HH-31.1. Occupational scenario for compaction and tableting of borate-containing powders

Systematic title based on use descriptor	PROCs	
	14	Production of preparations/articles by tabletting, compression, extrusion, pelletisation.

HH-31.2 Controlling worker exposure

Product characteristics		Granular or powder form.
Amounts used		May be several tonnes per shift.
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.
Technical conditions and measures at process level (source) to prevent release		Parts of the plant may be enclosed.
Technical conditions and measures to control dispersion from source towards the worker		LEV
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-31.3. Exposure estimation

Human Health Exposure Estimations

INHALATION

	Activity	Source/ Parameters	RMM	Value 8h TWA mg B/m^3	RCR DNEL = 1.45 mg B/m3
Measured	Compacting borates/fertiliser into pellets	Measured data (4 datapoints)	-	1.3 (max)	0.90
Modelled (ART)	Compacting pure borates	Fine dry dust, Compressing of powders Compressing 10-100kg/minute Open process Effective housekeeping Indoors Any size workroom Good natural ventilation	LEV	0.15 (90P)	0.10
Modelled (ART)	Compacting borate mixtures	Fine dry dust Compressing of powders Compressing 10-100kg/minute Open process Effective housekeeping Indoors Any size workroom Good natural ventilation	LEV	0.79 – 1.5 (90P)	< 1 when %boron is < 95%

DERMAL

	Activity	Source/ Parameters		RMM	Value mg B/day	RCR DNEL = 4800 mg B/day
Modelled (MEASE)	Compacting pure borates	**Physical form**	high dustiness	-	2.4	<0.001
		Content	> 25% boron			
		PROC	14			
		Duration	> 240 min			
		Use pattern	non dispersive			
		Handling	direct			
		Contact level	intermittent			

HH-31.4. 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).