

## 13. ES 13: Service life (professional worker); Service life of nickel-containing electronics/ferrite cores in professional settings

### 13.1. Title section

Article category: Machinery, mechanical appliances, electrical/electronic articles (AC 2)

<b>Environment</b>	
1: Service life of nickel-containing electronics/ferrite cores in professional settings	ERC 11a
<b>Worker</b>	
2: Handling of nickel-containing electronics/ferrite cores	PROC 21
<b>Exposure scenario of the uses leading to the inclusion of the substance into the article</b>	
ES 10: Use at industrial sites; Metal surface treatment products; Manufacture of computer, electronic and optical products, electrical equipment; Use of nickel oxide for the production of nickel-containing electronics and thermally functioning ceramics	
ES 11: Use at industrial sites; Metal surface treatment products; Manufacture of computer, electronic and optical products, electrical equipment; Use of nickel oxide powder for the production of nickel zinc ferrite cores	

### 13.2. Conditions of use affecting exposure

#### 13.2.1. Control of environmental exposure: Service life of nickel-containing electronics/ferrite cores in professional settings (ERC 11a)

<b>Technical and organisational conditions and measures</b>
The substance should not be released to air
The substance should not be released to water
<b>Conditions and measures related to biological sewage treatment plant</b>
Municipal sewage treatment plant is assumed.
<b>Conditions and measures related to external treatment of waste (including article waste)</b>
Dispose of waste product or used containers according to local regulations.

#### 13.2.2. Control of worker exposure: Handling of nickel-containing electronics/ferrite cores (PROC 21)

<b>Product (article) characteristics</b>
Maximum emission potential covered in this ES: Low (abrasion based).
Physical form of product; Massive object
<b>Conditions and measures related to personal protection, hygiene and health evaluation</b>
Wear suitable gloves tested to EN374.; For further specification, refer to section 8 of the SDS.

### 13.3. Exposure estimation and reference to its source

### 13.3.1. Environmental release and exposure: Service life of nickel-containing electronics/ferrite cores in professional settings (ERC 11a)

Release route	Release rate	Release estimation method
Water	0 kg/day	Estimated release factor
Air	0 kg/day	Estimated release factor
Soil	0 kg/day	Estimated release factor

### 13.3.2. Worker exposure: Handling of nickel-containing electronics/ferrite cores (PROC 21)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	9E-3 mg/m <sup>3</sup> (Measured data)	0.18
Inhalation, local, long term	9E-3 mg/m <sup>3</sup> (Measured data)	0.18
Inhalation, local, acute	0.037 mg/m <sup>3</sup> (Measured data)	< 0.01
Dermal, local, long term	5.18 µg/cm <sup>2</sup> (Measured data)	0.432
Combined, systemic, long term		0.18

### 13.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance: Please refer to Section 0.3 of this "ES for Communication".