FS Section	Content field	Explanation of content	CSR	eSDS
1. Title	**1.1 Title of SPERC**	Agrochemical use (professional): solvent-borne	Y	Y
	1.2 SPERC code	ESVOC SPERC 8.11a.v3	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:	Application of surface coatings and binders in road and construction activities, including paving uses, manual mastic and in the application of roofing and water-proofing membranes.	Y	Y
	2.3 List of applicable Use Descriptors			
	LCS	PW – Widespread use by professional workers	Y	Y
	SU	SU1 – Agriculture, forestry, fishery	Y	Y
	PC	PC8 – Biocidal products	Y	Y
3. Operational conditions	**3.1 Conditions of use**			
	Location of use	Indoor/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):	DPI&F (2005). Agricultural Chemical Users' Maual: Guidelines and Principles for Responsible Agricultural Chemical Use. The State of Queensland, Department of Primary Industriies and Fisheries. Brisbane, Australia. https://www.daf.qld.gov.au/__data/assets/pdf_file/0009/54738/AgChem-UsersManual.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):	DPI&F (2005). Agricultural Chemical Users' Maual: Guidelines and Principles for Responsible Agricultural Chemical Use. The State of Queensland, Department of Primary Industriies and Fisheries. Brisbane, Australia. https://www.daf.qld.gov.au/__data/assets/pdf_file/0009/54738/AgChem-UsersManual.pdf.	Y	N
5. Exposure Assessment Input	**5.1 Substance use rate**			
	Amount of substance use per day:	Supplied by registrant	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 8.11a.v3	Y	N
	ERC	ERC 8a ERC 8d		
	sub-SPERC applicability:	None	Y	N
	5.3.1 Release Factor – air			

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	Numeric value / percent of input amount (Air)	75%	Y	Y
	Justification of RFs (Air):	The value was assigned using a mass balance approach that considers the results from an environmental chamber study examining the volatilization of carrier solvents used to formulate agricultural pesticides and insecticides. The average 14-day release factor of 75% was determined for a group of nine solvents with vapor pressures ranging from 0.01 to 30 Pa and emission factors ranging from 0.4% to 99.3% (Toose et al., 2015). Toose L., Warren C., Mackay D., Parkerton T., Letinski D., Manning R., Connelly M., Rohde A., Fritz B., Hoffmann W. C. (2015). Assessing the fate of an aromatic hydrocarbon fluid in agricultural spray applications using the three-stage ADVOCATE model framework. *Journal of Agricultural and Food Chemistry*; 63: 6866-6875.	Y	N
	5.3.2 Release Factor – water			
	Numeric value / percent of input amount (Water):	3%	Y	Y
	Justification of RFs (Water):	A compilation of measured surface runoff losses from fields in the southwestern U.S. lists the individual results for three types of pesticide formulatons (Wauchope, 1978). The percentage of applied liquid pesticide that was lost long-term due to rain events was reported to be no greater than 3% for the various formulations. Since the water solubility characteristics of the active ingredient and inactive carriers in a pesticide are not expected to be appreciably different, the maximum release of the active ingredient provides a suitable surrogate for predicting the degree of stormwater runoff for the inert substances used in the product formulation. Wauchope R. D. (1978). The pesticide content of surface water draining from agricultural fields—A review. *Journal of Environmental Quality*; 7: 459-472.	Y	N
	5.3.3 Release Factor – soil			
	Numeric value / percent of input amount (Soil):	17%	Y	Y
	Justification of RFs (Soil):	The irreversible sorption of a non-ionic pesticide was determined using a soil sorption model that considered the kinetic data collected during a laboratory examination of irreversible binding (Suddaby, 2012). The model predicted a maximum irreversible absorption to soil of 15% for a non-ionic pesticide. This value has been modified upward 17% to preserve the overall mass balance and assumes that the sorptive behavior of the inert carrier solvents approximates the results observed with the active ingredients used in the formulation. Suddaby L. A. (2012). Investigation into Irreversible Sorption of Pesticides to Soil. Thesis. University of York, York, England. https://core.ac.uk/download/pdf/9554465.pdf	Y	N
	5.3.4 Release Factor – waste			
	Percent of input amount disposed as waste:	5%	Y	N
	Justification of RFs:	The value was derived from survey data that documented the annual loss of empty pesticide jugs, pails and drums after accounting for the returns to plastic recycling facilities in Ontario (WMCS, 2011). This value of 55 tonnes/yr was divided by the annual pesticide sales volume of 5403 tonnes/yr for application on fruit, vegetable, and field crops in Ontario (FFCO, 2015). An uncertainty factor of 5 has been applied to the resulting waste release factor of 1% since the survey did not account for the disposal of unused agricultural chemicals seeing widespread use. FFCO (2015). Survey of Pesticide Use in Ontario, 2013/2014: Estimates of Pesticides Used on Field Crops and Fruit and Vegetable Crops. Farm & Food Care Ontario Guelph. Ontario. http://www.farmfoodcareon.org/wp-content/uploads/2016/10/ONTARIO-Pesticide-Use-Survey-Final-2013.pdf. WMCS (2011). Ontario Agricultural Waste Characterization Study. Waste Management Consulting Services. London, Ontario. https://cleanfarms.ca/wp-	Y	N

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		content/uploads/2017/07/OntarioAgWasteCharacterizationReport_FINAL_20110606.pdf.		
References to SPERC Background Document				
	Reference to Background Document	ESIG/ESVOC (2023). SpERC Background Document (2nd edition). 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