

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

**Legal name of applicant(s):** Almetron Ltd  
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Wrexham Industrial Estate  
Wrexham  
LL13 9UZ

**Submitted by:** Almetron Ltd

**Date:** 04/09/2024

**Substance:** chromium trioxide  
  
EC: 215-607-8  
CAS: 1333-82-0

**Use title:**  
  
The continued use of chromium trioxide for the formulation of surface treatment process solutions- specifically producing chromic acid from chromium trioxide by the addition of water, wetting agents and acids, no reactive chemistry.

Use 1, this application is for a UKREACH Licence Extension of 12 years to allow Almetron Ltd to continue the formulation of chromium trioxide for sale to downstream users, who are covered by their own authorisation for the applications agreed with UKREACH.

**Exposure Scenario Use at an Industrial Site – Formulation of chromium trioxide for uses 2,4,5,and 6**

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	Use at a single industrial site- Use of chromium Trioxide for the formulation of surface treatment chemicals namely chromic acid	14 to 25 tonnes in total for this single site	Activity is conducted in a restricted banded zone. All activities are conducted at point of use to prevent work and man movement when conducting the formulation processes. SOPs exist for all processes. Personal Exposure data is available for consultation	<p>Almetron operates from Monday-Friday with a 40-hour week per employee. The employee's exposure limit is kept well within EH40/2005 Issue 4.</p> <p>All staff receive training in Chemical Safety, Spill Control, Special Training for chromium Trioxide.</p> <p>All staff receive annual health screening with includes lung function and skin checks.</p> <p>Staff who wear Respiratory Protective Equipment (RPE) have face fit checks to ensure it is adequate and suitable for the tasks. Tested to HSE INDG479 REV 1</p> <p>Occupational Exposure Monitoring-sampling to NIOSH Document 7600 to comply with Control of substances hazardous to health (COSHH) Regulations 2002 in particular Regulations 7 and 10. An analysis is also conducted of workers urine samples this is to measure</p>	Employees have suitable PPE for the task. Selected from the Risk Assrsments for the tasks they have been trained and approved to conduct	77 mins exposure in an 8-hour shift 66 shifts per year. When formulating chromium trioxide	The process has been designed to produce no wastewater from the production of chromic acid.	No emissions to soil. No emissions to air outside of the site No emissions to water	9.2.1

				concentrations and whole-body burdens. This data is used to assist in the risk assessments required under regulation 6 of the COSHH Regulations 2002 on the processes to formulate chromium Trioxide testing is conducted annually by RPS Occupational Health Ltd					
<b>WCS 1</b>	Receipt & storage of chromium trioxide	14 to 25 tonnes in total for this single site	General ventilation. Stored in secure containers in a dedicated bunded Bay 13 location in line with the COSHH Assessment. 900kg is the maximum we store in Bay 13	All trained staff with access to the storage areas have been informed of the risks of working with chromium trioxide, the safe way of handling chromium trioxide and use of PPE and other control equipment. We have a Spill Control procedure and refresher training conducted twice per year along with a Spill simulation once per year. Reports are available. SOPs are available along with Risk Assessments and COSHH Assessments.	Wear chemically resistant gloves, coveralls, eye protection, face protection and RPE in case of accidental spillage or contaminants on the surface of the containers	Duration of task 2 mins	Not applicable	Chromium trioxide is in sealed containers – no exposure.  There are stored in Bay 13 which is bunded and exclusive for incoming chromium trioxide 25kg Drums. Max storage 900kg	9.2.1
<b>WCS 2</b>	Decanting and weighing of solids	14 to 25 tonnes in total for this single site	General ventilation  Water blanket created in TANK 3 before charging with chromium trioxide.  Load cell on Tank 3 to measure formulation as it enters the vessel to prevent double handling and weighing before dispensing into the tank. Unique Work Instruction Sheet provided	Weighed when decanted into the mixing tank into a blanket of water. Product order Work instruction sheet (WIS). Standard Operating Procedures. Dedicated Mixing Tank. Load cell for measuring formulation mix. General Ventilation Bunded and Restricted work area Area closed off to other staff during production activity Spill and First Aid Trained staff available. Low exposure recorded during flake additions. See page 42 of the CSR	Wear chemically resistant gloves, coveralls, eye protection, face protection and RPE in case of accidental spillage or contaminants on the surface of the containers	Duration of task 20 mins  Use SOP	Not applicable	No emissions to soil. No emissions to air outside of the site No emissions to water	9.2.2

<b>WCS 3</b>	Transfer to vessel aqueous solution	14 to 25 tonnes in total for this single site	Washings from drum cleaning process containing <5% chromium trioxide added to formulation mix to prevent going into waste stream. Unique Work Instruction Sheet provided, SOP's Area closed off during processing.	Weighed when decanted into the mixing tank into the blanket of water and chrome mix Product order Work instruction sheet (WIS) Standard Operating Procedures Dedicated Mixing Tank Load cell for measuring formulation Mix General Ventilation Bunded and Restricted work area Area closed off to other staff during production activity Spill and First Aid Trained staff available. Low exposure recorded during tank additions. See page 42 of the CSR	Wear chemically resistant gloves, coveralls, eye protection, face protection and RPE in case of accidental spillage	Duration of task 10 mins	Not applicable	No emissions to soil. No emissions to air outside of the site No emissions to water	9.2.3
<b>WCS 4</b>	Mixing by dilution	14 to 25 tonnes in total for this single site	Mixing by Dilution  Standard Operating Procedures Dedicated Mixing Tank Load cell for measuring formulation Mix General Ventilation Bunded and Restricted work area Area closed off to other staff during production activity Spill and First Aid Trained staff available.	Clean water added Chrome Flake added Tank Clean Washings added Drum Clean washings added Product order Work instruction sheet (WIS) shows the amount to be added, PPE to be worn and special instructions for the unique order, that has full traceability. Standard Operating Procedures Dedicated Mixing Tank	Wear chemically resistant gloves, coveralls, eye protection, face protection and RPE in case of accidental spillage	Duration of task 10 mins	Not applicable	No emissions to soil. No emissions to air outside of the site No emissions to water	9.2.4

				<p>Load cell for measuring formulation Mix</p> <p>General Ventilation</p> <p>Bunded and Restricted work area</p> <p>Area closed off to other staff during production activity</p> <p>Spill and First Aid Trained staff available.</p>					
<b>WCS 5</b>	Transfer to storage container	14 to 25 tonnes in total for this single site	<p>Transfer the Formulation to a new but still inspected UN approved IBC. The IBC that will be receiving the liquid is put on a portable bund. Dedicated transfer pipe colour coded, unique ID number and inspection records retained. Product is labelled for shipment</p> <p>Spill Kit is located in the area</p> <p>Product order Work instruction sheet (WIS) shows the customer requirements, PPE to be worn and any special instructions for the unique order, that has full traceability.</p> <p>Standard Operating Procedures</p> <p>Dedicated Mixing Tank</p> <p>General Ventilation</p> <p>Bunded and Restricted work area</p>	<p>Unique Work Instruction Sheet</p> <p>Standard Operating Procedures</p> <p>Trained staff</p> <p>Dedicated Mixing Tank</p> <p>General Ventilation</p> <p>Bunded and Restricted work area</p> <p>Area closed off to other staff during production activity</p> <p>Spill and First Aid Trained staff available.</p>	Wear chemically resistant gloves, coveralls, eye protection, face protection and RPE in case of accidental spillage.	Duration of task 5 mins	Not applicable	<p>No emissions to soil.</p> <p>No emissions to air outside of the site</p> <p>No emissions to water</p>	9.2.5

			Area closed off to other staff during production activity						
<b>WCS 6</b>	Transfer to small containers	2 tonnes decanted in total for this single site	<p>Transfer from IBC to 25 litre containers for small volume customer orders</p> <p>Dedicated transfer pipe colour coded, unique ID number and inspection records retained to fill via a trigger operated nozzle. Clean new and inspected 25 litre UN approved clear containers are used.</p> <p>The containers that will be receiving the liquid are put on a portable bund. Product is labelled for shipment.</p> <p>Spill Kit is located in the area .</p> <p>Product order Work instruction sheet (WIS) shows the customer requirements, PPE to be worn and any special instructions for the unique order, that has full traceability.</p> <p>Standard Operating Procedures</p> <p>Dedicated Decanting Area -Room 7 used</p> <p>General Ventilation Bunded and Restricted work area</p> <p>Area closed off to other staff during production activity</p> <p>Spill and First Aid Trained staff available.</p>	<p>Spill Kit is located in the area</p> <p>Product order Work instruction sheet (WIS) shows the customer requirements, PPE to be worn and any special instructions for the unique order, that has full traceability.</p> <p>Standard Operating Procedures</p> <p>Dedicated Decanting Area -Room 7 used</p> <p>General Ventilation Bunded and Restricted work area</p> <p>Area closed off to other staff during production activity</p> <p>Spill and First Aid Trained staff available.</p>	<p>Wear chemically resistant gloves, coveralls, eye protection, face protection and RPE in case of accidental spillage</p>	<p>Duration of task 2 mins</p>	<p>Not applicable</p>	<p>No emissions to soil.</p> <p>No emissions to air outside of the site</p> <p>No emissions to water</p>	<p>9.2.6</p>

<b>WCS7</b>	Cleaning of Equipment	66 mixes per year	<p>All equipment cleaned on completion of order. Dedicated Mixing Tank is washed through until clean with 50 litres of water and blended into the final product. RPE Respiratory equipment and all other PPE is cleaned in line with the training provided. Disposable protective coveralls are removed, labelled and disposed of in the hazardous waste. A Spill Kit is located in the area</p> <p>Standard Operating Procedures General Ventilation Bunded and Restricted work area Area closed off to other staff during production activity Spill and First Aid Trained staff available.</p>	<p>RPE Respiratory equipment and all other PPE is cleaned in line with the training provided. Disposable protective coveralls are removed, labelled and disposed of in the hazardous waste. A Spill Kit is located in the area</p> <p>Standard Operating Procedures General Ventilation Bunded and Restricted work area Area closed off to other staff during production activity Spill and First Aid Trained staff available.</p>	<p>Wear chemically resistant gloves, coveralls, eye protection, face protection and RPE in case of accidental spillage</p>	Duration of task 5 mins	Not applicable	<p>No emissions to soil. No emissions to air outside of the site No emissions to water</p>	9.2.7
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WCS8	Maintenance of Equipment	66 mixes per year	<p>Maintenance schedule pre and post formulation. Ensure all equipment is clean prior to maintenance work is conducted. Complete Daily, Weekly and Monthly Inspection Sheets. Complete Maintenance Request forms and put on the maintenance tracking system, for any work to be undertaken. Work will be planned and prioritised based on risk and appropriate contractors, in house or external engineer support. External contractors would be expected to sign a permit to work before any work is undertaken once they are fully aware of any risks associated with the process, plant and equipment suitable PPE will be worn a visitor and contractors' induction is given on visiting Almetron Ltd. Standard Operating Procedures General Ventilation Bunded and Restricted work area Area closed off to other staff during production activity Spill and First Aid Trained staff available. Sign off in place at the end of the maintenance activity this includes any Repairs, Upgrade, Annual Inspections etcetera</p>	<p>Complete Daily, Weekly and Monthly Inspection Sheets Complete Maintenance Request forms and put on the maintenance tracking system, for any work to be undertaken. Work will be planned and prioritised based on risk and appropriate contractors, in house or external engineer support. External contractors would be expected to sign a permit to work before any work is undertaken once they are fully aware of any risks associated with the process, plant and equipment suitable PPE will be worn a visitor and contractors' induction is given on visiting Almetron Ltd. Standard Operating Procedures General Ventilation Bunded and Restricted work area Area closed off to other staff during production activity Spill and First Aid Trained staff available. Sign off in place at the end of the maintenance activity this includes any Repairs, Upgrade, Annual Inspections etcetera</p>	<p>Wear chemically resistant gloves, coveralls, eye protection, face protection and RPE in case of accidental spillage</p>	<p>Duration of task 5 mins</p>	<p>Not applicable</p>	<p>No emissions to soil. No emissions to air outside of the site No emissions to water</p>	<p>9.2.8</p>
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<b>WCS9</b>	Storage of formulation	Not stored	The formulations are not stored as we make to customer orders. Orders are typically shipped withing 3-5 days of order receipt	New inspected UN approved IBC used for formulation. The IBC is stored on a portable bund in Tank 7 Room- Dedicated Area. Product is labelled accordingly with hazards and with the batch number for full traceability. Spill Kit is located in the area General Ventilation Bunded and Restricted work area Spill and First Aid Trained staff available.	Wear chemically resistant gloves, coveralls, eye protection, face protection and RPE in case of accidental spillage	Duration of task 3 mins	Not applicable	No emissions to soil. No emissions to air outside of the site No emissions to water	9.2.9
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WCS10	Quality Control – Lab Analysis	66-100 lab tests per year	<p>Analysed indoors LEV used in the area to prevent any potential hazards.</p> <p>Samples of the chromium trioxide solution are taken after formulation and then analysed in the laboratory to ensure compliance with the required specification. Clean new sample bottles are used and labelled with product name and the batch number. If not to the requirements adjustments are made and the taken sample is put back into the mix, the sample bottle is cleaned and reused until a satisfactory result is obtained.</p> <p>The final product has a small 100ml sample retained (retained for 13 weeks)</p> <p>A laboratory Spill Kit is located in the area</p> <p>Product order Work instruction sheet (WIS) shows the customer requirements, PPE to be worn and any special instructions for the unique order, that has full traceability.</p> <p>Standard Operating Procedures General Ventilation in the Lab. LEV Fume cabinet in the lab with inspections and annual inspection by HSB Insurers. Spill and First Aid Trained staff available.</p>	<p>A laboratory Spill Kit is located in the area</p> <p>Product order Work instruction sheet (WIS) shows the customer requirements, PPE to be worn and any special instructions for the unique order, that has full traceability.</p> <p>Standard Operating Procedures. General Ventilation in the Lab. LEV Fume cabinet in the lab with inspections and annual inspection by HSB Insurers . Spill and First Aid Trained staff available.</p>	Wear chemically resistant gloves, coveralls, eye protection, face protection and RPE in case of accidental spillage	Duration of task 10 mins	Not applicable	<p>No emissions to soil.</p> <p>No emissions to air outside of the site</p> <p>No emissions to water</p>	9.2.10
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WCS11	Waste Management	Disposable coveralls, gloves and chrome drums after washing out	The only waste from the process is PPE and washed-out chromium trioxide drums treated as hazardous waste	Any single use waste PPE along with any wipes/cloths used to clean the equipment after the production process along with clean and empty 25kg drums are collected and disposed off-site by registered hazardous waste companies. Containers with lids are used to collect any PPE and contaminated cleaning products from the process Containers are labelled for disposal. Standard Operating Procedures. General Ventilation. Contractors are aware of the risks and correct disposal requirements of this hazardous waste. Waste Licenses checked and records retained for inspection.	Wear chemically resistant gloves, coveralls, eye protection, face protection and RPE in case of accidental spillage	Duration of task 5 mins	Not applicable	No emissions to soil. No emissions to air outside of the site No emissions to water	9.2.11
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**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

## Photos

### Incoming Storage



### Decanting & Weighing



### Drum Wash



### Transfer to Storage Container



### Bunded IBC Containers



### PPE

