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Appendix R.12-4.1: Description for Environmental Release Categories (ERC)

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Environmental Release Categories (ERC)			
	Name	Description	
ERC1	Manufacture of substances	Manufacture of organic and inorganic substances in chemical, petrochemical, primary metals and minerals industry including intermediates, monomers using continuous processes or batch processes applying dedicated or multi-purpose equipment, either technically controlled or operated by manual interventions	
ERC2	Formulation of preparations*	Mixing and blending of substances into (chemical) preparations in all types of formulating industries, such as paints and do-it- yourself products, pigment paste, fuels, household products (cleaning products), lubricants, etc.	
ERC3	Formulation in materials	Mixing or blending of substances which will be physically or che- mically bound into or onto a matrix (material) such as plastics additives in master batches or plastic compounds. For instance a plasticizers or stabilizers in PVC master-batches or products, crystal growth regulator in photographic films, etc.	
ERC4	Industrial use of processing aids in proc- esses and products, not becoming part of articles	Industrial use of processing aids in continuous processes or batch processes applying dedicated or multi-purpose equipment, either technically controlled or operated by manual interventions. For example, solvents used in chemical reactions or the 'use' of sol- vents during the application of paints, lubricants in metal working fluids, anti-set off agents in polymer moulding/casting.	
ERC5	Industrial use resulting in inclusion into or onto a matrix	Industrial use of substances as such or in preparations (non- processing aids), which will be physically or chemically bound into or onto a matrix (material) such as binding agent in paints and coatings or adhesives, dyes in textile fabrics and leather products, metals in coatings applied through plating and galvanizing proc- esses. The category covers substances in articles with a particu- lar function and also substances remaining in the article after having been used as processing aid in an earlier life cycle stage (e.g. heat stabilisers in plastic processing).	
ERC6a	Industrial use resulting in manufacture of another substance (use of intermediates)	Use of intermediates in primarily the chemical industry using continuous processes or batch processes applying dedicated or multi-purpose equipment, either technically controlled or operated by manual interventions, for the synthesis (manufacture) of other substances. For instance the use of chemical building blocks (feedstock) in the synthesis of agrochemicals, pharmaceuticals, monomers, etc.	
ERC6b	Industrial use of reactive processing aids	Industrial use of reactive processing aids in continuous processes or batch processes applying dedicated or multi-purpose equip- ment, either technically controlled or operated by manual inter- ventions. For example the use of bleaching agents in the paper industry.	
ERC6c	Industrial use of monomers for manufac- ture of thermo-plastics	Industrial use of monomers in the production of polymers, plastics (thermoplastics), polymerization processes. For example the use of vinyl chloride monomer in the production of PVC.	
ERC6d	Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers	Industrial use of chemicals (cross-linking agents, curing agents) in the production of thermosets and rubbers, polymer processing. For instance the use of styrene in polyester production or vulcani- zation agents in the production of rubbers.	

ERC7	Industrial use of substances in closed systems	Industrial use of substances in closed systems. Use in closed equipment, such as the use of liquids in hydraulic systems, cool- ing liquids in refrigerators and lubricants in engines and di-electric fluids in electric transformers and oil in heat exchangers. No in- tended contact between functional fluids and products foreseen, and thus low emissions via waste water and waste air to be ex- pected.
ERC8a	Wide dispersive indoor use of processing aids in open systems	Indoor use of processing aids by the public at large or profes- sional use. Use (usually) results in direct release into the envi- ronment/sewage system, for example, detergents in fabric wash- ing, machine wash liquids and lavatory cleaners, automotive and bicycle care products (polishes, lubricants, de-icers), solvents in paints and adhesives or fragrances and aerosol propellants in air fresheners.
ERC8b	Wide dispersive indoor use of reactive substances in open systems	Indoor use of reactive substances by the public at large or profes- sional use. Use (usually) results in direct release into the envi- ronment, for example, sodium hypochlorite in lavatory cleaners, bleaching agents in fabric washing products, hydrogen peroxide in dental care products.
ERC8c	Wide dispersive indoor use resulting in inclusion into or onto a matrix	Indoor use of substances (non-processing aids) by the public at large or professional use, which will be physically or chemically bound into or onto a matrix (material) such as binding agent in paints and coatings or adhesives, dyeing of textile fabrics.
ERC8d	Wide dispersive outdoor use of process- ing aids in open systems	Outdoor use of processing aids by the public at large or profes- sional use. Use (usually) results in direct release into the envi- ronment, for example, automotive and bicycle care products (pol- ishes, lubricants, de-icers, detergents), solvents in paints and adhesives.
ERC8e	Wide dispersive outdoor use of reactive substances in open systems	Outdoor use of reactive substances by the public at large or pro- fessional use. Use (usually) results in direct release into the envi- ronment, for example, the use of sodium hypochlorite or hydrogen peroxide for surface cleaning (building materials)
ERC8f	Wide dispersive outdoor use resulting in inclusion into or onto a matrix	Outdoor use of substances (non-processing aids) by the public at large or professional use, which will be physically or chemically bound into or onto a matrix (material) such as binding agent in paints and coatings or adhesives.
ERC9a	Wide dispersive indoor use of sub- stances in closed systems	Indoor use of substances by the public at large or professional (small scale) use in closed systems. Use in closed equipment, such as the use of cooling liquids in refrigerators, oil-based elec- tric heaters.
ERC9b	Wide dispersive outdoor use of sub- stances in closed systems	Outdoor use of substances by the public at large or professional (small scale) use in closed systems. Use in closed equipment, such as the use of hydraulic liquids in automotive suspension, lubricants in motor oil and break fluids in automotive brake systems.
ERC10a	Wide dispersive outdoor use of long-life articles and materials with low release	Low release of substances included into or onto articles and ma- terials during their service life in outdoor use, such as metal, wooden and plastic construction and building materials (gutters, drains, frames, etc.)

ERC10b	Wide dispersive outdoor use of long-life articles and materials with high or in- tended release (including abrasive proc- essing)	Substances included into or onto articles and materials with high or intended release during their service life from outdoor use. Such as tyres, treated wooden products, treated textile and fabric like sun blinds and parasols and furniture, zinc anodes in com- mercial shipping and pleasure craft, and brake pads in trucks or cars. This also includes releases from the article matrix as a re- sult of processing by workers. These are processes typically related to PROC 21, 24, 25, for example: Sanding of buildings (bridges, facades) or vehicles (ships).
ERC11a	Wide dispersive indoor use of long-life articles and materials with low release	Low release of substances included into or onto articles and ma- terials during their service life from indoor use. For example, flooring, furniture, toys, construction materials, curtains, foot- wear, leather products, paper and cardboard products (maga- zines, books, news paper and packaging paper), electronic equipment (casing).
ERC11b	Wide dispersive indoor use of long-life articles and materials with high or in- tended release (including abrasive proc- essing)	Substances included into or onto articles and materials with high or intended release during their service life from indoor use. For example: release from fabrics, textiles (clothing, floor rugs) during washing. This also includes releases from the article matrix as a result of processing by workers. These are processes typically related to PROC 21, 24, 25. For example removal of indoor paints.
ERC12a	Industrial processing of articles with abrasive techniques (low release)	Substances included into or onto articles and materials are re- leased (intended or not) from the article matrix as a result of pro- cessing by workers. These processes are typically related to PROC 21, 24, 25. Processes where the removal of material is intended, but the expected release remains low, include for ex- ample: cutting of textile, cutting, machining or grinding of metal or polymers in engineering industries.
ERC12b	Industrial processing of articles with abrasive techniques (high release)	Substances included into or onto articles and materials are re- leased (intended or not) from/with the article matrix as a result of processing by workers. These processes are typically related to PROC 21, 24, 25. Processes where the removal of material is intended, and high amounts of dust may be expected, includes for example: sanding operations or paint stripping by shot- blasting.
	Other environmental characteristics; please specify	