SUCCINCT SUMMARY OF REPRESENTATIVE RISK MANAGEMENT MEASURES (RMMS) AND OPERATIONAL CONDITIONS (OCS)

Legal name of applicant(s):	Linde AMT UK Ltd
Submitted by:	Linde AMT UK Ltd
Date:	November 2023
Substance:	Chromium trioxide, EC 215-607-8 and CAS 1333-82-0
Use title:	Industrial spraying of chromium trioxide mixtures for the coating of metallic articles subject to harsh environment, to ensure a high temperature corrosion & oxidation resistance, as well as anti-fouling properties or lubricity at high temperature, for automotive, aviation, power generation machinery, Oil and Gas and marine applications.
Use number:	Use-1

1. SUMMARY OF RISK MANAGEMENT MEASURES

Risk Management Measures (RMM) and Operational Condition (OC) are identified in the Exposure Scenarios (ES) considered in this document.

To control the exposure at the work place, the following RMM are implemented (including personal protective equipment):

1.1. Exposure scenario 1: SPRAYING PROCESS

Contributing scenario	Task (ERC)	Annual amount (tonnes/ year)	Technical RMM including: Containment, ventilation…	Organisational RMM including: frequency, monitoring, management…	Effectiveness of waste water and waste air treatment	Release factors: water, air, soil (for ERC)	Detailed informations in CSR (section)
ECS-1	ERC 5	[0.100-0.400]	Process not fully enclosed Process performed in a dedicated shop with the most exposing steps performed in dedicated spraying room	Liquid or solid wastes are managed by a specialized company. Regulatory and traceability procedures are available for local authorities. Air and water monitoring are realized every year	Liquid releases: Any solid or slurry waste resulting from on-site process is forwarded to an external waste management company for disposal as hazardous waste Chromium-contaminated liquids are treated on site and then released to a WWTP Atmospheric releases: Air is treated by a filtration system before being released Max. Duration and frequency of Emission for atmospheric releases: - 8 hours per day - 250 days per year Max. Duration and frequency of Emission for water releases: - 24 hours per day - 365 days per year	Monitored: Air (mean value): [10^{-5} – 10^{-1}] Water (mean value): [10^{-5} – 10^{-1}] Soil: Not relevant	9.2.1

ECS: Environmental Contributing Scenario, ERC: Environmental Release Category

Contributing scenario	Task (PROC)	Annual amount (tonnes/ year)	Technical RMM including: Containment, ventilation...	Organisational RMM including: frequency, monitoring, management...	PPE (characteristics)	Other conditions	Detailed informations in CSR (section)
WCS 1	PROC 8b	[0.100-0.400]	- Manipulation performed in a dedicated room - General ventilation : Mechanical ventilation - Local exhaust ventilation (LEV): Other enclosing hood - Process not fully enclosed	<u>Activity:</u> - Falling liquids - Transfer of liquid product with flow of 0.1 - 1 l/minute - Open process - Submerged loading, where the liquid dispenser remains below the fluid level reducing the amount of aerosol formation - Max. duration 15 mins/day/worker - Every working days - Writing procedure - Manipulation performed by trained workers	- Nitrile Gloves - Sperian Turbovisors - Boots covers - Safety clothing (Tyvek disposable suit with hood)	6 operators	9.2.2

Contributing scenario	Task (PROC)	Annual amount (tonnes/ year)	Technical RMM including: Containment, ventilation…	Organisational RMM including: frequency, monitoring, management…	PPE (characteristics)	Other conditions	Detailed informations in CSR (section)
WCS 2	PROC 7	[0.100-0.400]	- Manipulation in dedicated rooms - Local exhaust ventilation (LEV): Other enclosing hood - The spray room is with at least 10 air changes per hour. - Process not fully enclosed	Activity: - Surface spraying of liquids - Moderate application rate (0.3-3l/minute) - Only horizontal or downward - Spraying with no or low compressed air use - 300 mins/ day/worker - Every working days - Writing procedure - Manipulation performed by trained workers - Monitoring	- Respirator with full face shield (EN 14594 3B) with associated protection factor of 40 - Acid resistant gloves - Safety clothing - Safety shoes	6 operators	9.2.3

Contributing scenario	Task (PROC)	Annual amount (tonnes/ year)	Technical RMM including: Containment, ventilation…	Organisational RMM including: frequency, monitoring, management…	PPE (characteristics)	Other conditions	Detailed informations in CSR (section)
WCS 3	PROC 26	[0.100-0.400]	- Manipulation/Transfer around the site - No localized control - General ventilation : Mechanical ventilation giving at least 1 ACH - Process not fully enclosed	Activity: - Handling of contaminated objects - Activities with treated/contaminated objects (surface 1-3m²) - Contamination >90% - 10 mins/ day/worker - Every working days - Writing procedure - Manipulation performed by trained workers	- Boots covers - Nitrile Gloves - Safety clothing (Tyvek disposable suit with hood)	18 operators	9.2.4

Contributing scenario	Task (PROC)	Annual amount (tonnes/ year)	Technical RMM including: Containment, ventilation…	Organisational RMM including: frequency, monitoring, management…	PPE (characteristics)	Other conditions	Detailed informations in CSR (section)
WCS 4	PROC 21	[0.100-0.400]	- Manipulation in a dedicated room partially segregated with ventilation and filtration of recirculated air - Partial personal enclosure with ventilation - General ventilation : Mechanical ventilation - Process not fully enclosed	Activity: - Handling of contaminated objects - Activities with treated/contaminated objects (surface 1-3m2) - Contamination >90% - 30 mins/ day/worker - Every working days - Writing procedure - Manipulation performed by trained workers	- Boots covers - Nitrile Gloves - Safety clothing (Tyvek disposable suit with hood)	29 operators	9.2.5

Contributing scenario	Task (PROC)	Annual amount (tonnes/ year)	Technical RMM including: Containment, ventilation…	Organisational RMM including: frequency, monitoring, management…	PPE (characteristics)	Other conditions	Detailed informations in CSR (section)
WCS 5	PROC 22	[0.100-0.400]	- Manipulation in a dedicated room partially segregated with ventilation and filtration of recirculated air - Partial personal enclosure with ventilation - General ventilation : Mechanical ventilation - Process not fully enclosed	Activity: - Handling of contaminated objects - Activities with treated/contaminated objects (surface 1-3m2) - Contamination >90% - 120 mins/ day/worker - Every working days - Writing procedure - Manipulation performed by trained workers	- Boots covers - Nitrile Gloves - Safety clothing (Tyvek disposable suit with hood)	23 operators	9.2.6

Contributing scenario	Task (PROC)	Annual amount (tonnes/ year)	Technical RMM including: Containment, ventilation…	Organisational RMM including: frequency, monitoring, management…	PPE (characteristics)	Other conditions	Detailed informations in CSR (section)
WCS 6	PROC 13	[0.100-0.400]	- Manipulation in an open area - Localized control: No - General ventilation : Mechanical ventilation - Process not fully enclosed	Activity: - Handling of contaminated objects - Activities with treated/contaminated objects (surface 1-3m2) - Contamination >90% - 60 mins/ day/worker - Every 2 working days - Writing procedure - Manipulation performed by trained workers	- Boots covers - Nitrile Gloves - Safety clothing (Tyvek disposable suit with hood)	12 operators	9.2.7

Contributing scenario	Task (PROC)	Annual amount (tonnes/ year)	Technical RMM including: Containment, ventilation…	Organisational RMM including: frequency, monitoring, management…	PPE (characteristics)	Other conditions	Detailed informations in CSR (section)
WCS 7	PROC 21	[0.100-0.400]	- Manipulation in dedicated rooms - Local exhaust ventilation (LEV): Other enclosing hood - The spray room is with at least 10 air changes per hour. - Process not fully enclosed	Activity: - Handling of contaminated objects - Activities with treated/contaminated objects (surface 1-3m²) - Contamination 10-90% - 60 mins/ day/worker - Every working days - Writing procedure - Manipulation performed by trained workers	- Respirator with full face shield (EN 14594 3B) with associated protection factor of 40 - Boots covers - Nitrile Gloves - Safety clothing (Tyvek disposable suit with hood)	14 operators	9.2.8

Contributing scenario	Task (PROC)	Annual amount (tonnes/ year)	Technical RMM including: Containment, ventilation…	Organisational RMM including: frequency, monitoring, management…	PPE (characteristics)	Other conditions	Detailed informations in CSR (section)
WCS 8	PROC 28	[0.100-0.400]	- Manipulation in an open area - Local exhaust ventilation (LEV): No - General ventilation : Mechanical ventilation - Process not fully enclosed	- Handling of contaminated objects - Activities with treated/contaminated objects (surface >3m²) - Contamination 10-90% - 180 mins/ day/worker - Monthly activities - Writing procedure - Manipulation performed by trained workers	- Sperian Turbovisor power assisted respirator (EN 12942) - Battery face Respirator with full face shield and filter (EN 12942) - Boots covers - Nitrile Gloves - Safety clothing (Tyvek disposable suit with hood)	8 operators	9.2.9

WCS: Worker Contributing Scenario, PROC: Process Category, PPE: Personnal Protective Equipment, RMM: Risk Management Measure