FS Section	Content field	Explanation of content	CSR	eSDS
1. Title	**1.1 Title of SPERC**	Binders and release agents (professional): solvent-borne	Y	Y
	1.2 SPERC code	ESVOC SPERC 8.10b.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:	Covers the use as binders and release agents including material transfers, mixing, application by spraying, brushing, and handling of waste.	Y	Y
	2.3 List of applicable Use Descriptors			
	LCS	PW – Widespread use by professional workers	Y	Y
	SU	SU0 - Other	Y	Y
	PC	PC24 – Lubricants, greases, release 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 accepted practices amd the manufacturers' instructions.	Y	Y
	Reference for RMM Efficiency (air):	USEPA (1996). Evaluation of Pollution Prevention Opportunities for Mold Release Agents. EPA/600/SR-96/075, U.S. Environmental Protection Agency, National Risk Management Research Laboratory. Research Triangle Park, NC. https://nepis.epa.gov/Exe/ZyPDF.cgi/P1000I81.PDF?Dockey=P1000I81.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 air are minimized when the product is used in accordance with accepted practices amd the manufacturers' instructions.	Y	Y
	Reference for RMM Efficiency (soil):	USEPA (1996). Evaluation of Pollution Prevention Opportunities for Mold Release Agents. EPA/600/SR-96/075, U.S. Environmental Protection Agency, National Risk Management Research Laboratory. Research Triangle Park, NC. https://nepis.epa.gov/Exe/ZyPDF.cgi/P1000I81.PDF?Dockey=P1000I81.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 8.10b.v3	Y	N
	ERC	ERC 8a ERC 8d		
	sub-SPERC applicability:	None	Y	N

FS Section	Content field	Explanation of content	CSR	eSDS
	5.3.1 Release Factor – air			
	Numeric value / percent of input amount (Air)	75%	Y	Y
	Justification of RFs (Air):	The value was derived from the use of professionally applied concrete release agents. A sales and emission survey conducted by the California Air Resources Board found that a total 219,983 gallons (97.4 tonnes/yr) of 25 different concrete form release agents were sold in a singled year (CARB, 2019). Further, VOC emissions from these release agents was reported to be 0.21 tons/day (69.5 tonnes/yr). These values yield an air release factor of 71.4%, which has been increased to 75% to ensure adequate coverage for all types of release agents other than those used within the state of California. CARB, 2019. Staff Report for Proposed Updates to the Suggested Control Measure for Architectural Coatings. California Air Resources Board. Sacramento, CA. https://ww2.arb.ca.gov/sites/default/files/2020-06/Staff_Report_4-19-2019_complete_remediated.pdf.	Y	N
	5.3.2 Release Factor – water			
	Numeric value / percent of input amount (Water):	12%	Y	Y
	Justification of RFs (Water):	The factor considers the migration of a hydrocarbon carrier diluent off the concrete form following a rainfall event (Gursel, et al., 2014). Concrete release agents are generally formulated using a carrier diluent such as kerosene, which possesses a water solubility limit of 7 g/L (Coleman, et al., 1984). A 10-year examination of monthly average rainfall intensities in rural regions of the Netherlands averaged 0.7 L/m2-hr and the duration averaged about 3.2 hr (Manola, et al., 2020). If the rainwater falling on freshly applied form release agent were saturated with kerosene at the water solubility limit, the overall flux of hydrocarbons into the rainwater would be 15.7 g/m^2 for a 3.2 hr rainfall event. A typical form release agent containing 80% kerosene applied at the maximum recommended rate of 200 ft^2/gal (0.20 L/m^2) yields an application rate of 128 g/m^2 assuming a kerosene density of 0.8 g/ml (Hurd, 2000). These values yield a conservatively determined water release factor of 12% for the professional use of binders and release agents. Gursel, A.P., Masanet, E., Horvath, A., Stadel, A., 2014. Life-cycle inventory analysis of concrete production: A critical review. Cement and Concrete Composites 51, 38-48. Coleman, W.E., Munch, J.W., Streicher, R.P., Ringhand, H.P., Kopfler, F.C., 1984. The identification and measurement of components in gasoline, kerosene, and no. 2 fuel oil that partition into the aqueous phase after mixing. Archives of Environmental Contamination and Toxicology 13, 171-178. Manola, I., Steeneveld, G.J., Uijlenhoet, R., Holtslag, A.A.M., 2020. Analysis of urban rainfall from hourly to seasonal scales using high-resolution radar observations in the Netherlands. International Journal of Climatology 40, 822-840. Hurd, M.K., 2000. Producers' guide: form-release agents. Concrete Construction Magazine February 01, 1-5.	Y	N
	5.3.3 Release Factor – soil			
	Numeric value / percent of input amount (Soil):	10%	Y	Y
	Justification of RFs (Soil):	The soil release factor considers the sloughing and shedding of excess concrete release diluent off the form following application (Nagalli, et al., 2013). Field studies have examined temporal changes in the concentration of 9 aliphatic and aromatic ingredients of kerosene following application to plots of land (Dror, et al., 2001). The soil total concentration of these kerosene components at application was 15,990 µg/g whereas the value at soil depth up to 10 cm was 1584 µg/g after 39 days. These data indicate a kerosene soil persistence of 10%, which provides a reasonably reliable estimate of the distribution that would be expected with the use of a release agent at a construction site.	Y	N

FS Section	Content field	Explanation of content	CSR	eSDS
		Nagalli, A., Lopes, F.P., Pereira, P.M., Hamaya, R.M., dos Santos Izzo, R.L., 2013. Analysis of wood waste contamination used in construction sites. Electronic Journal Geotechnical Engineering 18, 3999-4009. Dror, I., Gerstl, Z., Yaron, B., 2001. Temporal changes in kerosene content and composition in field soil as a result of leaching. Journal of Contaminant Hydrology 48, 305-323.		
	5.3.4 Release Factor – waste			
	Percent of input amount disposed as waste:	3%	Y	N
	Justification of RFs:	The waste factor was cited in a life cycle assessment for the production of concrete masonry from Portland cement (PCA, 2007). The production process requires the application of a releasing agent to the concrete forms to facilitate separation of the masonry block. The value of 3.0% includes the waste resulting from the production of concrete blocks using molds that have been coated with a form parting oil. This factor has not been adjusted since it provides an upper limit for the amount of binder or releasing agent that would be disposed of as waste during widescale professional use of these products PCA (2007). Life Cycle Inventory of Portland Cement Concrete. PCA R&D Serial No. 3007 Portland Cemet Association. Skokie, IL. http://www.nrmca.org/taskforce/item_2_talkingpoints/sustainability/sustainability/sn3011%5B1%5D.pdf.	Y	N
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 as binding agents, cleaning agents, and functional fluids. European Solvents Industry Group. Brussels, Belgium.	Y	N