

**SUBSTANCE IDENTITY PROFILE (SIP) AND ANALYSIS TO PERFORM****Identification:**

Substance name: **PERBORIC ACID, SODIUM SALT**  
 IUPAC name: Sodium perborate  
 Molecular formula:  $\text{NaBO}_2(\text{OH})_2$   
 Molecular Mass: 99,8 g/mol  
 CAS No.: 11138-47-9  
 EINECS No.: 234-390-0  
 Reference: (EU-Risk Assessment Report Perboric acid, sodium salt, 2007)

**Substance definition:**

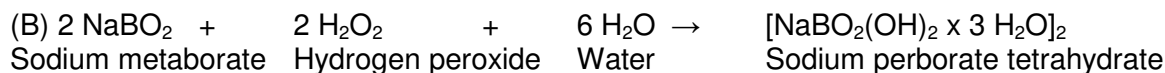
The substance to be registered is Perboric acid, sodium salt as a mono-constituent substance covering all different hydrates (Sodium perborate monohydrate and Sodium perborate tetrahydrate).

**Composition:**

Parameter	CAS No.	EC No.	Name	Range
Constituent	11138-47-9	234-390-0	Perboric acid, sodium salt	> 90,0 %
Impurities	1330-43-4	215-540-4	Disodium tetraborate	< 2,0 %
Additives (stabilizer)	7487-88-9	231-298-2	Magnesium sulphate	< 1,0 %

**Other informations****Technological Process:**

Sodium perborate tetrahydrate is produced in a two-stage process with borax, sodium hydroxide and hydrogen peroxide as starting materials. The process is based on the following reaction scheme:



Reaction (A) is carried out at temperatures between 60 and 95°C. Instead of borax also impure minerals such as kernite and tincal can be used. However, it is then necessary to filter the salt solution. Reaction (B) is carried out at a temperature of about 25°C. At the end of the process the solution is cooled down to 15°C and the precipitated sodium perborate tetrahydrate is separated by filtration. The remaining solution can be fed back to the process to achieve a continuous production. However, also a batch technique is possible. Both methods are aimed to give an as attrition-resistant product as possible. Sodium perborate monohydrate is gained from the tetrahydrate by dehydration in a fluidised-bed dryer with warm air or in a vacuum (EU-Risk Assessment Report Perboric acid, sodium salt, 2007).

**Remark in IUCLID-chapter 1.2 Composition for impurity Disodium tetraborate, anhydrous:**

Cave: Disodium tetraborate EC No. 215-540-4, CAS No.: 1330-43-4 is on the Candidate list of SVHC for the inclusion in Annex XIV (Decision number ED/30/2010); this implies obligations to producers, importers and suppliers to safeguard and report safe use conditions when the substance is contained in articles or mixtures at concentrations above 0.1 % (w/w).

**Classification & Labelling:**

According to Regulation (EC) 1272/2008, Annex VI.

**Recommendation on Analytical Methods for Substance Identification & Determination of Composition/ Purity of PBS:**

- Identify the substance qualitatively by FTIR or X-ray diffraction (XRD)
- Analysis of the content of PBS by permanganometric titration of the  $\text{AvOx}$
- Analysis of the content of tetraborates by titration with NaOH using mannite to produce the mannite boric acid complex
- Analysis of Mg by ICP or AAS to determine the content of  $\text{MgSO}_4$

For any further question, you can contact:

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