

HH-20.1. Occupational scenario for packaging into big bags

Systematic title based on use descriptor	PROCs	
	8a	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.
	8b	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.
	9	Transfer of substance or preparation into small containers (dedicated filling line, including weighing).

HH-20.2 Controlling worker exposure

Product characteristics	Granular or powder form.	
Amounts used	Several hundred tonnes.	
Frequency and duration of use	Shift-length activity.	
Human factors not influenced by risk management	None	
Other given operational conditions affecting workers exposure	Activities take place indoors at ambient conditions.	
Technical conditions and measures at process level (source) to prevent release	Generally automated process, in that the correct quantity is determined by load cells.	
Technical conditions and measures to control dispersion from source towards the worker	LEV present, the neck of the bag is tied around the charging chute. In some instances the LEV is a canopy hood above the bag as it is filled. This is generally less effective than when the bag is tied to the charging chute.	
Organisational measures to prevent /limit releases, dispersion and exposure	Appropriate training. Regular testing and maintenance of plant and equipment.	
Conditions and measures related to personal protection, hygiene and health evaluation	Clothing	Standard work clothes.
	Gloves	Not required for normal industrial exposure.
	Eye protection	Required where good hygiene practice or substance classification demands it.
	RPE	P2/P3 required where exposure is above the DNEL

HH-20.3. Exposure estimation

		INHALATION						
		Activity	Source/ Parameters	RMM	Value 8h TWA mg B/m ³	RCR DNEL = 1.45 mg B/m ³		
Human Health Exposure Estimations	Measured	Packaging in 25kg bags	90P of measured data (22 datapoints)	P2 respirators	0.58	0.4		
			DERMAL					
			Activity	Source/ Parameters	RMM	Value mg B/day	RCR DNEL = 4800 mg B/day	
	Modelled (MEASE)	Packaging in 25kg bags		Physical form	high dustiness	-	0.144	<0.001
				Content	5 - 25% boron			
				PROC	8			
				Duration	> 240 min			
				Use pattern	non-dispersive			
				Handling	non-direct			
		Contact level	intermittent					

HH-20.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

If the parameters used in the MEASE model outlined above do not reflect conditions at the DU facility, the DU can use MEASE and input the parameters that do reflect conditions at the DU facility to check whether the DU works inside the boundaries set by the ES. Detailed guidance for evaluation of ES can be acquired via your supplier or from the ECHA website (guidance R14, R16).