

E-16.1 Environmental scenario for industrial use of borates during the manufacture of low alkali glass

Systematic title based on use descriptor	ERCs	Description
	2	Formulation of mixtures
	5	Industrial inclusion into or onto a matrix
	6a	Industrial use resulting in manufacture of another substance (use of intermediates)

E-16.2 Controlling environmental exposure

Product characteristics	Granular or powder form	
Amounts used	1 150 T B/y	
Frequency and duration of use	365 days per year	
Environment factors not influenced by risk management	Dilution of 181	
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	1 000 g/T
	Release factor to air after on-site treatment	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-16.3. Exposure estimation

ES1: Environmental Exposure Estimations		PEC	PNECadd	RCR
	Aquatic environment	231 µg/L	2 020 µg/L	0.114
	Terrestrial environment	5.15 mg/kg dw	5.4 mg/kg dw	0.954

E-16.4. 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.