

HH-14.1. Occupational scenario for loading road tankers

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.

HH-14.2 Controlling worker exposure

Product characteristics	Granular or powder form.	
Amounts used	Road tankers take about 25 tonnes of borate.	
Frequency and duration of use	30 min to load a tanker. Exposure only during opening and closing of the lids and takes only few minutes.	
Human factors not influenced by risk management	None	
Other given operational conditions affecting workers exposure	Activities take place outdoors at ambient conditions.	
Technical conditions and measures at process level (source) to prevent release	Tanker loading is controlled automatically	
Technical conditions and measures to control dispersion from source towards the worker	The displaced air is released from a valve usually away from the worker. This valve may be filtered to prevent release of the product.	
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	Overalls and safety shoes
	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-14.3. Exposure estimation

Human Health Exposure Estimations	INHALATION						
		Activity	Source/ Parameters	RMM	Value 8h TWA mg B/m ³	RCR DNEL = 1.45 mg B/m ³	
	Measured	Loading road tankers	90P of measured data	RPE not taken into account	0.37 (Not 8h TWA)	0.26	
	Modelled (ART)	Loading road tankers	120 minutes duration Fine dust Falling powders Transferring 100-1000 kg/minute Routine transfer Open process Effective housekeeping Outdoors	LEV in use	0.28	0.19	
	DERMAL						
		Activity	Source/ Parameters	RMM	Value mg B/day	RCR DNEL = 4800 mg B/day	
	Modelled (MEASE)	Loading road tankers	Physical form	high dustiness	-	0.029	<0.001
			Content	5 - 25% boron			
			PROC	8			
			Duration	15 – 60 min			
Use pattern			non dispersive				
Handling			non-direct				
Contact level	incidental						

HH-14.4. 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).