

E-11.1 Environmental scenario for generic industrial use of borates resulting in inclusion into or onto a matrix

Systematic title based on use descriptor	ERCs	Description			
	5	Industrial inclusion into or onto a matrix			
Sub scenarios		ES1: Default dilution	ES2: Dilution of 100	ES3: Dilution of 1 000	ES4: No water emissions

E-11.2 Controlling environmental exposure

Product characteristics	Granular, powder or dissolved form				
Amounts used	ES1: 7.5 T B/y	ES2: 75 T B/y	ES3: 750 T B/y	ES4: 1 150 T B/y	
Frequency and duration of use	100 days per year				
Environment factors not influenced by risk management	ES1: Dilution of 10	ES2: Dilution of 100	ES3: Dilution of 1 000	ES4: Not relevant	
Other given operational conditions affecting environmental exposure	Delivery and raw material handling mostly happen in open air. Weighing takes place inside. Most of the subsequent steps take place inside a building in (semi) enclosed systems.				
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	Release factor to water after on-site treatment	ES1: 500 000 g/T	ES2: 500 000 g/T	ES3: 500 000 g/T	ES4: Not relevant
	Release factor to air after on-site treatment	ES1: 36 562 g/T	ES2: 36 562 g/T	ES3: 36 562 g/T	ES4: 36 562 g/T
Organizational measures to prevent/limit release from site	Spillages of powder or granulated borates should be swept or vacuumed up immediately and placed in containers for disposal in order to prevent unintentional release to the environment.				
Conditions and measures related to municipal sewage treatment plant	Not relevant, boron is not removed from water in municipal STP. If sites discharge to a municipal STP the concentration of boron should not exceed 10 mg/L in the municipal STP.				
Conditions and measures related to external treatment of waste for disposal	Where appropriate material should be recovered and recycled through the process. Waste containing borates should be handled as hazardous waste.				

E-11.3. Exposure estimation

ES1: Environmental Exposure Estimations		PEC	PNECadd	RCR
	Aquatic environment		1 931 µg/L	2 020 µg/L
Terrestrial environment		0.04 mg/kg dw	5.4 mg/kg dw	0.007
ES2: Environmental Exposure Estimations		PEC	PNECadd	RCR
	Aquatic environment		1 931 µg/L	2 020 µg/L
Terrestrial environment		0.34 mg/kg dw	5.4 mg/kg dw	0.063
ES3: Environmental Exposure Estimations		PEC	PNECadd	RCR
	Aquatic environment		1 931 µg/L	2 020 µg/L
Terrestrial environment		3.36 mg/kg dw	5.4 mg/kg dw	0.622
ES4: Environmental Exposure Estimations		PEC	PNECadd	RCR
	Aquatic environment		Not relevant	2 020 µg/L
Terrestrial environment		5.15 mg/kg dw	5.4 mg/kg dw	0.954

E-11.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

The DU works inside the boundaries set by the ES if either the proposed risk management measures or emissions (expressed in g/T) as described above are met or the DU can demonstrate on his own that his implemented risk management measures or emissions are adequate. Detailed guidance for evaluation of ES can be acquired via your supplier or from the ECHA website (guidance R16). For environmental exposure, a DU-scaling tool (free download: <http://www.arche-consulting.be/Metal-CSA-toolbox/du-scaling-tool>) is available.