

15. ES 15: Service life (worker at industrial site); Production of vehicle exhaust systems in industrial settings

15.1. Title section

Article category: Vehicles covered by End of Life Vehicles (ELV) directive (AC 1a)

Environment	
1: Production of vehicle exhaust systems in industrial settings	ERC 12c
Worker	
2: Handling/Packaging of finished article (catalyst brick/monolith) and assembly into vehicle exhaust system with no release	PROC 21
Exposure scenario of the uses leading to the inclusion of the substance into the article	
ES 14: Use at industrial sites; Other; General manufacturing, e.g. machinery, equipment, vehicles, other transport equipment.; Use of nickel oxide for the production of nickel oxide-containing automotive catalysts	

15.2. Conditions of use affecting exposure

15.2.1. Control of environmental exposure: Production of vehicle exhaust systems in industrial settings (ERC 12c)

Amount used, frequency and duration of use (or from service life)
Daily amount per site \leq 0.038 tonnes/day (All the amounts and concentrations are expressed as Ni as this is the driver for the environmental risk assessment.)
Annual amount per site \leq 10 tonnes/year
Technical and organisational conditions and measures
The substance should not be released to air
The substance should not be released to water
Conditions and measures related to external treatment of waste (including article waste)
Dispose of waste product or used containers according to local regulations.

15.2.2. Control of worker exposure: Handling/Packaging of finished article (catalyst brick/monolith) and assembly into vehicle exhaust system with no release (PROC 21)

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

15.3. Exposure estimation and reference to its source

15.3.1. Environmental release and exposure: Production of vehicle exhaust systems in industrial settings (ERC 12c)

Release route	Release rate	Release estimation method
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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

15.3.2. Worker exposure: Handling/Packaging of finished article (catalyst brick/monolith) and assembly into vehicle exhaust system with no release (PROC 21)

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

15.4. 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".