FS Section	Content field	Explanation of content	CSR	eSDS
1. Title	1.1 Title of SPERC	Water treatment chemical use (professional): solvent-borne	Y	Y
	1.2 SPERC code	ESVOC SPERC 8.22b.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	No	N	N
	2.2 Process domain			
	Description of activities/processes:	Covers the use of the substance for the treatment of water at industrial facilities in open and closed systems.	Y	Y
	2.3 List of applicable Use Descriptors			
	LCS	PW – Widespread use by professional workers	Y	Y
	SU	SU0 – Other	Y	Y
	PC	PC20 – Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents	Y	Y
3. Operational conditions	3.1 Conditions of use			
	Location of use	Outdoor	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 prone to atmospheric release. Wastewater emissions generated from equipment cleaning with water.	Y	Y
	3.2 Waste Handling and Disposal			
	Waste Handling and Disposal:	Unused and spent products and solutions should be appropriately labelled and stored for eventual recovery or disposal as hazardous waste. A suitable unbreakable and closable container should be used when storing and shipping hazardous materials. The containers must be solvent compatible, leakproof, and free of any defects. Contaminated debris such as disposable paper towels, brushes, rollers, masks, transfer vessels, and wipes that may contain small amounts of solvent residue need to be handled as hazardous waste and properly disposed of in a manner that is consistent with local, regional, and national regulations. Direct disposal of waste into a municipal sewer system needs to conform with all applicable laws and regulations. A spill plan needs to be available that outlines the steps to be taken to minimize any potential health and environmental threats. EPA (2001). Managing Your Hazardous Waste: A Guide for Small Businesses. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. Washington, DC. https://www.epa.gov/sites/production/files/2014-12/documents/k01005.pdf.	Y	N
	RMM limiting release to air:	No obligatory RMMs.	Y	Y

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4. Obligatory RMMs onsite	**RMM Efficiency (air):**	Emissions to air are minimized when the product is used in accordance with the manufacturers' instructions and specifications.	Y	Y
	Reference for RMM Efficiency (air):	Pillai, J. (1997). Flocculants and Coagulants: The Keys to Water and Waste Management in Aggregate Production. R-680, Nalco Company. Naprville, IL. http://www.aniq.org.mx/pqta/pdf/Flocculants%20and%20Coagulants%20NALCO%20(LIT).pdf.	Y	N
	RMM limiting release to water:	By default, the release to water is modified after biological treatment at a standard municipal sewage treatment plant (STP) with an effluent flow rate of 2,000 m^3/day. The effluent discharge rate is applicable to a group of 10,000 inhabitants who generate 200 L of wastewater per person.	Y	Y
	RMM Efficiency (water):	The removal efficiency is provided by the SimpleTreat model, which takes into consideration the biodegradability, partitioning behaviour, and volatility of an organic substance. Degradation assumes the operation of an aerobic activated-sludge reactor under steady-state conditions.	Y	Y
	Reference for RMM Efficiency (water):	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
	RMM limiting release to soil:	No obligatory RMMs.	Y	Y
	RMM Efficiency (soil):	Emissions to soil are minimized when the product is used in accordance with the manufacturers' instructions and specifications.	Y	Y
	Reference for RMM Efficiency (soil):	Pillai, J. (1997). Flocculants and Coagulants: The Keys to Water and Waste Management in Aggregate Production. R-680, Nalco Company. Naprville, IL. http://www.aniq.org.mx/pqta/pdf/Flocculants%20and%20Coagulants%20NALCO%20(LIT).pdf.	Y	N
5. Exposure Assessment Input	**5.1 Substance use rate**			
	Amount of substance use per day:	Supplied by registrant **(NB the stated daily use rate of 0.004 kg/day in the original water treatment chemical factsheet cannot be authenticated using information from the OECD ESD for water treatment chemicals and has been modified.)**	Y	Y
	Fraction of EU tonnage used in region:	10% (default value)	Y	N
	Fraction of Regional tonnage used locally:	0.05% (default value)	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:	365 (default value)	Y	Y
	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 8.22b.v3	Y	N
	ERC	ERC 8d		
	sub-SPERC applicability:	None	Y	N

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	5.3.1 Release Factor – air			
	Numeric value / percent of input amount (Air)	9.8%	Y	Y
	Justification of RFs (Air):	The value was assigned using a mass balance approach that examines the steam to condensate distribution ratio for neutralizing boiler amines. The distribution for the most widely used boiler amine yields an air and water release factor of approximately 10 and 90%, respectively. These values have been modestly modified to preserve the overall mass balance by taking into account the small releases to soil and waste. Walker, M.E., Lv, Z., Masanet, E., 2013. Industrial steam systems and the energy-water nexus. *Environmental Science & Technology* **47**, 13060-13067. Memarzadeh F (2014) Adding amines to steam for humidification. *Journal of Chemical Health & Safety* 21(4):5-17. Hydro-Logic. (2012). Amines. Gloucester, NJ. Web site visited July 2022. http://www.watertreater.net/amines.php	Y	N
	5.3.2 Release Factor – water			
	Numeric value / percent of input amount (Water):	90%	Y	Y
	Justification of RFs (Water):	The value was assigned using a mass balance approach that examines the steam to condensate distribution ratio for neutralizing boiler amines. The distribution for the most widely used boiler amine yields an air and water release factor of approximately 10 and 90%, respectively. These values have been modestly modified to preserve the overall mass balance by taking into account the small releases to soil and waste. Walker, M.E., Lv, Z., Masanet, E., 2013. Industrial steam systems and the energy-water nexus. *Environmental Science & Technology* **47**, 13060-13067. Memarzadeh F (2014) Adding amines to steam for humidification. *Journal of Chemical Health & Safety* 21(4):5-17. Hydro-Logic. (2012). Amines. Gloucester, NJ. Web site visited July 2022. http://www.watertreater.net/amines.php	Y	N
	5.3.3 Release Factor – soil			
	Numeric value / percent of input amount (Soil):	0.1%	Y	Y
	Justification of RFs (Soil):	The discharge of boiler blowdown to a drainage ditch is predicted to result in some soil or sediment contact with neutralizing amines that are known to bind with soil (Hawthorne et al., 2005). Although, the fractional release of amines via this pathway is expected to be minor, it may be measurable. In lieu of the general absence of emission measurements, a soil release factor of 0.1 % is recommended as a default value to account for the possibility of boiler water contact with soil. Hawthorne S. B., Kubátová A., Gallagher J. R., Sorensen J. A., Miller D. J. (2005). Persistence and biodegradation of monoethanolamine and 2-propanolamine at an abandoned industrial site. *Environmental Science & Technology*; 39: 3639-3645.	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 closed-loop production of office paper from recycled paper feedstock (DEFRA, 2012). The value represents the amount of industrial waste generated during pulp and paper production at a facility in Germany. An uncertainty factor has not been applied to the cited value since the facility is representative of the operations at other facilities using water treatment chemicals. DEFRA (2012). Streamlined LCA of Paper Supply Stream. Department for Environment Food & Rural Affairs. London, United Kingdom. http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18956.	Y	N

FS Section	Content field	Explanation of content	CSR	eSDS
References to SPERC Background Document				
	Reference to Background Document	ESIG/ESVOC (2023). SpERC Background Document (2nd revision). Specific Environmental Release Categories (SpERCs) for the professional use of solvents and solvent-borne substances for agrochemical use, polymer processing, and water treatment chemicals.	Y	N