

## Succinct summary of representative risk management measures (RMMs) and operational conditions (OCs)

Legal name of applicant(s): Tyco Electronics UK Ltd

Submitted by: Tyco Electronics UK Ltd

Substance: Chromium trioxide  
EC No. 215-607-8, CAS No. 1333-82-0

Use title: Industrial use of a mixture containing hexavalent chromium compounds in conversion coating and passivation of circular and rectangular connectors in order to meet the requirements of international standards and special requirements of industries subject to harsh environments

Use number: Use 2

## Industrial use of hexavalent chromium in bath for the surface treatment of connectors

ECS and WCS	Task (ERC/spERC or PROC)	Annual amount per site (tonnes/year)	Technical RMMs, including: *Containment, *Ventilation (general, LEV...) *customized technical installation, etc	Organisational RMMs, including: *Duration and Frequency of exposure *OSH management system *Supervision *Monitoring arrangements *Training, etc	PPE (characteristics)	Other conditions	Effectiveness of waste water and waste air treatment (for ERC)	Release factors: water, air and soil (for ERC)	Detailed info in CSR (section)
ECS 1 IW-1	Industrial use resulting in inclusion onto a matrix (ERC 5)	1.2	No release is expected from the process except for 1) air extraction from the baths treatment, 2) waste production during the treatment of liquid effluents	The integrity of the process and efficiency of the wastewater treatment plant (WTP) is regularly monitored.	Not applicable	Not applicable	Aqueous releases: A wastewater treatment plant (WTP) is specifically used for recycling all the liquid effluents from the baths treatment. All the waste (sludge and used materials) produced during these treatments is managed by a specialised certified waste company.	Water No liquid effluents containing hexavalent chromium are released Air In the applicant estimation, the atmospheric releases are considered as low Soil None	9.2.1
WCS 1 IW-1.2	Sampling of bath (PROC 8a)	A tiny amount (maximum 100 ml) of the mixture is transferred into small vessels	General ventilation: 3ACH Open process Size of the work area $\geq 3000 \text{ m}^3$	General housekeeping practices in place Written procedure Manipulation performed by a dedicated operator Small amount handled	Protective gloves (EN374) Protective clothes	Annex 1	Not applicable	Not applicable	9.2.2 and Annex 1

ECS and WCS	Task (ERC/spERC or PROC)	Annual amount per site (tonnes/year)	Technical RMMs, including: *Containment, *Ventilation (general, LEV...) *customized technical installation, etc	Organisational RMMs, including: *Duration and Frequency of exposure *OSH management system *Supervision *Monitoring arrangements *Training, etc	PPE (characteristics)	Other conditions	Effectiveness of waste water and waste air treatment (for ERC)	Release factors: water, air and soil (for ERC)	Detailed info in CSR (section)
WCS 2 IW-1.3	Lab analysis (PROC 15)	Sample of maximum 100ml	Enclosing hood, fume cupboard	General housekeeping practices in place Written procedure Manipulation performed by a dedicated operator Small amount handled Open surface <0.1m <sup>2</sup>	Protective gloves (EN374) Protective clothes	Annex 1	Not applicable	Not applicable	9.2.3 and Annex 1
WCS 3 IW 1.4	Other activities next to the bath (PROC 28)	1.2	General ventilation: 3ACH Size of the work area ≥ 3000 m <sup>3</sup> Open surface: 0.3 to 1m <sup>2</sup>	General housekeeping practices in place Written procedure Manipulation performed by a dedicated operator Small amount handled	Protective gloves (EN374) Protective clothes	Annex 1	Not applicable	Not applicable	9.2.4 and Annex 1
WCS 4 IW-1.8	Repacking of a liquid (PROC 26)	0.20	Handling that reduces contact between product and adjacent air Transfer performed by using a fume cupboard Drop height < 0.5 m	Careful transfer involves workers showing attention to potential danger General housekeeping practices in place Written procedure Manipulation performed by a dedicated operator	Respiratory protective equipment (APF = 10) Protective gloves (EN374) Protective clothes	Annex 1	Not applicable	Not applicable	9.2.5 and Annex 1

ECS and WCS	Task (ERC/spERC or PROC)	Annual amount per site (tonnes/year)	Technical RMMs, including: *Containment, *Ventilation (general, LEV...) *customized technical installation, etc	Organisational RMMs, including: *Duration and Frequency of exposure *OSH management system *Supervision *Monitoring arrangements *Training, etc	PPE (characteristics)	Other conditions	Effectiveness of waste water and waste air treatment (for ERC)	Release factors: water, air and soil (for ERC)	Detailed info in CSR (section)
WCS 5 IW-1.9	Addition of the liquid to the bath (PROC 8a)	<1.2	General ventilation: 3ACH Size of the work area $\geq 3000 \text{ m}^3$ Handling that reduces contact between product and adjacent air Flow of transfer: 1-10l/min	General housekeeping practices in place Written procedure	Respiratory protective equipment (APF = 10)  Protective gloves (EN374) Protective clothes	Annex 1	Not applicable	Not applicable	9.2.6 and Annex 1
WCS 6 IW-1.12	Handling of the articles (PROC 21)	<1.2	No liquid form of the mixture of hexavalent chromium remaining on the article Remaining hexavalent chromium is lower than 0.01%	General housekeeping practices in place Written procedure	Protective gloves (EN374) Protective clothes	Annex 1	Not applicable	Not applicable	9.2.7 and Annex 1
WCS 7 IW-1.13	Dipping connector parts in treatment bath, in the worker's near field (PROC 13)	<1.2	General ventilation: 3ACH Local exhaust ventilation (LEV), fixed capturing hood Size of the work area $\geq 3000 \text{ m}^3$ Open surface: 1 to $3\text{m}^2$	General housekeeping practices in place Written procedure	Protective gloves (EN374) Protective clothes	Annex 1	Not applicable	Not applicable	9.2.8 and Annex 1

ECS and WCS	Task (ERC/spERC or PROC)	Annual amount per site (tonnes/year)	Technical RMMs, including: * Containment, * Ventilation (general, LEV...) * customized technical installation, etc	Organisational RMMs, including: * Duration and Frequency of exposure * OSH management system * Supervision * Monitoring arrangements * Training, etc	PPE (characteristics)	Other conditions	Effectiveness of waste water and waste air treatment (for ERC)	Release factors: water, air and soil (for ERC)	Detailed info in CSR (section)
WCS 8 IW-1.14	Dipping connector parts in rinsing bath, in the worker's near field (PROC 13)	<1.2	General ventilation: 3ACH Size of the work area ≥ 3000m <sup>3</sup> Open surface: 0.3 to 1m <sup>2</sup>	General housekeeping practices in place Written procedure	Protective gloves (EN374) Protective clothes	Annex 1	Not applicable	Not applicable	9.2.9 and Annex 1
WCS 9 IW-1.15	Treatment baths in the worker's far field (PROC 15)	<1.2	General ventilation: 3ACH Local exhaust ventilation (LEV), fixed capturing hood Size of the work area ≥ 3000 m <sup>3</sup> Open surface: 1 to 3m <sup>2</sup>	General housekeeping practices in place Written procedure	Protective gloves (EN374) Protective clothes	Annex 1	Not applicable	Not applicable	9.2.10 and Annex 1
WCS 10 IW-1.16	Drying connector parts (PROC 7)	<0.36	General ventilation: 10 ACH Size of the work area ≥ 3000 m <sup>3</sup> Drying with a pistol (spraying downward with no or low compressed air) Very low application rate (< 0.03 l/min)	General housekeeping practices in place Written procedure	Respiratory protective equipment (APF = 10) Protective gloves (EN374) Protective clothes	Annex 1	Not applicable	Not applicable	9.2.11 and Annex 1

Abbreviations: WCS=Worker Contributing Scenario, ECS=Environmental Contributing Scenario,\* ERC=Environmental Release Category (or spERC if available) , PROC= Process Category, LEV=Local Exhaust Ventilation, PPE=Personal Protective Equipment