

HH-4.1. Occupational scenario for use of fabric detergents in industrial or professional settings

Systematic title based on use descriptor	PROCs	
	1	Use in closed process, no likelihood of exposure.
	2	Use in closed, continuous process with occasional controlled exposure.
	3	Use in closed batch process (synthesis or formulation).
	10	Roller application or brushing.
	11	Non-industrial spraying.
	13	Treatment of articles by dipping and pouring.
19	Hand-mixing with intimate contact and only PPE available.	

HH-4.2 Controlling worker exposure

Product characteristics	Liquid or gel containing < 0.5% boron.	
Amounts used	In the order of grams per wash.	
Frequency and duration of use	1 minute per load up to 5 times per day in automatic washing machines. Hand-washing can be up to a couple of minutes per day.	
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	Automatic washing machines are on a closed cycle.	
Technical conditions and measures to control dispersion from source towards the worker	Detergents may be automatically dispensed into washing machines.	
Organisational measures to prevent /limit releases, dispersion and exposure	Appropriate training. Regular testing and maintenance of equipment.	
Conditions and measures related to personal protection, hygiene and health evaluation	Clothing	-
	Gloves	Not required for normal industrial exposure
	Eye protection	Required where good hygiene practice or substance classification demands it.
	RPE	-

HH-4.3. Exposure estimation

INHALATION								
Not relevant, detergents are liquid and no aerosols are formed								
DERMAL								
Human Health Exposure Estimations	Modelled (MEASE)	Activity	Source/ Parameters		RMM	Value mg B/day	RCR DNEL = 4800 mg B/day	
			Professional hand wash	Physical form				liquid
				Content				< 1% boron
				PROC				19
				Duration				15 – 60 min
				Use pattern				non dispersive
				Handling				direct
Contact level	intermittent							

HH-4.4. 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).