

HH-6.1. Occupational scenario for industrial application of adhesive

Systematic title based on use descriptor	PROCs	
	2	Use in closed, continuous process with occasional controlled exposure.
	3	Use in closed batch process (synthesis or formulation).
	4	Use in batch and other process (synthesis) where opportunity for exposure arises.
	5	Mixing or blending in batch processes for formulation of preparations* and articles (multistage and/or significant contact).
	7	Industrial spraying.
	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).
10	Roller application or brushing.	
13	Treatment of articles by dipping and pouring.	

HH-6.2 Controlling worker exposure

Product characteristics	Adhesives may contain up to 1.5% boron.	
Amounts used	Up to 300 kg boron per day.	
Frequency and duration of use	Continuous or semi continuous process.	
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	The adhesive is applied as a liquid.	
Technical conditions and measures to control dispersion from source towards the worker	Automated process, the operator is not in the immediate vicinity.	
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	-

HH-6.3. 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
	Modelled (ART)	Spraying of adhesives	480 minutes duration Powders dissolved in a liquid matrix 1-5% boron Low viscosity Surface spraying of liquids Moderate application rate Spraying only horizontally or downwards No or low compressed air	Open process with effective housekeeping, enclosing hood LEV and no secondary controls	0.11 (90P)	0.076
DERMAL						
	Activity	Source/ Parameters	RMM	Value mg B/day	RCR DNEL = 4800 mg B/day	
Measured	Dermal contact unlikely	-	-	-	-	
Modelled (MEASE)	Spraying of adhesives	Physical form	aqueous solution	-	0.048	<0.001
		Content	1-5% boron			
		PROC	7			
		Duration	> 240 min			
		Use pattern	non dispersive			
		Handling	non-direct			
Contact level	incidental					

HH-6.4. 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).