FS Section	Content field	Explanation of content	CSR[1]	eSDS[2]
1. Title	**1.1 Title of SPERC**	Polymer processing (industrial): solvent-borne	Y	Y
	1.2 SPERC code	ESVOC SPERC 4.21a.v2	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 processing of formulated polymers including material transfers, additives handling (e.g. pigments, stabilisers, fillers, and plasticisers), moulding, curing and forming activities, material re-works, storage and associated maintenance.	Y	Y
	2.3 List of applicable Use Descriptors			
	LCS	IS – Use at industrial sites	Y	Y
	SU	SU12 – Manufacture of plastics products, including compounding and conversion	Y	Y
	PC	PC32 – Polymer preparations and compounds	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	No, site specifc biological STP with assumed discharge rate of municipal biological STP of >= 2000 m^3/day	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 (EEA, 2016). Wastewater generated during cleaning and maintenance operations is directed to a waste water treatment plant for biological degradation. Atmospheric release of waste vapour may be ameliorated using wet scuubbers, thermal oxidizers, solid adsorbents, membrane separators, biofilters, and/or cold oxidizers for trapping residual vapours.	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.

FS Section	Content field	Explanation of content	CSR[1]	eSDS[2]
		All unrecovered waste is handled as an industrial waste that can be incinerated. 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 EEA (2016). Prevention of hazardous waste in Europe — the status in 2015 European Environment Agency, Report No. 35/2016. Copenhagen, Denmark. https://www.eea.europa.eu/publications/waste-prevention-in-europe/file		
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

FS Section	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 4.21a.a.v2 VP >10000 Pa	Y	N
	ERC	ERC 4		
	sub-SPERC applicability:	Vapour pressure >10000 Pa	Y	N
	5.3.1 Release Factor – air			
	Numeric value / percent of input amount (Air)	75%	Y	Y
	Justification of RFs (Air):	This value has been adopted from a published source that documents the worst-case estimates of air emissions based on the expert judgement of environmental scientists from the Dutch National Institute for Public Health and the Environment (RIVM). European Commission (2003). European Commission Technical Guidance Document on Risk Assessment (EUTGD), Report EUR 20418 EN/2, Appendix 1, Table A3.11, Brussels, Belgium. (https://echa.europa.eu/documents/10162/16960216/tgdpart2_2ed_en.pdf)	Y	N
	5.3.2 Release Factor – water			
	Numeric value / percent of input amount (Water):	0.0%	Y	Y
	Justification of RFs (Water):	This value has been adopted from a published source that documents the worst-case estimates of air emissions based on the expert judgement of environmental scientists from the Dutch National Institute for Public Health and the Environment (RIVM). European Commission (2003). European Commission Technical Guidance Document on Risk Assessment (EUTGD), Report EUR 20418 EN/2, Appendix 1, Table A3.11, Brussels, Belgium. (https://echa.europa.eu/documents/10162/16960216/tgdpart2_2ed_en.pdf)	Y	N
	5.3.3 Release Factor – soil			
	Numeric value / percent of input amount (Soil):	0.001%	Y	Y
	Justification of RFs (Soil):	This value has been adopted from a published source that documents the worst-case estimates of air emissions based on the expert judgement of environmental scientists from the Dutch National Institute for Public Health and the Environment (RIVM). European Commission (2003). European Commission Technical Guidance Document on Risk Assessment (EUTGD), Report EUR 20418 EN/2, Appendix 1, Table A3.11, Brussels, Belgium. (https://echa.europa.eu/documents/10162/16960216/tgdpart2_2ed_en.pdf)	Y	N
	5.3.4 Release Factor – waste			
	Percent of input amount disposed as waste:	0.1%	Y	N
	Justification of RFs:	The waste generation factor was taken from a life cycle assessment for the commercial production of high-density polyethylene (Plastics Europe, 2005). The stated amount of incinerated solid waste was 0.09%, which was rounded upward to 0.1% to ensure an adequate portrayal. An uncertainty factor of has not been applied to this value because the	Y	N

FS Section	Content field	Explanation of content	CSR[1]	eSDS[2]
		quantity of hazardous waste is not expected to appreciably vary for other polymer processing operations. PlasticsEurope (2005). Eco-profiles of the European Plastics Industry: High Density Polyethylene (HDPE). Association of Plastics Manufacturers. Brussels, Belgium. http://www.inference.org.uk/sustainable/LCA/elcd/external_docs/hdpe_311147f2-fabd-11da-974d-0800200c9a66.pdf.		
	sub-SPERC identifier:	ESVOC 4.21a.b.v2 VP 1000-10000 Pa	Y	N
	ERC	ERC 4		
	sub-SPERC applicability:	Vapour pressure 1000-10000 Pa	Y	N
	5.3.1 Release Factor – air			
	Numeric value / percent of input amount (Air):	50%	Y	Y
	Justification of RFs (Air):	This value has been adopted from a published source that documents the worst-case estimates of air emissions based on the expert judgement of environmental scientists from the Dutch National Institute for Public Health and the Environment (RIVM). European Commission (2003). European Commission Technical Guidance Document on Risk Assessment (EUTGD), Report EUR 20418 EN/2, Appendix 1, Table A3.11, Brussels, Belgium. (https://echa.europa.eu/documents/10162/16960216/tgdpart2_2ed_en.pdf)	Y	N
	5.3.2 Release Factor – water			
	Numeric value / percent of input amount (Water):	0.0%	Y	Y
	Justification of RFs (Water):	This value has been adopted from a published source that documents the worst-case estimates of air emissions based on the expert judgement of environmental scientists from the Dutch National Institute for Public Health and the Environment (RIVM). European Commission (2003). European Commission Technical Guidance Document on Risk Assessment (EUTGD), Report EUR 20418 EN/2, Appendix 1, Table A3.11, Brussels, Belgium. (https://echa.europa.eu/documents/10162/16960216/tgdpart2_2ed_en.pdf)	Y	N
	5.3.3 Release Factor – soil			
	Numeric value / percent of input amount (Soil):	0.001%	Y	Y
	Justification of RFs (Soil):	This value has been adopted from a published source that documents the worst-case estimates of air emissions based on the expert judgement of environmental scientists from the Dutch National Institute for Public Health and the Environment (RIVM). European Commission (2003). European Commission Technical Guidance Document on Risk Assessment (EUTGD), Report EUR 20418 EN/2, Appendix 1, Table A3.11, Brussels, Belgium. (https://echa.europa.eu/documents/10162/16960216/tgdpart2_2ed_en.pdf)	Y	N
	5.3.4 Release Factor – waste			
	Percent of input amount disposed as waste:	0.1%	Y	N
	Justification of RFs:	The waste generation factor was taken from a life cycle assessment for the commercial production of high-density polyethylene (Plastics Europe, 2005). The stated amount of incinerated solid waste was 0.09%, which was rounded upward to 0.1% to ensure an adequate portrayal. An uncertainty factor of has not been applied to this value because the	Y	N

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	sub-SPERC identifier:	ESVOC 4.21a.c.v2 VP 100-1000 Pa	Y	N
	ERC	ERC 4		
	sub-SPERC applicability:	Vapour pressure 100-1000 Pa	Y	N
	5.3.1 Release Factor – air			
	Numeric value / percent of input amount (Air):	25%	Y	Y
	Justification of RFs (Air):	This value has been adopted from a published source that documents the worst-case estimates of air emissions based on the expert judgement of environmental scientists from the Dutch National Institute for Public Health and the Environment (RIVM). European Commission (2003). European Commission Technical Guidance Document on Risk Assessment (EUTGD), Report EUR 20418 EN/2, Appendix 1, Table A3.11, Brussels, Belgium. (https://echa.europa.eu/documents/10162/16960216/tgdpart2_2ed_en.pdf)	Y	N
	5.3.2 Release Factor – water			
	Numeric value / percent of input amount (Water):	0.0%	Y	Y
	Justification of RFs (Water):	This value has been adopted from a published source that documents the worst-case estimates of air emissions based on the expert judgement of environmental scientists from the Dutch National Institute for Public Health and the Environment (RIVM). European Commission (2003). European Commission Technical Guidance Document on Risk Assessment (EUTGD), Report EUR 20418 EN/2, Appendix 1, Table A3.11, Brussels, Belgium. (https://echa.europa.eu/documents/10162/16960216/tgdpart2_2ed_en.pdf)	Y	N
	5.3.3 Release Factor – soil			
	Numeric value / percent of input amount (Soil):	0.001%	Y	Y
	Justification of RFs (Soil):	This value has been adopted from a published source that documents the worst-case estimates of air emissions based on the expert judgement of environmental scientists from the Dutch National Institute for Public Health and the Environment (RIVM). European Commission (2003). European Commission Technical Guidance Document on Risk Assessment (EUTGD), Report EUR 20418 EN/2, Appendix 1, Table A3.11, Brussels, Belgium. (https://echa.europa.eu/documents/10162/16960216/tgdpart2_2ed_en.pdf)	Y	N
	5.3.4 Release Factor – waste			
	Percent of input amount disposed as waste:	0.1%	Y	N
	Justification of RFs:	The waste generation factor was taken from a life cycle assessment for the commercial production of high-density polyethylene (Plastics Europe, 2005). The stated amount of incinerated solid waste was 0.09%, which was rounded upward to 0.1% to ensure an adequate portrayal. An uncertainty factor of has not been applied to this value because the	Y	N

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	sub-SPERC identifier:	ESVOC 4.21a.d.v2 VP <100 Pa	Y	N
	ERC	ERC 4		
	sub-SPERC applicability:	Vapour pressure <100 Pa	Y	N
	5.3.1 Release Factor – air			
	Numeric value / percent of input amount (Air):	10%	Y	Y
	Justification of RFs (Air):	This value has been adopted from a published source that documents the worst-case estimates of air emissions based on the expert judgement of environmental scientists from the Dutch National Institute for Public Health and the Environment (RIVM). European Commission (2003). European Commission Technical Guidance Document on Risk Assessment (EUTGD), Report EUR 20418 EN/2, Appendix 1, Table A3.11, Brussels, Belgium. (https://echa.europa.eu/documents/10162/16960216/tgdpart2_2ed_en.pdf)	Y	N
	5.3.2 Release Factor – water			
	Numeric value / percent of input amount (Water):	0.0%	Y	Y
	Justification of RFs (Water):	This value has been adopted from a published source that documents the worst-case estimates of air emissions based on the expert judgement of environmental scientists from the Dutch National Institute for Public Health and the Environment (RIVM). European Commission (2003). European Commission Technical Guidance Document on Risk Assessment (EUTGD), Report EUR 20418 EN/2, Appendix 1, Table A3.11, Brussels, Belgium. (https://echa.europa.eu/documents/10162/16960216/tgdpart2_2ed_en.pdf)	Y	N
	5.3.3 Release Factor – soil			
	Numeric value / percent of input amount (Soil):	0.001%	Y	Y
	Justification of RFs (Soil):	This value has been adopted from a published source that documents the worst-case estimates of air emissions based on the expert judgement of environmental scientists from the Dutch National Institute for Public Health and the Environment (RIVM). European Commission (2003). European Commission Technical Guidance Document on Risk Assessment (EUTGD), Report EUR 20418 EN/2, Appendix 1, Table A3.11, Brussels, Belgium. (https://echa.europa.eu/documents/10162/16960216/tgdpart2_2ed_en.pdf)	Y	N
	5.3.4 Release Factor – waste			
	Percent of input amount disposed as waste:	0.1%	Y	N
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References to SPERC Background Document				
	Reference to Background Document	ESIG/ESVOC (2018). SpERC Background Document (1st draft). Specific Environmental Release Categories (SpERCs) for the use of solvents and solvent borne substances in the industrial production and/or use of water treatment chemicals, polymers, mining chemicals, and fuels. European Solvents Industry Group. Brussels, Belgium.	Y	N