Date: 19 February 2010
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REACH: SpERC (specific emission release category) for the manufacture of coatings and inks: streamlining of OECD emission factors and testing vs default factors

SpERC M3: Manufacture of *powder* coatings and inks: selection and justification for SpERCs

<table>
<tr><th></th><th>Characteristics of specific ERC</th><th>Type of Input Information</th><th>Processing of Input Information</th></tr>
<tr><td>Title of specific ERC</td><td>Manufacture of powder coatings and inks</td><td></td><td></td></tr>
<tr><td>Based on ERC</td><td>2 (Formulation of preparations)</td><td></td><td></td></tr>
<tr><td>Scope</td><td>Formulation of powder coatings and inks</td><td></td><td></td></tr>
<tr><td>Use rates</td><td>Powder coatings and inks are comprised of substances, grouped by functional categories, with the typical maximum use of any one substance in each category as follows

<table>
<tr><th>Substance category</th><th>Maximum use for any one substance[1] (tonnes/day)</th></tr>
<tr><td>Pigment/extender/filler</td><td>50</td></tr>
<tr><td>Binder</td><td>50</td></tr>
<tr><td>Additives</td><td>1</td></tr>
<tr><td></td><td>[1]Note: in many coatings and inks manufacturing facilities, usage rates will be substantially below the figures shown</td></tr>
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</td><td></td><td></td></tr>
<tr><td>Emission fractions</td><td>1. To air:

Releases to the air during manufacturing processes are expected to be
max. 0.0097 %
of the substance volume used per site.</td><td>1.EMISSION SCENARIO DOCUMENT ON COATINGS INDUSTRY (PAINTS, LACQUERS AND VARNISHES), OECD, July 2009</td><td></td></tr>
</table>

	Characteristics of specific ERC	Type of Input Information	Processing of Input Information
	2. To wastewater/sewer/watercourses: Emissions via equipment cleaning and subsequent discharge to wastewater. Release to wastewater is expected to be **max. 0.5 %** of the substance volume used per site.		
	3. To soil: <u>Liquid substances:</u> 0 % <u>Solid substances:</u> 0%		
Type of RMM (not applicable to a route with 0% emission)	**Particulates** RMMs are primarily aimed at controlling emissions of particulates at the most significant emission points to atmosphere from sources within the manufacturing process where airborne particulates can be created. Typically: - particulate raw materials are delivered in bulk tankers and discharged to closed silos - particulate raw materials are delivered in closed packaging (IBCs, drums, boxes, sacks) - closed transfers of particulates from storage to production equipment (e.g. metered piped or pumped additions) is used - no extraction is used on closed production equipment, when adding and incorporating particulate raw materials - use of semi-closed production vessels with extraction to atmosphere are used to maintain workplace airborne particulate concentrations below respective OELs - cyclone and bag filters, connected to (often multiple) emission sources, are used to control emissions from manufacturing plant - particulate wastes are stored in closed containers.		
Efficiency of RMMs (not applicable to a route with 0% emission)	**Particulate RMMs** Bag and cyclone filters are typically rated at 99% efficient.		

	Characteristics of specific ERC	Type of Input Information	Processing of Input Information
Narrative description of/ justification for specific ERC	**Description:** The manufacture of powder coatings and inks is a multi-stage batch process. The process is arranged to maximise the efficiency of use of input raw materials, through the highest conversion into formulated products. Process losses are reduced to the absolute minimum, through use of general and manufacturing plant extraction to maintain workplace concentrations of airborne particulates below respective OELs; and through use of closed or covered manufacturing equipment, wherever possible, to minimise generation of particulates. The composition of products and the overall process are such that there are no discharges of raw materials or products to waste-water or to soil from the manufacturing plant. **Justification**: The overall high efficiency of the coatings and inks manufacturing process is reflected in the low emission factors identified in independent assessments, such as that carried out by the UK's Environment Protection Agency, as part of the development of an Emission Scenarios Document for the OECD.		