

HH-40.1. Occupational scenario for industrial/professional use of fluxes in welding/brazing

Systematic title based on use descriptor	PROCs	
	25	Other hot work operations with metals.

HH-40.2 Controlling worker exposure

Product characteristics	The flux paste used when welding or brazing contains 1.48% boron.	
Amounts used	Several kg per welder per year.	
Frequency and duration of use	Industrial: daily shift-length activity. Professional: less frequent shorter 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	None	
Technical conditions and measures to control dispersion from source towards the worker	LEV present.	
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	P3 required to prevent inhalation exposure to welding fume.

HH-40.3. 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 (MEASE)	Welding/brazing	Physical form	massive	Exterior LEV RPE APF 20 (P3)	0.005	<0.001	
			Content	1 -5% boron				
			PROC	25				
			Duration	> 240 min				
			Scale	industrial				
	DERMAL							
		Modelled (MEASE)	Using abrasive wheels	Physical form	massive	-	0.2	<0.001
				Content	1 -5% boron			
				PROC	25			
				Duration	> 240 min			
Use pattern				wide dispersive				
Handling				non direct				
Contact level				intermittent				

HH-40.4. 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).