

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

Legal name of applicants: *APPH Ltd*

Submitted by: *APPH Ltd*

Substance: *Chromium trioxide [CAS 1333-82-0; EC 215-607-8]*

Use title: *Use of chromium trioxide for functional chrome plating of aircraft components for civil & military sectors that meet the airworthiness certification requirements and hydraulic components for military vehicles*

Use number: *1*

Exposure scenario: Industrial use of CrO₃ for chrome plating engineering components

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 (Chapter)
ECS 1	ERC 6b Industrial use of CrO ₃ in the production of chrome plated engineering components	#B [0.5-1.5] (approx. #B [0.25-0.75] CrVI)	All CrVI containing wastewater that is not recycled to top up bath volume is collected and taken for treatment off-site by an authorised waste contractor. CrVI containing exhaust gases from the local exhaust ventilation systems are passed through a wet scrubber before release from the stack. All CrVI containing solid and liquid waste streams are collected and sent for disposal as hazardous waste by authorised waste contractors	The ventilation and abatement system has scheduled regular maintenance. Occupational health and safety management system: advanced The site complies with the requirements of UK national legislation (COSHH) All activities are undertaken with appropriate and well-maintained equipment by trained personnel operating under supervision; Ensure regular inspection, cleaning and maintenance of equipment and machines; Clean spills immediately and dispose of waste safely; Ensure daily cleaning of the equipment			Emissions to air are regularly monitored. All CrVI containing wastewater is collected for treatment off-site.	Water: 0 % Air: 8.6E-01 % Soil: 0 %	9.2.1

WCS 1	PROC 1 Delivery and storage of CrO ₃		Drums are sealed. Basic ventilation: 1 ACH Containment: closed drums in a dedicated storage room.	Duration & frequency of activity < 5 min once a month Occupational Health and Safety Management System: advanced	Workwear Technical gloves Safety glasses Safety shoes/boots	Concentration of CrO ₃ in drums: < 100% Place of use: storage room Process temperature: room temperature			9.2.2
WCS 2	PROC 13 Manual chrome plating operations		Enhanced ventilation: 5-10 ACH LEV: LEV on both sides of the chromic acid baths Mist suppressant used Containment: open	Duration & frequency of activity: < 90 mins/day Occupational Health and Safety Management System: advanced	Workwear Acid resistant gloves Safety glasses /safety shield Safety shoes/boots	Activities on the line: concentration of CrO ₃ in the baths: substantial Handling contaminated objects: First rinsing - concentration of CrO ₃ : minor and level of surface contamination > 90 % Final rinsing- concentration of CrO ₃ : extremely small and level of surface contamination < 10 % Place of use: Indoor Plating process temperature: #A [30-70] °C; Rinsing temperature: room temperature			9.2.3
WCS 3	PROC 8b		Enhanced ventilation: 5-10 ACH	Duration & frequency of activity: < 30 mins/month	Workwear Acid resistant gloves	Activity next to the bath: Concentration of CrO ₃ in the baths: substantial			9.2.4

	Sampling chromate baths		LEV: LEV on both sides of the chromic acid baths Mist suppressant used Containment: open	Occupational Health and Safety Management System: advanced	Safety glasses /safety shield Safety shoes/boots	Handling contaminated objects: concentration of CrO ₃ : minor and level of surface contamination > 90 % Place of use: Indoor Plating process temperature: : #A [30-70] °C Rinsing temperature: room temperature			
WCS 4	PROC 8b Concentration adjustment of baths		Enhanced ventilation: 5-10 ACH LEV: LEV on both sides of the chromic acid baths; LEV arm over the open drums at the weighing station Mist suppressant used Containment: open	Duration & frequency of activity: Transfer to smaller containers at the weighing station < 25 mins/month Transfer of CrO ₃ to the chromic acid baths < 15 mins/ month Rinsing empty drums < 20 mins/month Time spent next to the chromic acid baths < 30 mins per month Occupational Health and Safety Management System: Advanced	Workwear Acid resistant gloves Chemical resistant apron & coveralls Face glasses/ shield Safety shoes/boots RPE: Air fed respirator system (TH3)	Activity on the line exposure: concentration of CrO ₃ in the baths: substantial Transfer of CrO ₃ flakes to smaller containers and the bath: dry product, pure material Rinsing empty drums; concentration of CrO ₃ : small and level of surface contamination 10-90 % Place of use: Indoor Plating process temperature: : #A [30-70] °C; Rinsing			9.2.5

						temperature: room temperature			
WCS 5	PROC 28 Regular maintenance		Enhanced ventilation: 5-10 ACH LEV: LEV on both sides of the chromic acid baths Mist suppressant used Containment: open	Duration & frequency of activity: < 30 mins/day Occupational Health and Safety Management System: advanced	Workwear Acid resistant gloves Chemical resistant apron & coveralls (some tasks) Safety glasses /face shield Safety shoes/boots	Activity on the line: concentration of CrO ₃ in the baths: substantial Handling contaminated objects: concentration of CrO ₃ : main component and level of surface contamination: >90 % of surface Place of use: Indoor Plating area plating process temperature: #A [30-70] °C, Process temperature: room temperature			9.2.6
WCS 6	PROC 28 Rare maintenance		Enhanced ventilation: 5-10 ACH LEV: LEV on both sides of the chromic acid baths Mist suppressant used Containment: open	Duration & frequency of activity: Plating operator < 4 days per year External service providers: < 1.5 days/year Occupational Health and Safety Management System: advanced	Workwear Acid resistant gloves Chemical resistant apron/coveralls (some tasks) Safety glasses /face shield Safety shoes/boots RPE: Air fed respirator system (TH3) (some tasks)	Activity on the line: concentration of CrO ₃ in the baths: substantial Handling contaminated objects: concentration of CrO ₃ : substantial and level of surface contamination: > 90 % of surface Place of use: Indoor. Plating area plating process			9.2.7

						temperature: #A [30-70] °C; Process temperature: room temperature			
WCS 7	PROC 8b Waste and wastewater management		Enhanced ventilation: 5-10 ACH LEV: LEV on both sides of the chromic acid baths Mist suppressant used Containment: open	Duration & frequency of activity: < 10 mins per day Occupational Health and Safety Management System: Advanced	Workwear Acid resistant gloves Safety glasses /face shield Safety shoes/boots	Activity on the line: Concentration of CrO ₃ in the baths: substantial Handling contaminated objects: concentration of CrO ₃ : minor and level of surface contamination: >90 % of surface Place of use: Indoors Plating area plating process temperature: #A [30-70] °C; Process temperature: room temperature			9.2.8
WCS 8	PROC 0 Far field exposure – tasks done in the hall		Enhanced ventilation: 5-10 ACH LEV: LEV on both sides of the chromic acid baths Mist suppressant used Containment: open	Duration & frequency of activity: < 6.5 hrs/day Occupational Health and Safety Management System: advanced	Workwear Safety glasses Safety shoes/boots	Far field exposure to the chromic acid in the chromic acid baths Concentration of CrO ₃ in the baths: substantial			9.2.9

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