in polymeric liquids Intended compounds not classified as PBT or vPvB Volatile compounds rapidly degradable Water-borne mixtures may contain biocidal agents of product type 2, 6 or 7
	Additional specification of product types covered:	Water borne coatings and inks: - may contain solvent up to 25 % volatile content.
	Inclusion of sub-SPERCs: y/n	Yes
	2.2 Process domain	
	Description of activities/processes:	Covers the whole process of formulation/manufacture of water borne liquid coatings and inks.
	2.3 List of applicable UDs	
	LCS:	F (Formulation or re-packing)
	SU:	n/a
	PC:	9a, 9b, 9c, 18
3. Operational conditions (including information on technical strategies to achieve high raw material efficiency)	**3.1 Conditions of use**	
	Location of use:	Indoor
	Water contact during use: y/n	Y
	Connected to a standard municipal biological STP: y/n	Y
	Rigorously contained system with minimisation of release to the environment: y/n	N
	Further operational conditions impacting on **releases to the environment.**	Process efficiency: maximise the efficiency of use of input raw materials through the highest conversion into formulated products
	3.2 Waste Handling and Disposal	
	Waste Handling and Disposal:	Process waste may be recycled or incinerated by waste disposal company
	RMM limiting release to air:	Installation controlled under IED– abatement or use of solvent management plan

<table>
<tr><th>FS Section</th><th>Content field</th><th>Explanation of content</th></tr>
<tr><td rowspan="8">4. Obligatory RMMs onsite</td><td></td><td></td></tr>
<tr><td>RMM Efficiency (air): numerical value</td><td>0.95 – 0.97</td></tr>
<tr><td>Reference for RMM Efficiency (air):</td><td>Total emission limits from the Industrial Emissions Directive – IED - (2010/75/EU) [http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1501849273822&uri=CELEX:32010L0075 and corrigendum]
Individual organic solvents
CEPE expert decision based on EMISSION SCENARIO DOCUMENT ON COATINGS INDUSTRY (PAINTS, LACQUERS AND VARNISHES), OECD, July 2009 [http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ENV/JM/MONO(2009)24&doclanguage=en</td></tr>
<tr><td>RMM limiting release to water:</td><td>Not applicable</td></tr>
<tr><td>RMM Efficiency (water): numerical value</td><td>Not applicable</td></tr>
<tr><td>Reference for RMM Efficiency (water):</td><td>Not applicable</td></tr>
<tr><td>RMM limiting release to soil:</td><td>Not applicable</td></tr>
<tr><td>RMM Efficiency (soil): numerical value</td><td>Not applicable</td></tr>
<tr><td>Reference for RMM Efficiency (soil):</td><td>Not applicable</td></tr>
<tr><td rowspan="15">5. Exposure Assessment Input</td><td>5.1 Substance use rate</td><td></td></tr>
<tr><td>Amount of substance use per day: numerical value</td><td>Typical maximum daily usage, for any one substance, based on sector knowledge
150 000 kg product/day at any one location

Note: in many coatings and inks manufacturing facilities, usage rates will be substantially below the figures shown
<table>
<tr><th>Substance function</th><th>Daily substance use rate in kg/d</th></tr>
<tr><td>Pigment/extender/filler</td><td>25 000</td></tr>
<tr><td>Binder</td><td>25 000</td></tr>
<tr><td>Water</td><td>75 000</td></tr>
<tr><td>Organic solvent/coalescent</td><td>10 000</td></tr>
<tr><td>Additives</td><td>1 000</td></tr>
</table></td></tr>
<tr><td>Fraction of EU tonnage used in region: numerical value</td><td>Not relevant as not widespread use</td></tr>
<tr><td>Fraction of Regional tonnage used locally: numerical value</td><td>Not relevant as not widespread use</td></tr>
<tr><td>Justification / information source:</td><td></td></tr>
<tr><td>5.2 Days emitting</td><td></td></tr>
<tr><td>Number of emission days per year: numerical value</td><td>Continuous release: 225 d/y</td></tr>
<tr><td>Justification / information source:</td><td>Typical industry situation (5 working days a week, shut down for vacation, no need for continuous shift)</td></tr>
<tr><td>5.3 Release factors</td><td></td></tr>
<tr><td>SPERC identifier:</td><td>CEPE SPERC 2.2a.v2</td></tr>
<tr><td>ERC:</td><td>2</td></tr>
<tr><td>sub-SPERC applicability:</td><td>Formulation of water borne coatings and inks - large scale (>1,000 tpa solvent use) – volatiles</td></tr>
<tr><td>5.3.1 Release Factor – air</td><td></td></tr>
<tr><td>Numeric value / percent of input amount (Air): numerical value

Justification of RFs (Air):</td><td>1.1% (total volatiles)

EMISSION SCENARIO DOCUMENT ON COATINGS INDUSTRY – ESD - (PAINTS, LACQUERS AND VARNISHES), OECD, July 2009 [http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ENV/JM/MONO(2009)24&doclanguage=en] (table 5.10)</td></tr>
<tr><td>5.3.2 Release Factor – water</td><td></td></tr>
</table>

FS Section	Content field	Explanation of content
	Numeric value / percent of input amount (Water): numerical value	0.25%
	Justification of RFs (Water):	ESD
	5.3.3 Release Factor – soil	
	Numeric value / percent of input amount (Soil): numerical value	0.00
	Justification of RFs (Soil):	ESD
	5.3.4 Release Factor – waste	
	Percent of input amount disposed as waste: numerical range	0.5%
	Justification of RFs:	ESD
	SPERC identifier:	CEPE SPERC 2.2b.v2
	ERC:	2
	sub-SPERC applicability:	Formulation of water borne coatings and inks - small scale (<1,000 tpa solvent use) – volatiles
	5.3.1 Release Factor – air	
	Numeric value / percent of input amount (Air): numerical value	2.2% (total volatiles)
	Justification of RFs (Air):	ESD (table 5.13)
	5.3.2 Release Factor – water	
	Numeric value / percent of input amount (Water): numerical value	0.5%
	Justification of RFs (Water):	ESD
	5.3.3 Release Factor – soil	
	Numeric value / percent of input amount (Soil): numerical value	0.00
	Justification of RFs (Soil):	ESD
	5.3.4 Release Factor – waste	
	Percent of input amount disposed as waste: numerical range	0.5%
	Justification of RFs:	ESD
	SPERC identifier:	CEPE SPERC 2.2c.v2
	ERC:	2
	sub-SPERC applicability:	Formulation of water borne coatings and inks – non-volatiles
	5.3.1 Release Factor – air	
	Numeric value / percent of input amount (Air): numerical value **Justification of RFs (Air):**	0.0097% No direct dust emissions to the air are expected. Initial loss from handling of solid substances is captured by air extraction devices. Emission limits from the ESD (table 5.10)
	5.3.2 Release Factor – water	

FS Section	Content field	Explanation of content
	Numeric value / percent of input amount (Water): numerical value	0.25%
	Justification of RFs (Water):	ESD
	5.3.3 Release Factor – soil	
	Numeric value / percent of input amount (Soil): numerical value	0.00
	Justification of RFs (Soil):	ESD
	5.3.4 Release Factor – waste	
	Percent of input amount disposed as waste: numerical range	0.5%
	Justification of RFs:	ESD