	Content field	Explanation of content	CSR[1]	eSDS[2]
1. Title	**1.1 Title of SPERC**	Use in coatings (industrial): solvent-borne	Y	Y
	1.2 SPERC code	ESVOC SPERC 4.3a.v4	Y	Y
2. Scope	**2.1 Substance/Product Domain**			
	Substance types / functions / properties included or excluded	Applicable to petroleum substances and petrochemicals.	Y	N
	Additional specification of product types covered:	Includes a variety of aliphatic and aromatic hydrocarbons, ketones, alcohols, acetates, glycols, glycol ethers, and glycol ether acetates.	Y	N
	Inclusion of sub-SPERCs	Yes	N	N
	2.2 Process domain			
	Description of activities/processes:	Covers the use in coatings (paints, inks, adhesives, etc.) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, spreader, dip, flow, fluidized bed on production lines and film formation) and equipment cleaning, maintenance and associated laboratory activities.	Y	Y
	2.3 List of applicable Use Descriptors			
	LCS	IS – Use at industrial sites	Y	Y
	SU	SU0 - Other	Y	Y
	PC	PC9a – Coatings and paints, thinners, paint removers	Y	Y
3. Operational conditions	**3.1 Conditions of use**			
	Location of use	Indoor	Y	Y
	Water contact during use	Yes	Y	Y
	Connected to a standard municipal biological STP	Yes	Y	Y
	Rigorously contained system with minimisation of release to the environment	No	Y	N
	Further operational conditions impacting on releases to the environment	Volatile compounds subject to air emission controls. Wastewater emissions generated from equipment cleaning with water.	Y	Y
	3.2 Waste Handling and Disposal			
	Waste Handling and Disposal:	Residual raw materials and are in some cases recycled and fed back into the process reactor to improve efficiencies. In other cases, residues and by-products are used as raw materials for other downstream applications (EU, 2016). Wastewater generated during cleaning and maintenance operations is directed to a wastewater treatment plant for biological degradation. Atmospheric release of waste vapor may be ameliorated using wet scrubbers, thermal oxidizers, solid adsorbents, membrane separators, biofilters, and/or cold oxidizers for trapping residual vapours. Solvent-containing liquid coating wastes are handled as hazardous waste and disposed of via thermal or catalytic incineration capable of efficiently converting volatile organic compounds to carbon dioxide and water.	Y	N

[1] Explanations that are more detailed can be provided for the CSR..

[2] For the ES for communication a standard phrase may be selected from the ESCom catalogue when available. When no phrase is available yet in the catalogue the proposed phrase can be reported here.

	Content field	Explanation of content	CSR[1]	eSDS[2]
		Hazardous waste handling conforms with the requirements of the Waste Framework Directive and includes procedures that minimize release during production, collection, storage, transportation, and treatment. These measures include a ban on the mixing of waste types, suitable packaging and labelling, and detailed documentation on the sources, quantities, and characteristics of the waste. EU (2016). Best Available Techniques (BAT) Reference Document for Common Waste Water and Waste Gas Treatment/Management Systems in the Chemical Sector. Report EUR 28112 EN. European IPPC Bureau. Seville, Spain. http://eippcb.jrc.ec.europa.eu/reference/BREF/CWW_Bref_2016_published.pdf EU (2008). Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives. Official Journal of the European Union 22.11.2008. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32008L0098&from=EN		
4. Obligatory RMMs onsite	**RMM limiting release to air:**	No obligatory RMMs.	Y	Y
	RMM Efficiency (air):	Optional RMMs have been assigned a nominal removal efficiency value that is not accounted for in the air release factor. See the background document for more information.	Y	Y
	Reference for RMM Efficiency (air):	EU (2016). Best Available Techniques (BAT) Reference Document for Common Waste Water and Waste Gas Treatment/Management Systems in the Chemical Sector. Report EUR 28112 EN. European IPPC Bureau. Seville, Spain. http://eippcb.jrc.ec.europa.eu/reference/BREF/CWW_Bref_2016_published.pdf	Y	N
	RMM limiting release to water:	Oil-water separation (e.g. *via* oil water separators, oil skimmers, or dissolved air flotation) is required.	Y	Y
	RMM Efficiency (water):	The efficiency of this RMM varies dependent on the treatment technology and the properties of the substance.	Y	Y
	Reference for RMM Efficiency (water):	EU (2016). Best Available Techniques (BAT) Reference Document for Common Waste Water and Waste Gas Treatment/Management Systems in the Chemical Sector. Report EUR 28112 EN. European IPPC Bureau. Seville, Spain. http://eippcb.jrc.ec.europa.eu/reference/BREF/CWW_Bref_2016_published.pdf	Y	N
	RMM limiting release to soil:	The sludge generated from wastewater treatment is not applied to agricultural soil.	Y	Y
	RMM Efficiency (soil):	Not applicable	Y	Y
	Reference for RMM Efficiency (soil):	ECHA (2016). Guidance on Information Requirements and Chemical Safety Assessment. Chapter R.16: Environmental Exposure Assessment Version 3.0. European Chemicals Agency. Helsinki, Finland. https://echa.europa.eu/documents/10162/13632/information_requirements_r16_en.pdf	Y	N
5. Exposure Assessment Input	**5.1 Substance use rate**			
	Amount of substance use per day:	50,000 kg/day	Y	Y
	Fraction of EU tonnage used in region:	100%	Y	N
	Fraction of Regional tonnage used locally:	100%	Y	N
	Justification / information source:	ECHA, 2016. Guidance on Information Requirements and Chemical Safety Assessment. Chapter R.16: Environmental Exposure Assessment Version 3.0. European Chemicals Agency. Helsinki, Finland. https://echa.europa.eu/documents/10162/13632/information_requirements_r16_en.pdf	Y	N
	5.2 Days emitting			
	Number of emission days per year:	300 (default value)	Y	Y

	Content field	Explanation of content	CSR[1]	eSDS[2]
	Justification / information source:	ECHA, 2016. Guidance on Information Requirements and Chemical Safety Assessment. Chapter R.16: Environmental Exposure Assessment Version 3.0. European Chemicals Agency. Helsinki, Finland. https://echa.europa.eu/documents/10162/13632/information_requirements_r16_en.pdf	Y	N
	5.3 Release factors			
	sub-SPERC identifier:	ESVOC 4.3a.a.v4 WS <0.001 mg/l	Y	N
	ERC	ERC 4		
	sub-SPERC applicability:	Water solubility <0.001 mg/l	Y	N
	5.3.1 Release Factor – air			
	Numeric value / percent of input amount (Air)	54%	Y	Y
	Justification of RFs (Air):	The air release factor was determined using published information on the air emissions associated with the application of water- and solvent-based coatings to new car bodies (OECD, 2015). The emission rate for volatile substances was used together with paint usage rate to calculate an air release factor applicable to the high-volume use of coatings in an industrial setting. OECD, 2015. Complementing Document for Emission Scenario Document (ESD) on Coating Industry: Application of Paint Solvents for Industrial Coating. No. 37, Organisation for Economic Co-operation and Development. Paris, France. http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ENV/JM/MONO(2015)51&doclanguage=en.	Y	N
	5.3.2 Release Factor – water			
	Numeric value / percent of input amount (Water):	0.00004%	Y	Y
	Justification of RFs (Water):	The factor was established after identifying the geometric mean for eight water solubility categories and combining this result with the volume of wastewater generated for each vehicle painted at a automobile manufacturing operation. The wastewater generation for the paint spray operations at a vehicle automobile assembly plant was determiined to be 441 m^3/tonne of paint volatiles, which takes into consideration the percentage of volatile substances in the paint, and the mass of paint applied to each vehicle. Anastassopoulos, A., Prendi, L., Tam, E., 2009. Life cycle inventory and data application protocol for the automotive paint processes. JCT Coatings Technology 6, 26-35.	Y	N
	5.3.3 Release Factor – soil			
	Numeric value / percent of input amount (Soil):	0.0%	Y	Y
	Justification of RFs (Soil):	An OECD emission scenario document for coating application examined the soil releases associated with the painting of new and refurbished vehicles (OECD, 2009). The analysis found that the painting of new vehicles is not associated with any substantial opportunity for the release of volatile organics to soil. Similarly, the industrial application of coatings to metal packaging cans and various sheet metal products used in appliance manufacturing and building construction were also devoid of any notable release to soil.OECD (2009). Emission Scenario Document on Coating Industry (Paints. Lacquers and Varnishes). OECD Series on Emission Scenario Documents, Number 22. Organization for Economic Co-operation and Development. Paris, France. http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=env/jm/mono(2009)24&doclanguage=en	Y	N
	5.3.4 Release Factor – waste			

	Content field	Explanation of content	CSR[1]	eSDS[2]
	Percent of input amount disposed as waste:	5.0%	Y	N
	Justification of RFs:	The cited value was extracted from a review of the wastes resulting from the formulation of liquid coatings (OECD, 2009). The waste release estimate of 0.5% for the batch preparation of a solvent-borne coatings was judged to be representative of all other operations. An uncertainty factor of 10 has been applied to this value based on the anticipated variability of this factor across different industry sectors. OECD, 2009. Emission Scenario Document on Coating Industry (Paints. Lacquers and Varnishes). No. 22, Organisation for Economic Co-operation and Development. Paris, France. http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=env/jm/mono(2009)24&doclanguage=en.	Y	N
	sub-SPERC identifier:	ESVOC 4.3a.b.v4 WS 0.001-0.01 mg/l	Y	N
	ERC:	ERC 4		
	sub-SPERC applicability:	Water solubility 0.001-0.01 mg/l	Y	N
	5.3.1 Release Factor – air			
	Numeric value / percent of input amount (Air):	54%	Y	Y
	Justification of RFs (Air):	The air release factor was determined using published information on the air emissions associated with the application of water- and solvent-based coatings to new car bodies (OECD, 2015). The emission rate for volatile substances was used together with paint usage rate to calculate an air release factor applicable to the high-volume use of coatings in an industrial setting. OECD, 2015. Complementing Document for Emission Scenario Document (ESD) on Coating Industry: Application of Paint Solvents for Industrial Coating. No. 37, Organisation for Economic Co-operation and Development. Paris, France. http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ENV/JM/MONO(2015)51&doclanguage=en.	Y	N
	5.3.2 Release Factor – water			
	Numeric value / percent of input amount (Water):	0.0001%	Y	Y
	Justification of RFs (Water):	The factor was established after identifying the geometric mean for eight water solubility categories and combining this result with the volume of wastewater generated for each vehicle painted at a automobile manufacturing operation. The wastewater generation for the paint spray operations at a vehicle automobile assembly plant was determiined to be 441 m3/tonne of paint volatiles, which takes into consideration the percentage of volatile substances in the paint, and the mass of paint applied to each vehicle. Anastassopoulos, A., Prendi, L., Tam, E., 2009. Life cycle inventory and data application protocol for the automotive paint processes. JCT Coatings Technology 6, 26-35.	Y	N
	5.3.3 Release Factor – soil			
	Numeric value / percent of input amount (Soil):	0.0%	Y	Y
	Justification of RFs (Soil):	An OECD emission scenario document for coating application examined the soil releases associated with the painting of new and refurbished vehicles (OECD, 2009). The analysis found that the painting of new vehicles is not associated with any substantial opportunity for the release of volatile organics to soil. Similarly, the industrial application of coatings to metal packaging cans and various sheet metal products used in appliance manufacturing and building construction were also devoid of any notable release to soil.OECD (2009). Emission Scenario Document on Coating Industry (Paints. Lacquers and Varnishes). OECD Series on Emission Scenario Documents, Number 22. Organization for Economic	Y	N

	Content field	Explanation of content	CSR[1]	eSDS[2]
		Co-operation and Development. Paris, France. http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=env/jm/mono(2009)24&doclanguage=en		
	5.3.4 Release Factor – waste			
	Percent of input amount disposed as waste:	5.0%	Y	N
	Justification of RFs:	The cited value was extracted from a review of the wastes resulting from the formulation of liquid coatings (OECD, 2009). The waste release estimate of 0.5% for the batch preparation of a solvent-borne coatings was judged to be representative of all other operations. An uncertainty factor of 10 has been applied to this value based on the anticipated variability of this factor across different industry sectors. OECD, 2009. Emission Scenario Document on Coating Industry (Paints. Lacquers and Varnishes). No. 22, Organisation for Economic Co-operation and Development. Paris, France. http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=env/jm/mono(2009)24&doclanguage=en.	Y	N
	sub-SPERC identifier:	ESVOC 4.3a.c.v4 WS 0.01-0.1 mg/l	Y	N
	ERC	ERC 4		
	sub-SPERC applicability:	Water Solubility 0.01-0.1 mg/l	Y	N
	5.3.1 Release Factor – air			
	Numeric value / percent of input amount (Air):	54%	Y	Y
	Justification of RFs (Air):	The air release factor was determined using published information on the air emissions associated with the application of water- and solvent-based coatings to new car bodies (OECD, 2015). The emission rate for volatile substances was used together with paint usage rate to calculate an air release factor applicable to the high-volume use of coatings in an industrial setting. OECD, 2015. Complementing Document for Emission Scenario Document (ESD) on Coating Industry: Application of Paint Solvents for Industrial Coating. No. 37, Organisation for Economic Co-operation and Development. Paris, France. http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ENV/JM/MONO(2015)51&doclanguage=en.	Y	N
	5.3.2 Release Factor – water			
	Numeric value / percent of input amount (Water):	0.001%	Y	Y
	Justification of RFs (Water):	The factor was established after identifying the geometric mean for eight water solubility categories and combining this result with the volume of wastewater generated for each vehicle painted at a automobile manufacturing operation. The wastewater generation for the paint spray operations at a vehicle automobile assembly plant was determiined to be 441 m3/tonne of paint volatiles, which takes into consideration the percentage of volatile substances in the paint, and the mass of paint applied to each vehicle. Anastassopoulos, A., Prendi, L., Tam, E., 2009. Life cycle inventory and data application protocol for the automotive paint processes. JCT Coatings Technology 6, 26-35.	Y	N
	5.3.3 Release Factor – soil			
	Numeric value / percent of input amount (Soil):	0.0%	Y	Y
	Justification of RFs (Soil):	An OECD emission scenario document for coating application examined the soil releases associated with the painting of new and refurbished vehicles (OECD, 2009). The analysis found that the painting of new vehicles is not associated with any substantial opportunity for the release of volatile organics to soil. Similarly, the industrial application of coatings	Y	N

	Content field	Explanation of content	CSR[1]	eSDS[2]
		to metal packaging cans and various sheet metal products used in appliance manufacturing and building construction were also devoid of any notable release to soil.OECD (2009). Emission Scenario Document on Coating Industry (Paints. Lacquers and Varnishes). OECD Series on Emission Scenario Documents, Number 22. Organization for Economic Co-operation and Development. Paris, France. http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=env/jm/mono(2009)24&doclanguage=en		
	5.3.4 Release Factor – waste			
	Percent of input amount disposed as waste:	5.0%	Y	N
	Justification of RFs:	The cited value was extracted from a review of the wastes resulting from the formulation of liquid coatings (OECD, 2009). The waste release estimate of 0.5% for the batch preparation of a solvent-borne coatings was judged to be representative of all other operations. An uncertainty factor of 10 has been applied to this value based on the anticipated variability of this factor across different industry sectors. OECD, 2009. Emission Scenario Document on Coating Industry (Paints. Lacquers and Varnishes). No. 22, Organisation for Economic Co-operation and Development. Paris, France. http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=env/jm/mono(2009)24&doclanguage=en.	Y	N
	sub-SPERC identifier:	ESVOC 4.3a.d.v4 WS 0.1-1.0 mg/l	Y	N
	ERC	ERC 4		
	sub-SPERC applicability:	Water Solubility 0.1-1.0 mg/l	Y	N
	5.3.1 Release Factor – air			
	Numeric value / percent of input amount (Air):	54%	Y	Y
	Justification of RFs (Air):	The air release factor was determined using published information on the air emissions associated with the application of water- and solvent-based coatings to new car bodies (OECD, 2015). The emission rate for volatile substances was used together with paint usage rate to calculate an air release factor applicable to the high-volume use of coatings in an industrial setting. OECD, 2015. Complementing Document for Emission Scenario Document (ESD) on Coating Industry: Application of Paint Solvents for Industrial Coating. No. 37, Organisation for Economic Co-operation and Development. Paris, France. http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ENV/JM/MONO(2015)51&doclanguage=en.	Y	N
	5.3.2 Release Factor – water			
	Numeric value / percent of input amount (Water):	0.01%	Y	Y
	Justification of RFs (Water):	The factor was established after identifying the geometric mean for eight water solubility categories and combining this result with the volume of wastewater generated for each vehicle painted at a automobile manufacturing operation. The wastewater generation for the paint spray operations at a vehicle automobile assembly plant was determiined to be 441 m3/tonne of paint volatiles, which takes into consideration the percentage of volatile substances in the paint, and the mass of paint applied to each vehicle. Anastassopoulos, A., Prendi, L., Tam, E., 2009. Life cycle inventory and data application protocol for the automotive paint processes. JCT Coatings Technology 6, 26-35.	Y	N
	5.3.3 Release Factor – soil			
	Numeric value / percent of input amount (Soil):	0.0%	Y	Y

	Content field	Explanation of content	CSR[1]	eSDS[2]
	Justification of RFs (Soil):	An OECD emission scenario document for coating application examined the soil releases associated with the painting of new and refurbished vehicles (OECD, 2009). The analysis found that the painting of new vehicles is not associated with any substantial opportunity for the release of volatile organics to soil. Similarly, the industrial application of coatings to metal packaging cans and various sheet metal products used in appliance manufacturing and building construction were also devoid of any notable release to soil.OECD (2009). Emission Scenario Document on Coating Industry (Paints. Lacquers and Varnishes). OECD Series on Emission Scenario Documents, Number 22. Organization for Economic Co-operation and Development. Paris, France. http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=env/jm/mono(2009)24&doclanguage=en	Y	N
	5.3.4 Release Factor – waste			
	Percent of input amount disposed as waste	5.0%	Y	N
	Justification of RFs:	The cited value was extracted from a review of the wastes resulting from the formulation of liquid coatings (OECD, 2009). The waste release estimate of 0.5% for the batch preparation of a solvent-borne coatings was judged to be representative of all other operations. An uncertainty factor of 10 has been applied to this value based on the anticipated variability of this factor across different industry sectors. OECD, 2009. Emission Scenario Document on Coating Industry (Paints. Lacquers and Varnishes). No. 22, Organisation for Economic Co-operation and Development. Paris, France. http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=env/jm/mono(2009)24&doclanguage=en.	Y	N
	sub-SPERC identifier:	ESVOC 4.3a.e.v4 WS 1.0-10 mg/l	Y	N
	ERC	ERC 4		
	sub-SPERC applicability:	Water Solubility 1.0-10 mg/l	Y	N
	5.3.1 Release Factor – air			
	Numeric value / percent of input amount (Air):	54%	Y	Y
	Justification of RFs (Air):	The air release factor was determined using published information on the air emissions associated with the application of water- and solvent-based coatings to new car bodies (OECD, 2015). The emission rate for volatile substances was used together with paint usage rate to calculate an air release factor applicable to the high-volume use of coatings in an industrial setting. OECD, 2015. Complementing Document for Emission Scenario Document (ESD) on Coating Industry: Application of Paint Solvents for Industrial Coating. No. 37, Organisation for Economic Co-operation and Development. Paris, France. http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ENV/JM/MONO(2015)51&doclanguage=en.	Y	N
	5.3.2 Release Factor – water			
	Numeric value / percent of input amount (Water):	0.01%	Y	Y
	Justification of RFs (Water):	The factor was established after identifying the geometric mean for eight water solubility categories and combining this result with the volume of wastewater generated for each vehicle painted at a automobile manufacturing operation. The wastewater generation for the paint spray operations at a vehicle automobile assembly plant was determiined to be 441 m3/tonne of paint volatiles, which takes into consideration the percentage of volatile substances in the paint, and the mass of paint applied to each vehicle.	Y	N

	Content field	Explanation of content	CSR[1]	eSDS[2]
		Anastassopoulos, A., Prendi, L., Tam, E., 2009. Life cycle inventory and data application protocol for the automotive paint processes. JCT Coatings Technology 6, 26-35.		
	5.3.3 Release Factor – soil			
	Numeric value / percent of input amount (Soil):	0.0%	Y	Y
	Justification of RFs (Soil):	An OECD emission scenario document for coating application examined the soil releases associated with the painting of new and refurbished vehicles (OECD, 2009). The analysis found that the painting of new vehicles is not associated with any substantial opportunity for the release of volatile organics to soil. Similarly, the industrial application of coatings to metal packaging cans and various sheet metal products used in appliance manufacturing and building construction were also devoid of any notable release to soil.OECD (2009). Emission Scenario Document on Coating Industry (Paints. Lacquers and Varnishes). OECD Series on Emission Scenario Documents, Number 22. Organization for Economic Co-operation and Development. Paris, France. http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=env/jm/mono(2009)24&doclanguage=en	Y	N
	5.3.4 Release Factor – waste			
	Percent of input amount disposed as waste:	5.0%	Y	N
	Justification of RFs:	The cited value was extracted from a review of the wastes resulting from the formulation of liquid coatings (OECD, 2009). The waste release estimate of 0.5% for the batch preparation of a solvent-borne coatings was judged to be representative of all other operations. An uncertainty factor of 10 has been applied to this value based on the anticipated variability of this factor across different industry sectors. OECD, 2009. Emission Scenario Document on Coating Industry (Paints. Lacquers and Varnishes). No. 22, Organisation for Economic Co-operation and Development. Paris, France. http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=env/jm/mono(2009)24&doclanguage=en.	Y	N
	sub-SPERC identifier:	ESVOC 4.3a.f.v4 WS 10-100 mg/l	Y	N
	ERC	ERC 4		
	sub-SPERC applicability:	Water Solubility 10-100 mg/l	Y	N
	5.3.1 Release Factor – air			
	Numeric value / percent of input amount (Air):	54%	Y	Y
	Justification of RFs (Air):	The air release factor was determined using published information on the air emissions associated with the application of water- and solvent-based coatings to new car bodies (OECD, 2015). The emission rate for volatile substances was used together with paint usage rate to calculate an air release factor applicable to the high-volume use of coatings in an industrial setting. OECD, 2015. Complementing Document for Emission Scenario Document (ESD) on Coating Industry: Application of Paint Solvents for Industrial Coating. No. 37, Organisation for Economic Co-operation and Development. Paris, France. http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ENV/JM/MONO(2015)51&doclanguage=en.	Y	N
	5.3.2 Release Factor – water			
	Numeric value / percent of input amount (Water):	1%	Y	Y
	Justification of RFs (Water):	The factor was established after identifying the geometric mean for eight water solubility categories and combining this result with the volume of	Y	N

	Content field	Explanation of content	CSR[1]	eSDS[2]
		wastewater generated for each vehicle painted at a automobile manufacturing operation. The wastewater generation for the paint spray operations at a vehicle automobile assembly plant was determiined to be 441 m3/tonne of paint volatiles, which takes into consideration the percentage of volatile substances in the paint, and the mass of paint applied to each vehicle. Anastassopoulos, A., Prendi, L., Tam, E., 2009. Life cycle inventory and data application protocol for the automotive paint processes. JCT Coatings Technology 6, 26-35.		
	5.3.3 Release Factor – soil			
	Numeric value / percent of input amount (Soil):	0.0%	Y	Y
	Justification of RFs (Soil):	An OECD emission scenario document for coating application examined the soil releases associated with the painting of new and refurbished vehicles (OECD, 2009). The analysis found that the painting of new vehicles is not associated with any substantial opportunity for the release of volatile organics to soil. Similarly, the industrial application of coatings to metal packaging cans and various sheet metal products used in appliance manufacturing and building construction were also devoid of any notable release to soil.OECD (2009). Emission Scenario Document on Coating Industry (Paints. Lacquers and Varnishes). OECD Series on Emission Scenario Documents, Number 22. Organization for Economic Co-operation and Development. Paris, France. http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=env/jm/mono(2009)24&doclanguage=en	Y	N
	5.3.4 Release Factor – waste			
	Percent of input amount disposed as waste:	5.0%	Y	N
	Justification of RFs:	The cited value was extracted from a review of the wastes resulting from the formulation of liquid coatings (OECD, 2009). The waste release estimate of 0.5% for the batch preparation of a solvent-borne coatings was judged to be representative of all other operations. An uncertainty factor of 10 has been applied to this value based on the anticipated variability of this factor across different industry sectors. OECD, 2009. Emission Scenario Document on Coating Industry (Paints. Lacquers and Varnishes). No. 22, Organisation for Economic Co-operation and Development. Paris, France. http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=env/jm/mono(2009)24&doclanguage=en.	Y	N
	sub-SPERC identifier:	ESVOC 4.3a.g.v4 WS 100-1000 mg/l	Y	N
	ERC	ERC 4		
	sub-SPERC applicability:	Water Solubility 100-1000 mg/l	Y	N
	5.3.1 Release Factor – air			
	Numeric value / percent of input amount (Air):	54%	Y	Y
	Justification of RFs (Air):	The air release factor was determined using published information on the air emissions associated with the application of water- and solvent-based coatings to new car bodies (OECD, 2015). The emission rate for volatile substances was used together with paint usage rate to calculate an air release factor applicable to the high-volume use of coatings in an industrial setting. OECD, 2015. Complementing Document for Emission Scenario Document (ESD) on Coating Industry: Application of Paint Solvents for Industrial Coating. No. 37, Organisation for Economic Co-operation and Development. Paris, France. http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ENV/JM/MONO(2015)51&doclanguage=en.	Y	N

	Content field	Explanation of content	CSR[1]	eSDS[2]
	5.3.2 Release Factor – water			
	Numeric value / percent of input amount (Water):	14%	Y	Y
	Justification of RFs (Water):	The factor was established after identifying the geometric mean for eight water solubility categories and combining this result with the volume of wastewater generated for each vehicle painted at a automobile manufacturing operation. The wastewater generation for the paint spray operations at a vehicle automobile assembly plant was determiined to be 441 m3/tonne of paint volatiles, which takes into consideration the percentage of volatile substances in the paint, and the mass of paint applied to each vehicle. Anastassopoulos, A., Prendi, L., Tam, E., 2009. Life cycle inventory and data application protocol for the automotive paint processes. JCT Coatings Technology 6, 26-35.	Y	N
	5.3.3 Release Factor – soil			
	Numeric value / percent of input amount (Soil):	0.0%	Y	Y
	Justification of RFs (Soil):	An OECD emission scenario document for coating application examined the soil releases associated with the painting of new and refurbished vehicles (OECD, 2009). The analysis found that the painting of new vehicles is not associated with any substantial opportunity for the release of volatile organics to soil. Similarly, the industrial application of coatings to metal packaging cans and various sheet metal products used in appliance manufacturing and building construction were also devoid of any notable release to soil.OECD (2009). Emission Scenario Document on Coating Industry (Paints. Lacquers and Varnishes). OECD Series on Emission Scenario Documents, Number 22. Organization for Economic Co-operation and Development. Paris, France. http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=env/jm/mono(2009)24&doclanguage=en	Y	N
	5.3.4 Release Factor – waste			
	Percent of input amount disposed as waste:	5.0%	Y	N
	Justification of RFs:	The cited value was extracted from a review of the wastes resulting from the formulation of liquid coatings (OECD, 2009). The waste release estimate of 0.5% for the batch preparation of a solvent-borne coatings was judged to be representative of all other operations. An uncertainty factor of 10 has been applied to this value based on the anticipated variability of this factor across different industry sectors. OECD, 2009. Emission Scenario Document on Coating Industry (Paints. Lacquers and Varnishes). No. 22, Organisation for Economic Co-operation and Development. Paris, France. http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=env/jm/mono(2009)24&doclanguage=en.	Y	N
	sub-SPERC identifier:	ESVOC 4.3a.h.v4 WS >1000 mg/l	Y	N
	ERC	ERC 4		
	sub-SPERC applicability:	Water Solubility >1000 mg/l	Y	N
	5.3.1 Release Factor – air			
	Numeric value / percent of input amount (Air):	54%	Y	Y
	Justification of RFs (Air):	The air release factor was determined using published information on the air emissions associated with the application of water- and solvent-based coatings to new car bodies (OECD, 2015). The emission rate for volatile substances was used together with paint usage rate to calculate an air release factor applicable to the high-volume use of coatings in an industrial setting.	Y	N

	Content field	Explanation of content	CSR[1]	eSDS[2]
		OECD, 2015. Complementing Document for Emission Scenario Document (ESD) on Coating Industry: Application of Paint Solvents for Industrial Coating. No. 37, Organisation for Economic Co-operation and Development. Paris, France. http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ENV/JM/MONO(2015)51&doclanguage=en.		
	5.3.2 Release Factor – water			
	Numeric value / percent of input amount (Water):	44%	Y	Y
	Justification of RFs (Water):	The factor was established after identifying the geometric mean for eight water solubility categories and combining this result with the volume of wastewater generated for each vehicle painted at a automobile manufacturing operation. The wastewater generation for the paint spray operations at a vehicle automobile assembly plant was determiined to be 441 m3/tonne of paint volatiles, which takes into consideration the percentage of volatile substances in the paint, and the mass of paint applied to each vehicle. Anastassopoulos, A., Prendi, L., Tam, E., 2009. Life cycle inventory and data application protocol for the automotive paint processes. JCT Coatings Technology 6, 26-35.	Y	N
	5.3.3 Release Factor – soil			
	Numeric value / percent of input amount (Soil):	0.0%	Y	Y
	Justification of RFs (Soil):	An OECD emission scenario document for coating application examined the soil releases associated with the painting of new and refurbished vehicles (OECD, 2009). The analysis found that the painting of new vehicles is not associated with any substantial opportunity for the release of volatile organics to soil. Similarly, the industrial application of coatings to metal packaging cans and various sheet metal products used in appliance manufacturing and building construction were also devoid of any notable release to soil.OECD (2009). Emission Scenario Document on Coating Industry (Paints. Lacquers and Varnishes). OECD Series on Emission Scenario Documents, Number 22. Organization for Economic Co-operation and Development. Paris, France. http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=env/jm/mono(2009)24&doclanguage=en	Y	N
	5.3.4 Release Factor – waste			
	Percent of input amount disposed as waste:	5.0%	Y	N
	Justification of RFs:	The cited value was extracted from a review of the wastes resulting from the formulation of liquid coatings (OECD, 2009). The waste release estimate of 0.5% for the batch preparation of a solvent-borne coatings was judged to be representative of all other operations. An uncertainty factor of 10 has been applied to this value based on the anticipated variability of this factor across different industry sectors. OECD, 2009. Emission Scenario Document on Coating Industry (Paints. Lacquers and Varnishes). No. 22, Organisation for Economic Co-operation and Development. Paris, France. http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=env/jm/mono(2009)24&doclanguage=en.	Y	N
References to SPERC Background Document				
	Reference to Background Document	ESIG/ESVOC (2023). SpERC Background Document. Specific Environmental Release Categories (SpERCs) for the use of solvents and solvent borne substances in the industrial production and/or use of binders/releasing agents, coatings, cleaners, and metalworking fluids. European Solvents Industry Group. Brussels, Belgium.	Y	N