

Professional use of fertilizers containing cobalt carbonate				
Systematic title based on use descriptor	SU22 (Professional use), SU1 PC12 (appropriate PROCs are given in Section 2 below)			
2. Operational conditions and risk management measures				
Task	Involved task		Involved PROCs	
filling	Filling up fertilizer spreader		8a, 9	
Spreading of solid fertilizers	Spreading of fertilizer		8a	
2.1 Control of workers exposure				
Product characteristics				
Task	Use in preparation and content in preparation		Physical form of the product	
filling	Yes (<25% in preparation)		Granules, Solid	
Spreading of solid fertilizers	Yes (<25% in preparation)		Granules, Solid	
Amounts used				
No restriction.				
Frequency and duration of use/exposure				
filling and Spreading of solid fertilizers: <240 min				
Human factors not influenced by risk management				
The shift breathing volume 10 m ³ /8 h (full shift).				
Other given operational conditions affecting workers exposure				
Task	room volume	Indoor use/Outdoor use	Process temperature	Process pressure
filling	No restriction	Indoor and outdoor use	Ambient temperatures.	Not considered relevant for occupational exposure assessment of the conducted processes
Spreading of solid fertilizers	Not applicable	Outdoor use		
Technical conditions and measures at process level (source) to prevent release				
All workplaces level of containment/segregation not required.				
Technical conditions and measures to control dispersion from source towards the worker				
Task	Level of separation	Type of ventilation	Efficiency of LC (according to MEASE)	Additional information
filling	Level of separation if required see frequency and duration of exposure section. Installation of ventilated (positive pressure) control rooms can also reduce exposure.	Dilution ventilation	0%	-
Spreading of solid fertilizers		Natural ventilation is adequate.	-	
Organisational measures to prevent/limit releases, dispersion and exposure				
Additional information See Section: 7, 8, 11 (SDS).				
Conditions and measures related to personal protection, hygiene and health evaluation				
Specification of respiratory protective equipment (RPE) not required for all workplaces. Since cobalt carbonate has sensitising properties, the use of suitable chemical resistant gloves (EN 374) providing protection for the duration of activity (e.g. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), butyl rubber (0.7 mm) is a prerequisite for all process steps in which direct contact to cobalt substances is possible. In cases where direct contact with cobalt carbonate cannot be avoided, a protective suit conforming to EN13982 should be worn. As a general requirement for the conducted processes: standard working clothes (long-sleeve overall) and safety shoes.				
2.2 Control of environmental exposure				
Product characteristics				
Cobalt can be in any form in an article.				
Amounts used				
Not applicable.				
Frequency and duration of use				
Continuous use/release: 365 days/year.				

Environment factors not influenced by risk management				
Flow rate of receiving surface should be sufficiently high to dilute the effluent concentration of the STP below the PNEC (Water/ Sedimentation).				
Other given operational conditions affecting environmental exposure				
Indoor or outdoor use of products containing cobalt is possible. There are no intended Co releases due to wide dispersive use and the non-intended releases are negligible and pose no threat to the environment.				
Conditions and measures related to municipal sewage treatment plant				
Presence of municipal sewage treatment plant.				
Conditions and measures related to external treatment of waste for disposal				
Fraction of daily/annual use expected in waste: 60% of all articles, 40% is recycled. (EC, 2010) Appropriate waste codes: 20 01 34; 20 01 33; 20 01 40; 20 03 01; 20 03 07 Suitable Disposal: Waste from end-of-life articles can be disposed of as municipal waste, except when they are separately regulated, like electronic devices, batteries, vehicles, etc. Disposal of wastes is possible via incineration (Directive 2000/76/EC) or landfilling (BAT Reference Document 2006, Council Directive 1999/31/EC and Council Decision 19/12/2002).				
Conditions and measures related to external recovery of waste				
Not applicable.				
3. Exposure estimation and reference to its source				
Occupational exposure				
The risk characterisation ratio (RCR) is the quotient of the exposure estimate (as cobalt carbonate) and the respective DNEL (Derived No Effect Level) and has to be below 1 to demonstrate a safe use. For inhalation exposure, the RCR is based on a DNEL of 81 µg/m ³ (as cobalt carbonate).				
Task	Method used for inhalation exposure assessment	Inhalation exposure estimate (RCR)	Method used for dermal exposure assessment	Dermal exposure estimate (RCR)
filling	MEASE	30 µg/m ³ (0.372)	Since cobalt carbonate has sensitising properties, dermal exposure has to be minimised as far as technically feasible. A DNEL for dermal effects has not been derived. Thus, dermal exposure is not assessed in this exposure scenario.	
Spreading of solid fertilizers	MEASE	30 µg/m ³ (0.372)		
Environmental emissions				
Note: The measures reported in this section have not been taken into account in the exposure estimates related to the exposure scenario above. They are not subject to obligation laid down in Article 37(4) of REACH. Thus, the downstream user is not obligat.				
4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES				
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