

HH-28.1. Occupational scenario for application of boron-containing liquid fertiliser

Systematic title based on use descriptor	PROCs	
	11	Non-industrial spraying.
	13	Treatment of articles by dipping and pouring.

HH-28.2 Controlling worker exposure

Product characteristics	Liquid, containing between 0.001 and 7.7% boron.	
Amounts used	Widely varying from tens to hundreds of litres.	
Frequency and duration of use	Shift length activity.	
Human factors not influenced by risk management	None	
Other given operational conditions affecting workers exposure	The fertiliser is applied outdoors.	
Technical conditions and measures at process level (source) to prevent release	None	
Technical conditions and measures to control dispersion from source towards the worker	Air conditioned cabs possible.	
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	-
	Gloves	Not required for normal industrial exposure
	Eye protection	-
	RPE	-

HH-28.3. 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	Modelled (ART)	Backpack spraying of liquid fertiliser	Liquid Surface spraying of liquids Low application rate Horizontal or downward spraying with no or low compressed air No housekeeping Outdoors and no localised controls	-	0.17 (90P)	0.12														
	Modelled (ART)	Tractor spraying of liquid fertiliser	Liquid Surface spraying of liquids Low application rate Horizontal or downward spraying with no or low compressed air No housekeeping Outdoors No localised controls	-	0.0014 (90P)	<0.001														
			DERMAL																	
			Activity	Source/ Parameters	RMM	Value mg B/day	RCR DNEL = 4800 mg B/day													
	Modelled (MEASE)	Backpack spraying of liquid fertiliser	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="text-align: center;">Physical Form</td><td>aqueous solution</td></tr> <tr><td style="text-align: center;">Content</td><td>1 – 5% boron</td></tr> <tr><td style="text-align: center;">PROC</td><td>11</td></tr> <tr><td style="text-align: center;">Duration</td><td>> 240 min</td></tr> <tr><td style="text-align: center;">Use pattern</td><td>wide dispersive</td></tr> <tr><td style="text-align: center;">Handling</td><td>non-direct</td></tr> <tr><td style="text-align: center;">Contact level</td><td>intermittent</td></tr> </table>	Physical Form	aqueous solution	Content	1 – 5% boron	PROC	11	Duration	> 240 min	Use pattern	wide dispersive	Handling	non-direct	Contact level	intermittent	-	0.048	<0.001
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HH-28.4. 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).

